

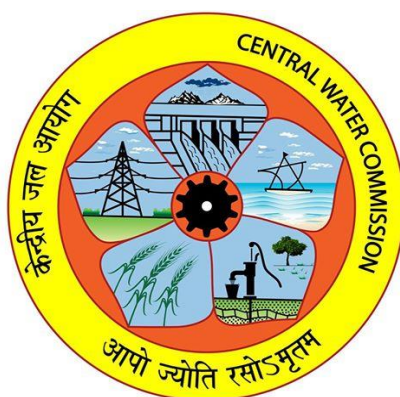
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# **LEGAL INSTRUMENTS ON RIVERS IN INDIA**

(VOL – III)

**AGREEMENTS ON INTER STATE RIVERS**

**PART TWO**



**CENTRAL WATER COMMISSION  
INTER STATE MATTERS DIRECTORATE  
NEW DELHI**

October, 2015

## FOREWORD

Central Water Commission during 1995-97 brought out publications titled “Legal Instruments on Rivers in India” in four volumes. These publications cover Constitutional Provisions, important notifications under Central laws, international agreements and treaties and awards of the Water Disputes Tribunals.

The volume III of aforesaid publication “Agreements on Inter-State Rivers” was brought out in 1995 in which agreements signed/reached up to 1994 were included. Subsequently, new agreements / MOUs on water sharing and projects implementation have been signed/reached between different states/UTs.

Water Resources Development using surface water of rivers is guided by the legal framework both in its generalities and specifics. The knowledge of legal and constitutional provisions is therefore, an essential pre-requisite for Planning, Operation and Management of Water Resources of the rivers. Inter-State river agreements on water sharing and project implementation are basic legal instruments in this regard.

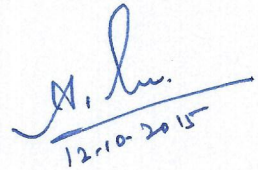
Keeping above in view, “The Legal Instruments on Rivers in India - Vol III”, 1995 is being updated and revised after including new agreements/MoUs on water sharing and project implementation which have been made available by States/UTs. Agreements signed/reached before 1994 but not included in the existing publication due to various reasons are being included in the revised volume.

The updated version has been split in two parts. Part I contains Inter-State river agreements on water sharing and project implementation in respect of Indus, Ganga and Brahmaputra basins. Part II contains Inter-State river agreements on water sharing and project implementation in respect of Peninsular rivers. As many of the agreements in the updated version are very old signed/reached more than 30 years ago, additional information related to and about the status of the agreements has been included in the updated version in the form of Footnotes.

I sincerely hope that updated version will serve as ready reference to all users in Water Resources Planning, Development and Management within the framework of various provisions in Indian Constitution.

I wish to put on record my appreciation for the initiative of Irrigation Management Organisation in updating this compilation.

New Delhi,  
October, 2015.

  
(A.B. Pandya)  
Chairman, CWC



## PREFACE

India has been endowed with considerable water resources through numerous small and large rivers. Some of the larger Indian Rivers like the Indus or the Ganga- Brahmaputra- Meghna are international rivers. These, and most of the other rivers are the interstate rivers. Of the total geographical area of India, approximately 95% of the area is under international or interstate rivers. The water Resources development of these rivers takes place within the legal framework of development of the interstate rivers. A sufficient familiarity with this legal framework that is both its generalities and the specifics of a particular problem, is therefore, an essential pre-requisite for anyone interested in Planning, Development, Operation and Management of Water Resources of these rivers.

The basic legal instruments which need to be referred to in this context can be classified as:-

1. The Constitutional provisions relevant to interstate rivers.
2. Treaties or agreements between India and other countries in regard to development of international rivers/ basins.
3. The Laws enacted by the Parliament in connection with the development, use and regulation of interstate rivers.
4. The awards and the proceedings of the inter-state water disputes tribunals set up by the Central Government.
5. Notifications, Resolutions, Orders etc. issued by the Central Government in pursuance of the Laws or Tribunal awards, setting up agencies, machineries or procedures to deal with interstate rivers, from time to time.
6. The various agreements, contract etc. reached by the State Govts., amongst or between themselves, in regard to interstate rivers. This includes the various agreements amongst or between the princely states and Indian Provinces. Similarly, minutes of important interstate meetings about the interstate water problems, signed by the concerned parties which reflect agreed decisions.
7. Notifications, Resolutions, Orders etc. passed by Central Govt. or State Govts., in pursuance of interstate agreements setting up agencies, machineries or procedures etc. to deal with interstate rivers.

Of the above various types of documents, some would be of more general interest to a large group of persons dealing with similar problems; others may be of rather limited interest.

The Central Water Commission as the National Apex Body while appraising Water Resources Development projects has also to deal with the various aspects of interstate water issues. The CWC therefore, with a view to make these documents more general and readily


available to all users, during 1995-1997, brought series of publications titled "Legal instruments about interstate rivers" in the following form:

|           |   |
|-----------|---|
| Vol I :   | Constitutional provisions, Central Laws.<br>Important notifications under Central Laws                    |
| Vol II :  | Awards of Interstate Water Dispute Tribunal.<br>Important notifications under these Laws                  |
| Vol III : | Agreements on Interstate rivers, Important<br>notifications under these agreements.                       |
| Vol IV :  | International agreements and treaties,<br>Important notifications under these<br>agreements and treaties. |

Of these series, the Vol. II has already been updated and published and Vol III is now being updated keeping in view of the fact that many new agreements/MoUs on water sharing and project implementation have been signed /reached among States/UTs. The updated version has been split in two parts. Part I contains Inter-State river agreements on water sharing and project implementation in respect of Indus, Ganga and Brahmaputra basins. Part II contains Inter-State river agreements on water sharing and project implementation in respect of Peninsular rivers. As many of the agreements in the updated version are very old signed/reached more than 30 years ago, additional information related to and about the status of the Agreements has been included in the updated version in the form of Footnotes.

I compliment the staff of Irrigation Management Organisation of CWC in particular Shri Navin Kumar, Chief Engineer, Shri B.P. Pandey, Director, and Shri Chaitanya K.S., Asst. Director for making concerted efforts in bringing out this revised compilation.

New Delhi,  
October, 2015.

  
(Narendra Kumar)  
Member (WP&P), CWC

| S. No | CONTENTS  | Page  |
|-------|---|-------|
|       | <b>MAHI BASIN</b>   | 1-8   |
| 1     | Agreement between Rajasthan and Gujarat for the exploitation of Mahi river.   | 1     |
| 2     | Agreement between Rajasthan and Gujarat, supplemental to the agreement arrived at in 1966 between Rajasthan and Gujarat for the exploitation of the Mahi river.   | 2-4   |
| 3     | Agreement between Rajasthan and Gujarat, supplemental to the agreements arrived at in 1966 and 1975 between Rajasthan and Gujarat for the exploitation of the Mahi river.   | 5-6   |
| 4     | Agreement between Rajasthan and Gujarat supplemental to the agreements arrived at in 1966, 1975 and 1976 between Rajasthan and Gujarat for the exploitation of the Mahi river.  | 7-8   |
|       | <b>SUBARNAREKHA BASIN</b>   | 9-21  |
| 5     | Minutes of the second meeting of the Subarnarekha and Burabalanga projects committee held on Friday the 19 <sup>th</sup> June, 1964.  | 9-10  |
| 6     | Agreement regarding utilisation of the waters of the Subarnarekha and the Kharkai reached by the Chief Ministers of Bihar and Orissa at Patna on the 17 <sup>th</sup> January, 1976.  | 11-12 |
| 7     | Further agreement regarding utilisation of the waters of the Subarnarekha and Kharkai reached by the Chief Ministers of Orissa and Bihar at Bhubaneswar on the 25 <sup>th</sup> October, 1976.  | 13-15 |
| 8     | Agreement on the utilisation of the water resources of the Subarnarekha-Kharkai basin where West Bengal, Bihar and Orissa are co-basin states, reached by the Chief Ministers of West Bengal and Bihar at Patna on 19 <sup>th</sup> July, 1978.           | 16-17 |
| 9     | Agreement on the utilisation of the water resources of Subarnarekha-Kharkai basin, where Bihar, Orissa and West Bengal are co-basin states, reached by the Chief Ministers of Bihar, Orissa and West Bengal at New Delhi on 7 <sup>th</sup> August, 1978. | 18-21 |
|       | <b>MAHANADI BASIN</b>   | 22-32 |
| 10    | Minutes of the meeting of Madhya Pradesh and Orissa officers of Irrigation & Electricity Departments held at Pachmarhi on 15.6.73.  | 22-28 |
| 11    | Memorandum of agreement entered into between the States of Madhya Pradesh and Orissa on 28.4.1983 at Bhubaneswar.   | 29-32 |
|       | <b>VAMSADHARA AND EAST FLOWING RIVERS BETWEEN ORISSA AND AP</b>   | 33-63 |
| 12    | Minutes of discussion held at Bhubaneswar between the representatives of Andhra Government and Orissa Government of 7 <sup>th</sup> and 8 <sup>th</sup> July, 1956.   | 33    |
| 13    | Note of discussions held at the meeting of the joint control board machkund on the 14 <sup>th</sup> June, 1960.   | 34    |

|    |   |       |
|----|---|-------|
| 14 | Decision taken at interstate conference held between the Chief Ministers of Andhra Pradesh and Orissa at Hyderabad on 17 <sup>th</sup> and 18 <sup>th</sup> July, 1961.   | 35    |
| 15 | Proceedings of the Conference between the Additional Chief Engineer (irrigation) Orissa State, Irrigation Adviser and Consulting Engineers Addl. Secretary to Govt. P.W.D. Andhra Pradesh and Chief Engineer (General & Irrigation) Andhra Pradesh held on 4 <sup>th</sup> Sept. 1962   | 36-37 |
| 16 | Minutes of the discussions held at Bhubaneswar on 30 <sup>th</sup> September 1962, between Sri M. C. Pani, Addl. Chief Engineer, Irrigation, Government of Orissa & Sri L. Venkatakrishna Iyer, Irrigation Advisor & Consulting Engineer to Govt. Andhra Pradesh and Addl. Secretary to Government P.W.D., Andhra Pradesh, Hyderabad. | 38    |
| 17 | Proceeding of the meeting between the Chief Minister of Andhra Pradesh and Orissa at Hyderabad on the 15 <sup>th</sup> of December, 1978.   | 39-41 |
| 18 | Proceedings of the meeting held on 27.7.1980 at Bhubaneswar between the officers of the Government of Orissa and Government of Andhra Pradesh to settle outstanding matters.  | 42-44 |
| 19 | Summary record of discussions in the meeting held on 10.1.84 at New Delhi under the Chairmanship of Shri H. S. Krishnaswamy, Member (WR), CWC and Ex-Officio Addl. Secy. to the Government of India on Vamsadhara project stage-II flood hydrology of Neradi barrage.   | 45-48 |
| 20 | Proceeding of the meeting held on 9.2.1985 at Bhubaneswar on Vamsadhara project.  | 49-51 |
| 21 | Minutes of the meeting held on 25.8.1985 at Bhubaneswar on Vamsadhara project stage- II.  | 52    |
| 22 | Minutes of the meeting convened by Union Minister of Water Resources with the Chief Ministers of Andhra Pradesh and Orissa on 15.1.1987 to discuss the inter-state issues involved in the Vamsadhara project stage-II of Andhra Pradesh.  | 53-54 |
| 23 | Minutes of the inter-state meeting held on 8 <sup>th</sup> April, 1988 with the state engineers of Andhra Pradesh and Orissa to discuss the inter-state issues involved in the Vamsadhara project stage – II.   | 55-56 |
| 24 | Summary record of discussions of the inter-state meeting on Vamsadhara stage-II project held on 8.3.91.   | 57-58 |
| 25 | Summary record of the inter-state official level meeting between A.P. and Orissa states held by Member (P&P), CWC on 22.11.91 to consider Vamsadhara stage-II and Jhanjavati projects of Andhra Pradesh.  | 59-60 |
| 26 | Minutes of discussion between Hon'ble Chief Minister, Orissa and Hon'ble Chief Minister, Andhra Pradesh at Bhubaneswar on June 10, 1992.  | 61-63 |
|    | <b>PENNAR, PALAR AND PONNIAR BASINS</b>   | 64-96 |
| 27 | Agreement dated 18 <sup>th</sup> February 1892 between the Governments Of Mysore and Madras regarding new irrigation works.   | 64-78 |
| 28 | Agreement reached at the conference of Mysore and Madras held in the secretariat at Bangalore on the 4 <sup>th</sup> and 5 <sup>th</sup> September, 1933.   | 79-80 |

|    |  |         |
|----|--|---------|
| 29 | Minutes of the meeting held at Bangalore on the 29 <sup>th</sup> June and 1 <sup>st</sup> and 2 <sup>nd</sup> July, 1956 in the office of Chief Engineer, Mysore in connection with Palar Water Dispute.   | 81-87   |
| 30 | Agreement executed between the Government of Puducherry and Government of Tamil Nadu in the matter of sharing of water at Sornavur anicut across river Ponnai.   | 88-93   |
| 31 | Modified summary record of discussions of the third inter-state meeting on the Palar water dispute between Tamil Nadu & Andhra Pradesh held at New Delhi on 24 <sup>th</sup> December, 2010.   | 94-96   |
|    | <b>TAPI BASIN</b>  | 97-104  |
| 32 | Agreement of certain inter-state projects between Maharashtra and Madhya Pradesh of March, 1964.   | 97-98   |
| 33 | Agreement reached regarding certain inter-state irrigation and hydel projects between Madhya Pradesh and Maharashtra of May, 1969.   | 99-100  |
| 34 | Inter-State agreement dated 12.01.1986 for sharing of Tapi Water between Maharashtra and Madhya Pradesh.   | 101-102 |
| 35 | Memorandum of Understanding for Utilisation of 140.00 MCM (5 TMC) of water from Ukai reservoir (Gujarat) by Government of Maharashtra.   | 103-104 |
|    | <b>DAMANGANGA RIVER</b>  | 105-117 |
| 36 | Agreement dated 29 <sup>th</sup> September, 1992 between state of Gujarat, Union Territories of Dadra & Nagar Haveli and Daman & Diu regarding Damanganga Madhuban dam project.  | 105-115 |
| 37 | Memorandum of Understanding amongst the state of Gujarat, the state of Maharashtra and the Union Government on Damanganga – Pinjal link project and Par-Tapi-Narmada link project.   | 116-117 |
|    | <b>TILLARI RIVER</b>   | 118-125 |
| 38 | Agreement dated 6 <sup>th</sup> April, 1990 executed between the Governments of Goa and Maharashtra for execution and management of Tillari irrigation project.  | 118-125 |
|    | <b>WEST FLOWING RIVERS IN KERALA</b>   | 126-161 |
| 39 | Summary record of decision taken at the inter-state meeting held on 14 <sup>th</sup> October, 1965 between the Government of Madras and Kerala regarding certain inter-state irrigation and hydel projects (i) Pandiar-Punnappuzha and (ii) Chalappuzha-Cholattipuzha schemes.   | 126-127 |
| 40 | The agreement reached between the Chief Ministers of Kerala and Tamil Nadu and the Union Minister of Irrigation and Power during discussions held on 10.5.1969 at Trivandrum regarding the Parambikulam Aliyar Project and other river water questions of Kerala and Tamil Nadu. | 128-129 |
| 41 | Kerala-Tamil Nadu agreement on Parambikulam Aliyar Project-1970.   | 130-147 |



|    |   |         |
|----|---|---------|
| 42 | Indenture made between the Secretary of State for India and the Maharajah of Travancore in respect of the lease of certain territory in the Travancore State in connection with the Periyar irrigation project, 1886. | 148-151 |
| 43 | Agreement dated 29.5.1970 between the Governments of Kerala and Tamil Nadu on Periyar irrigation project.   | 152-154 |
| 44 | Tamil Nadu-Kerala agreement of Periyar hydro electric scheme dated 29 <sup>th</sup> May, 1970.  | 155-159 |
| 45 | Summary record of decision taken at the inte-state meeting held on 8 <sup>th</sup> March, 1974 between the Governments of Kerala and Tamil-Nadu regarding Parambikulam Aliyar Project.                                | 160-161 |

#### **NARMADA BASIN**

|    |  |         |
|----|--|---------|
| 46 | Agreement dated 22 <sup>nd</sup> July, 1972 between the Governments of Gujarat, Madhya Pradesh, Maharashtra and Rajasthan on Narmada development.                  | 162     |
| 47 | Agreement dated 12 <sup>th</sup> July, 1974 between the Governments of Madhya Pradesh, Maharashtra, Gujarat and Rajasthan about the Narmada water dispute.         | 163-165 |
| 48 | Agreement dated 8 <sup>th</sup> March, 1975 between the Governments of Gujarat, Rajasthan, Madhya Pradesh and Maharashtra regarding development of Narmada waters. | 166     |
| 49 | Agreement dated 5 <sup>th</sup> April, 1978 between the Governments of Gujarat and Madhya Pradesh about the medium schemes in Narmada basin.                       | 167     |

#### **GODAVARI BASIN**

|    |  |         |
|----|--|---------|
| 50 | Agreement between the Government of Madras and the Government of Orissa regarding the development of hydro-electric power at the Duduma falls on the Machkund river.   | 168-171 |
| 51 | Summary record of discussions at the inter-state conference on the utilisation of Krishna and Godavari waters held in the committee room of the Planning Commission, New Delhi, on 27 <sup>th</sup> and 28 <sup>th</sup> July, 1951. | 172-178 |
| 52 | Summary of the decision arrived at the conference in New Delhi on 7 <sup>th</sup> September, 1959 in connection with the development of Power on the Sileru River.   | 179     |
| 53 | Agreement dated 18 <sup>th</sup> July, 1961 between the state governments of Andhra-Pradesh and Orissa regarding Upper Sileru, Machkund HE Project and Vamsadhara Project  | 180     |
| 54 | Final agreement between the Governments of Orissa and Andhra Pradesh in relation of to the use of waters of the Sileru river.  | 181-183 |
| 55 | Agreement of certain inter-state projects between Maharashtra and Madhya Pradesh of March, 1964.   | 184-185 |
| 56 | Agreement reached regarding certain inter-state irrigation and hydel projects between Madhya Pradesh and Maharashtra of May, 1969.   | 186-187 |
| 57 | Agreement dated 31 <sup>st</sup> january 1975 between the Governments of Maharashtra and Andhra Pradesh regarding the Swarna project and   | 188-190 |



|    |   |         |
|----|---|---------|
|    | other agreements between Madhya Pradesh and Maharashtra.  |         |
| 58 | Agreement between the governments of Madhya Pradesh and Maharashtra for the proposed Bawanthadi project.  | 191     |
| 59 | Agreement between the Government of Madhya Pradesh and Maharashtra for the proposed Bhopalpatnam project I and II.  | 192     |
| 60 | Agreement between the Governments of Madhya Pradesh and Maharashtra for the proposed Kalisara project.  | 193     |
| 61 | Agreement between the Governments of Madhya Pradesh and Maharashtra for the proposed Nugur-II hydro-electric project on the Indravati river.  | 194     |
| 62 | Agreement between the Governments of Madhya Pradesh and Maharashtra for the proposed Kotri Nibra hydro-electric project.  | 195     |
| 63 | Agreement between the Governments of Madhya Pradesh and Maharashtra for the proposed Bandia hydro-electric project.   | 196     |
| 64 | Proceedings of the meeting between the Chief Ministers of Andhra Pradesh and Orissa at Hyderabad on the 15 <sup>th</sup> December, 1978.  | 197-198 |
| 65 | Proceedings of the meeting held on 27.7.1980 at Bhubaneswar between the officers of the Government of Orissa and Government of Andhra Pradesh to settle outstanding matters.                                      | 199-202 |
| 66 | Godavari river basin agreements- Annexure "A" of GWDT Decision.   | 203     |
| 67 | Proceeding of a meeting between the Chief Ministers of Karnataka and Andhra Pradesh, held at Bangalore on the 17 <sup>th</sup> September, 1975- Annexure-I of Annexure- A of GWDT Decision.                       | 204-205 |
| 68 | Proceedings of the meeting between the Chief Ministers of Maharashtra and Andhra Pradesh held at Hyderabad on the 6 <sup>th</sup> October 1975- Annexure-II of Annexure- A of GWDT Decision.                      | 206-207 |
| 69 | Proceedings of the meeting between the Chief Ministers of Madhya Pradesh and Andhra Pradesh held at New Delhi on the 7 <sup>th</sup> November 1975 Annexure-III of Annexure- A of GWDT Decision.                  | 208-209 |
| 70 | Proceedings of the meeting between the Chief Ministers of Orissa and Madhya Pradesh held at New Delhi on the 9 <sup>th</sup> December, 1975 Annexure-IV of Annexure- A of GWDT Decision.                          | 210-212 |
| 71 | Agreement entered into between the States of Maharashtra, Madhya Pradesh and Andhra Pradesh -Annexure-B of GWDT Decision.   | 213-226 |
| 72 | Summary record of the discussions of the meeting held between the Chief Ministers of Karnataka and Andhra Pradesh at Bangalore on 4 <sup>th</sup> august, 1978 - Annexure-I & II of Annexure- C of GWDT Decision. | 227-229 |
| 73 | Proceedings of the meeting between the Chief Ministers of Andhra Pradesh and Orissa at Hyderabad on the 15 <sup>th</sup> of December, 1978- Annexure- D of GWDT Decision.   | 230-234 |
| 74 | Agreement between Maharashtra and Karnataka regarding Godavari waters distribution - Annexure-I, II &III of Annexure- E of GWDT decision.   | 235-237 |
| 75 | Agreement entered into between the states of Orissa and Madhya Pradesh dated 11 <sup>th</sup> July, 1979- Annexure-F of GWDT Decision.  | 238-241 |
| 76 | Agreement dated the 2 <sup>nd</sup> April, 1980 between the states of Andhra Pradesh, Madhya Pradesh and Orissa- Annexure- G of GWDT Decision.  | 242-243 |

|    |   |         |
|----|---|---------|
| 77 | Statement submitted by Counsel for the Government of India in the Ministry of Energy and Irrigation, (Department of Irrigation) and the Central Water Commission - Annexure-H of GWDT Decision.   | 244-245 |
| 78 | Interstate agreement on Lendi project.  | 246-253 |
| 79 | Constitution of inter-state Board for Pranhita Chevella Sujala Sravanti Project.  | 254-259 |
| 80 | Agreement between Government of Andhra Pradesh and Government of Puducherry relating to water supply to Yanam channel, adavipalem channel for irrigation purpose and industrial purpose and pumping of drinking water from bank canal of Godavari Eastern Delta at Lachipalem(v) and pumping for drinking water supply on upstream side of SAC barrage at Dowlaiswaram. | 260-263 |

|                      |         |
|----------------------|---------|
| <b>KRISHNA BASIN</b> | 264-300 |
|----------------------|---------|

|    |   |         |
|----|---|---------|
| 81 | Agreement arrived at between the representatives of the Madras and Hyderabad Government at the conference held on the 6 <sup>th</sup> and 7 <sup>th</sup> November, 1938 at the Secretariat, Fort St. George Madras, in regard to a scheme for the partial utilisation of the Tungabhadra waters. | 264-265 |
| 82 | Agreement of June, 1944 between Madras and Hyderabad regard to the scheme for the partial utilisation of the Tungabhadra waters.  | 266-268 |
| 83 | Agreement between the representatives of the Governments of Madras and Mysore in regard to the sharing of the waters of the Tungabhadra.  | 269-273 |
| 84 | Supplement to 1944 agreement executed in December, 1945 by the representatives of Governments of Hyderabad, Mysore, Madras and India.   | 274     |
| 85 | Supplemental agreement of 1946 among Madras, Mysore and Hyderabad.  | 275-278 |
| 86 | Summary record of the proceedings of the inter-state conference on the Tungabhadra high level canal held at residency building, Bangalore on 18 <sup>th</sup> June, 1956.   | 279-280 |
| 87 | Conclusions reached at inter-state conference of Chief Ministers and Ministers in charge of Irrigation and Power of Andhra Pradesh and Mysore held at Hyderabad on the 25 <sup>th</sup> February, 1959.   | 281-284 |
| 88 | Agreement among the governments of Andhra Pradesh, Karnataka and Maharashtra for supply of 5 TMC each of Krishna waters to Tamil Nadu (April, 1976).  | 285     |
| 89 | Agreement dated 28 <sup>th</sup> October, 1977 amongst the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu regarding conveying of 15 TMC of Krishna waters for water supply to Madras city.   | 286-289 |
| 90 | Agreement entered into between the Governments of Andhra Pradesh and Tamil Nadu for drawal of water from river Krishna for Madras city drinking water supply.   | 290-293 |
| 91 | Inter-state agreement dated 18 <sup>th</sup> August, 2001 on Dudhganga Project.   | 294-300 |

|    |  |         |
|----|--|---------|
|    | <b>CAUVERY BASIN</b>   | 301-336 |
| 92 | Final agreement between the Mysore and the Madras Governments in regard to the construction of a dam and a reservoir at Krishnarajasagara.   | 301-321 |
| 93 | Supplemental agreement dated 17-6-1929 between the Govts. of Mysore and Madras in regard to the construction of a dam and reservoir at Krishnarajasagara.  | 322     |
| 94 | Madras-Mysore agreement, 1924 - Supplemental agreement, dated 22 <sup>nd</sup> June, 1929.   | 323-324 |
| 95 | Statement of agreements resulting from a discussion at Government house, Mysore on the 18 <sup>th</sup> June 1929, between Messers W.J.J. howley and S.G. Forbes, Assessors nominated by Madras and Mysore governments.    | 325     |
| 96 | Agreement dated 31 <sup>st</sup> may 1972 between the Governments of Mysore, Tamil Nadu and Kerala regarding Cauvery waters.   | 326-327 |
| 97 | Kerala-Tamilnadu agreement on Siruvani drinking water supply project.  | 328-334 |
| 98 | Understanding reached at the inter-state meeting held on 25 <sup>th</sup> and 26 <sup>th</sup> August 1976 amongst the Governments of Karnataka, Kerala and Tamil Nadu regarding the use and development of Cauvery waters | 335-336 |

**AGREEMENT BETWEEN RAJASTHAN AND GUJARAT FOR THE EXPOLITATION OF  
MAHI RIVER  
(Dated 10<sup>th</sup> January 1966)**

**RECEIVED UNDER U.O. NO. DW II-13(1)/61 DT. 12.4.66 (DULY RATIFIED BY  
BOTH STATES)**

**KADANA DAM**

1. Kadana Dam should be built to FRL 419.00. The entire cost and benefits of the Project will be borne by Gujarat. At a later date when Mahi areas are taken over by Narmada and a part of the Kadana waters are released for use in Rajasthan, Rajasthan should pay to Gujarat an appropriate cost of the dam for such use. The exact proportions will be fixed at the time when such release become available.

**BANSWARA DAM**

2. Banswara<sup>1</sup> Dam across Mahi, located in Rajasthan, will be built to FRL 921.00. Out of the total cost of the Dam, a portion will be allocated for power which Rajasthan will develop from the waters of this reservoir. This will be at the rate of Rs.1,250 per KW firm power. If the total cost of the dam increases beyond Rs.14 crores, the allocated cost per KW taken above will also be increased proportionately.

3. The cost of the dam for FRL 915.00 should be shared between Gujarat and Rajasthan in the ratio of 40:9 as the utilization of the waters for irrigation inclusive of evaporation losses are 40 TMC in Gujarat and 9 TMC in Rajasthan.

4. Building the dam upto FRL 921.00 will give an additional storage of 7 TMC which will be useful in lean years for ensuring firming of power generation. In view of this, Rajasthan has agreed to bear the difference in cost for building Dam between FRL 921.00 and 915.00.

5. At a later date when Narmada Development takes place and when Mahi areas are fed by the waters of Narmada and the Mahi waters at Banswara are released for use in Rajasthan, Rajasthan should reimburse the cost of the Banswara Project paid by Gujarat.

Sd/-  
(NATHU RAM MIRDHA)  
Minister for Irrigation  
Government of Rajasthan  
Jaipur

Sd/-  
(VIJAYAKUMAR TRIVEDI)  
Minister for Public Works  
Ports & Civil Supplies,  
Gujarat State

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<sup>1</sup> Under the aegis of erstwhile CW & PC New Delhi, an understanding was made between the states of Madhya Pradesh & Rajasthan regarding sharing of Mahi water in the year 1961. Accordingly it was agreed to reserve 13 TMC (3 TMC regeneration) of Mahi water for upstream utilisation (U/s of Mahi Dam, Banswara) in M.P. State territory. The M.P. Government accorded its concurrence for construction of Mahi Dam at Banswara in the year 1962 subject to reservation of 13 TMC water for M.P. state.



**AGREEMENT BETWEEN RAJASTHAN AND GUJARAT, SUPPLEMENTAL TO THE  
AGREEMENT ARRIVED AT IN 1966 BETWEEN RAJASTHAN AND GUJARAT FOR THE  
EXPLOITATION OF THE MAHI RIVER**

That the States of Rajasthan and Gujarat (hereinafter referred to as “RAJASTHAN” and “GUJARAT”) agreed in 1966 to exploit the waters of the Mahi river in the manner provided in the 1966 Agreement.

2. That pursuant to the 1966 Agreement, Gujarat started constructing the Kadana Dam in Gujarat and the work of construction of the dam is in progress.

3. That the Kadana Dam is planned to be completed in all respects by June, 1977 and as a result thereof there will be consequential submergence of lands and properties in Rajasthan as well as in Gujarat.

4. That Rajasthan is required to take steps to make available certain public lands and appurtenants and for acquiring private lands and properties in Rajasthan, which are likely to come under submergence at FRL 419 and for rehabilitation (including provision of civic amenities) of persons affected in Rajasthan as a result thereof.

5. That the protective works (including approach road) to the Durgah and the Mataji’s temple at Galiakot are also required to be constructed.

6. That Gujarat is required to compensate Rajasthan appropriately for the cost incurred and to be incurred by it for the acquisition of the lands and properties in Rajasthan as well as for public properties and for rehabilitation of the persons affected in Rajasthan.

7. That this Supplemental Agreement is arrived at between Rajasthan and Gujarat so that the programme of construction of the dam and the programme of acquisition and / or making available lands and appurtenants in Rajasthan for submergence in Kadana reservoir at FRL 419 and of rehabilitation of persons affected thereby, as finalized by the High Power Committee (thereinafter referred to as the ‘Committee’) appointed by the Government of India under their letter No.17(36)/74-DWI of 23.12.1974, synchronize with each other.

8. That this Supplemental Agreement is arrived at between Rajasthan and Gujarat on an ad-hoc basis to effectuate the aforesaid objects and in consideration of the Special circumstances of the project and the various provisions of the 1966 Agreement, the terms hereof are not to be treated as precedent for any purpose whatsoever.

9. It is accordingly agreed by and between Rajasthan and Gujarat as under:-

- (i) That the Rajasthan shall acquire all private lands and properties which are likely to be affected or submerged as a result of Kadana Dam at FRL 419 (excluding the backwater effect) and rehabilitate the persons affected thereby in Rajasthan in a satisfactory manner including provision of civic amenities. The lands and appurtenants so acquired shall be made available in time to Gujarat Kadana Dam authorities. Similarly, Rajasthan shall make available all the Government lands and appurtenants likely to be affected or submerged in the reservoir as aforesaid and make them available to the Kadana Dam authorities.

- (ii) That Rajasthan shall make available land and appurtenants according to the programme of acquisition and / or making available lands and appurtenants for submergence and of rehabilitation of oustees as finalized by the Committee.
- (iii) That subject to sub-clauses (v) and (vi) hereof Gujarat will pay to Rajasthan and Rajasthan shall accept from Gujarat an amount of Rs.810 lakhs (Rupees eight hundred and ten lakhs only) as compensation in full and in final settlement of all claims of Rajasthan and its inhabitants in so far as they related to the effect on, or submersion of all the lands, and properties likely to be affected or submerged at FRL 419 (excluding effect of backwater) as a result of the construction of the Kadana Dam in Gujarat pursuant to the 1966 Agreement. The compensation covers lands and properties likely to be affected or submerged upto FRL 419 and the expenditure incurred or to be incurred by Rajasthan on all items inclusive of necessary establishment for the purpose of acquisition, rehabilitation and provision of civic amenities in relation thereto.
- (iv) That the amount of compensation mentioned in sub-clause (iii) above shall be paid by Gujarat to Rajasthan (after deducting all amounts so far paid by Gujarat to Rajasthan on this account) in instalments that may be fixed by the Committee in such a manner that the last instalment is paid six months before the date of completion of dam.
- (v) That the amount of compensation mentioned in sub-clause (iii) above covers all the houses or structures lying within FRL 419 limits. This amount does not include the cost of protective works (including compensation for land to be acquired therefor) for the Durgah and Mataji's temple at Galiakot and the cost of structure in Rajasthan which are affected only by reason of the backwater of the Kadana Reservoir above FRL 419 and of rehabilitation of persons who are affected only due to the said reason and expenditure on establishment maintained or to be maintained for these purposes and purposes ancillary thereto.
- (vi) The Rajasthan agreed at the instance of Gujarat to get the protective works for Durgah and Mataji's temple at Galiakot (including approach road), executed through Gujarat State Construction Corporation Limited Gandhinagar, a Government of Gujarat Undertaking as per design and specifications approved by the Central Water Commission. The cost of the protective works (inclusive of all items normally included by the Central Water Commission in the estimates of works of the nature) shall be borne by Gujarat. A separate agreement between Rajasthan on one part and the Corporation on the other with Gujarat standing as a guarantor for the performance of the contract by the Corporation, shall be executed incorporating the terms and conditions normally applicable to such contracts in Rajasthan. Gujarat shall also be responsible for future repairs and maintenance of these protective works.
- (vii) That the question of compensation payable by Gujarat to Rajasthan for acquisition of structure in Rajasthan which are affected only by reason of the backwaters of the Kadana reservoir above FRL 419 will be settled hereafter by and between Rajasthan and Gujarat when full details of the submergence likely to be caused by backwaters are available.

Dated this 29<sup>th</sup> day of May 1975.

Sd/-  
(JAGJIVAN RAM)  
Union Minister for  
Agriculture & Irrigation

Sd/-  
(HARIDEO JOSHI)  
Chief Minister of Rajasthan

Sd/-  
(K.N. SINGH)  
Deputy Minister (Irrigation)

Sd/-  
(H.C. SARIN)  
Adviser to Governor, Gujarat

**AGREEMENT BETWEEN RAJASTHAN AND GUJARAT, SUPPLEMENTAL TO THE  
AGREEMENTS ARRIVED AT IN 1966 AND 1975 BETWEEN RAJASTHAN AND GUJARAT  
FOR THE EXPLOITATION OF THE MAHI RIVER**

(Dated 2<sup>nd</sup> September, 1976)

1. That the States of Rajasthan and Gujarat (hereinafter referred to as “RAJASTHAN” AND “GUJARAT”) agreed in 1966 to exploit the waters of the Mahi river in the manner provided in the Agreement arrived at between them in 1966 (hereinafter referred to as “the 1966 Agreement”).
2. That pursuant to the 1966 Agreement, Gujarat started constructing the Kadana Dam in Gujarat and the work of construction of the Dam is in progress.
3. That the Kadana Dam is planned to be completed in all respects by June, 1977, and as a result thereof there will be consequential submergence of lands and properties in Rajasthan as well as in Gujarat.
4. That Gujarat entered into an agreement with Rajasthan in May 1975 (hereinafter referred to as 1975 Agreement) for the acquisition of lands and properties, compensation to an rehabilitation of the affected persons in Rajasthan upto FRL 419 due to construction of Kadana Dam excluding areas affected by backwaters.
5. That with reference to sub-clause (vii) of clause 9 of 1975 agreement, Gujarat is required to compensate Rajasthan appropriately in respect of lands (non-agricultural) and other properties of Galiakot town including public properties outside the ring bund above FRL 419 and for rehabilitation of the persons so affected.
6. That this further Supplemental Agreement is arrived at between Rajasthan and Gujarat on an ad-hoc basis to effectuate the aforesaid objects and in consideration of the special circumstances of the project and the various provisions of the 1966 Agreements, the terms hereof are not to be treated as a precedent for any purpose whatsoever.
7. It is accordingly agreed by and between Rajasthan and Gujarat as under:-
  - (i) That Rajasthan shall acquire all private lands (non-agricultural) and properties above FRL 419 at Galiakot outside ring bund and rehabilitate the persons affected thereby in Rajasthan in a satisfactory manner including provision of civic amenities.
  - (ii) That subject to sub-clause (iii) hereof, Gujarat has agreed to pay to Rajasthan and Rajasthan has agreed to accept from Gujarat an amount of Rs.250 lakhs (Rupees two hundred and fifty lakhs only) as compensation in full and in final settlement of all claims of Rajasthan and its inhabitants insofar as they relate to all the lands and properties likely to be affected in Galiakot above FRL 419 (including effect of backwaters). The compensation covers all items of expenditure inclusive of necessary establishment for the purpose of acquisition, rehabilitation and provision of civic amenities in relation thereto. Gujarat shall not be liable to pay for any future claims arising out of submergence or backwater effect of Kadana Dam in Galiakot Town.
  - (iii) That the amount of compensation mentioned in sub-clause (ii) above shall be paid by Gujarat to Rajasthan (after deducting all amounts so far paid by Gujarat to Rajasthan on



this account) in instalments that may be mutually fixed in such a manner, that the last instalment is paid by the end of December, 1976.

8. That the question of compensation payable by Gujarat to Rajasthan for acquisition of other than Galiakot structures in Rajasthan which are affected only by reason of the backwaters of the Kadana reservoir above FRL 419 and for rehabilitation of the persons affected only by reason of the backwaters of the Kadana reservoir above FRL 419 will be settled hereafter by and between Rajasthan and Gujarat as and when full details thereof are available.

Dated New Delhi, this 2<sup>nd</sup> Day of September, 1976.

Sd/-  
(JAGJIVAN RAM)  
Union Minister of Agricultural and Irrigation

Sd/-  
(HARIDEO JOSHI)  
Chief Minister, Rajasthan

Sd/-  
(K.N.SINGH )  
Union Deputy Minister of Agriculture and  
Irrigation

Sd/-  
(A.N. BANERJI)  
Adviser to Governor of Gujarat

**AGREEMENT BETWEEN RAJASTHAN AND GUJARAT SUPPLEMENTAL TO THE  
AGREEMENTS ARRIVED AT IN 1966, 1975 AND 1976 BETWEEN RAJASTHAN AND  
GUJARAT FOR THE EXPLOITATION OF THE MAHI RIVER**

(Dated 5<sup>th</sup> April, 1978)

1. That the States of Rajasthan and Gujarat (hereinafter referred to as “RAJASTHAN” and “GUJARAT”) agreed in 1966 to exploit the waters of the Mahi river in the manner provided in the Agreement arrived at between them in 1966 (hereinafter referred to as the 1966 Agreement).
2. That pursuant to the 1966 Agreement, Gujarat started constructing the Kadana Dam in Gujarat and the work of construction of the Dam is nearing completion.
3. That the Kadana Dam is planned to be completed by June 1978 and as a result thereof there will be consequential submergence of lands and properties in Rajasthan as well as in Gujarat.
4. That Gujarat entered into an agreement with Rajasthan in May 1975 (hereinafter referred to as the 1975 Agreement) for the acquisition of lands and properties, compensation to and rehabilitation of the affected persons in Rajasthan upto FRL 419 due to construction of Kadana Dam excluding areas affected by backwaters.
5. That Gujarat entered into an agreement with Rajasthan in September, 1976 (hereinafter referred to as the 1976 Agreement) for compensation of land (non-agricultural) and other properties of Galiakot town including public properties outside the ring bund above FRL 419 and for rehabilitation of the persons so affected.
6. That with reference to sub-clause (vii) of clause 9 of 1975 agreement, Gujarat is required to compensate Rajasthan appropriately in respect of lands (non-agricultural) and other properties located above FRL 419 and for rehabilitation of the persons so affected by backwaters of Kadana Dam (excluding Galiakot town with rehabilitation of oustees thereof).
7. That this further Supplemental Agreement is arrived at between Rajasthan and Gujarat on an ad-hoc basis to effectuate the aforesaid objects and in consideration of the special circumstances of the project and the various provisions of the 1966, 1975 and 1976 Agreements, the terms hereof are not to be treated as a precedent for any purpose whatsoever.
8. It is accordingly agreed by and between Rajasthan and Gujarat as under:
  - (i) That Rajasthan shall acquire all private land (non-agricultural) and properties, above FRL 419 likely to be affected by backwaters of Kadana Dam and rehabilitate the persons affected thereby in Rajasthan in a satisfactory manner including provisions of civic amenities.
  - (ii) That subject to sub-clause (iii) hereof, Gujarat has agreed to pay to Rajasthan and Rajasthan has agreed to accept from Gujarat an amount of Rs.280 lakhs (Rs. Two Hundred and Eighty lakhs only) as compensation in full and in final settlement of all claims of Rajasthan and its inhabitants insofar as they relate to all the lands and properties likely to be affected above FRL 419 (including all effects of back-waters). The compensation covers all items of expenditure inclusive of necessary establishment for the purposes of acquisition, rehabilitation and provision of civic amenities in relation thereto, Gujarat shall not be liable to pay for any future claims arising out of submergence or backwater effects of Kadana Dam to lands and properties situated above FRL 419.
  - (iii) That the amount of compensation mentioned in sub-clause (ii) above shall be paid by Gujarat to Rajasthan (after deducting all amounts so far paid by Gujarat to Rajasthan on this account), in

instalments that may be mutually fixed in such a manner, that the last instalment is paid by the end of June, 1978.

9. That with the settlement of this question of compensation, (including cost of civic amenities) for areas affected by backwaters above FRL 419, Rajasthan shall have no claim on Gujarat in future for any lands and properties affected by submergence due to Kadana Dam for areas situated either below FRL 419 or above FRL 419 upto backwater effect. The present Agreement shall close the overall issue in respect of payment of compensation by Gujarat in any form so far as submergence in Rajasthan due to Kadana Dam is concerned.

Dated New Delhi this 5<sup>th</sup> April, 1975.

Sd/-  
(SURJEET SINGH BARNALA)  
Union Minister of Agriculture and Irrigation

Sd/-  
(BHAIRON SINGH SHEKHAWAT)  
Chief Minister, Rajasthan

Sd/-  
(KESHUBHAI S. PATEL)  
Minister, Agriculture & Irrigation, Gujarat

**FINAL COPY OF THE MINUTES**  
**( These were later accepted by Eastern Zonal Council)**

**MINUTES OF THE SECOND MEETING OF THE SUBARNAREKHA AND BURABALANGA PROJECTS COMMITTEE HELD ON FRIDAY THE 19<sup>th</sup> JUNE, 1964 AT 3.30 p.m. IN THE LIBRARY HALL OF THE CENTRAL WATER AND POWER COMMISSION, NEW DELHI**

**PRESENT**

|                                   |  |                  |
|-----------------------------------|--|------------------|
| CENTRAL WATER & POWER COMMISSION  | 1. Shri D.B. Anand,<br>Member;(WR)                                       | - (in the Chair) |
|                                   | 2. Shri G.K. Vij,<br>Chief Engineer (FI&T)                               |                  |
|                                   | 3. Shri S.S. Lamba,<br>Director (WIN)                                    |                  |
|                                   | 4. Shri R.C. Shenoy,<br>Director (H&S)                                   |                  |
| GOVERNMENT OF BIHAR <sup>2</sup>  | 5. Shri N.P. Sinha,<br>Secretary to the Govt.,<br>Irrigation Department. |                  |
|                                   | 6. Shri A.P. Prasad,<br>Chief Engineer (South)<br>Irrigation Department. |                  |
| GOVERNMENT OF ORISSA              | 7. Shri M.C. Pani,<br>Additional Chief Engineer                          |                  |
| GOVT. OF WEST BENGAL              | 8. Shri R.B. Chakrabarty,<br>Chief Engineer,<br>Floods & Flood control   |                  |
| EASTERN ZONAL COUNCIL SECRETARIAT | 9. Shri R.S. Bahl,<br>Joint Secretary                                    |                  |

Opening the discussion, Shri D.B. Anand explained that the availability at the Kokpara site has been assessed by the C.W. & P.C. as 42.00 lakh acre ft. on 75% dependability and that the shares for the respective States may be allocated therefrom. He also suggested that in the meantime gauge and discharge sites for exact determination of the flows from the basin be established. The Chief Engineers of the States accepted the proposals.

2. The Committee discussed the requirements of each State and it was unanimously agreed to share the availability at Kokpara site as below:

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<sup>2</sup> Bihar in this agreement covers territories of present day Bihar and Jharkhand. At present however Jharkhand is basin State in Subarnrekha.



|             |                     |
|-------------|---------------------|
| Bihar       | 32.00 lakh acre ft. |
| Orissa      | 12.00 lakh acre ft. |
| West Bengal | 1.00 lakh acre ft.  |
| Total       | 45.00 lakh acre ft. |

The Chief Engineer, Orissa confirmed that total requirements of Orissa be taken as 12.00 lakh acre ft. for this distribution.

The Chief Engineer, West Bengal stated that the demand of West Bengal has been increased from 0.64 lakh acre ft. to 1.00 lakh acre ft. He felt that this flow would be available from the run of the river. The matter could, however, be discussed between the Orissa and West Bengal Governments at the appropriate time if and as necessary.

In this total distribution of 45.00 lakh acre ft. 3.00 lakh acre ft. has been assumed to be the regeneration available at Kokpara site from the supplies diverted by Bihar.

3. It was agreed that the State-wise allocation as made in para 2 above should be reviewed and revised, if so justified as a result of the hydrological data proposed to be collected.

4. The Chief Engineers of Bihar and Orissa agreed to establish the following sites for discharge observations, respectively and to carry out observations in accordance with the standardised methods followed by the C.W. & P.C. (C.E., F.I & T.)

|    | River                         | Site  | State  |
|----|-------------------------------|---|--------|
| 1. | River Subarnarekha main river | Main river Damuhani u/s                     | Bihar  |
| 2. | Kharkai                       | Near its confluence with Subarnarekha river | Bihar  |
| 3. | Kharkai river                 | Mahudlodha                                  | Bihar  |
| 4. | Subarnarekha                  | Kokapara                                    | Bihar  |
| 5. | Subarnarekha                  | Chorchila                                   | Oissa  |
| 6. | Subarnarekha                  | Ashui Dharampur                             | Orissa |
| 7. | Karkori river                 | At its confluence with Subarnarekha         | Bihar  |

Shri Anand impressed upon the Chief Engineers that these observations must start quickly and not later than April, 1965. The Chief Engineer Bihar stated that observations were already being carried out: at some of these stations.

It was not considered necessary for the C.W. & P.C. to undertake any direct observations. They would, however, render all the necessary help in this behalf.

5. In addition to these gauge and discharge sites, rainfall stations may have to be established. The Chief Engineers of Bihar and Orissa agreed to supply the list of sites already established to the C.W. & P.C.. (Dir. H&S) will advise further in this regard.

**AGREEMENT REGARDING UTILISATION OF THE WATERS OF THE SUBARNAREKHA AND THE KHARKAI REACHED BY THE CHIEF MINISTERS OF BIHAR AND ORISSA AT PATNA ON THE 17<sup>th</sup> JANUARY, 1976.**

PRESENT:

Dr. Jagannath Mishra  
Chief Minister, Bihar

Shrimati Nandini Satpathy  
Chief Minister, Orissa

The Chief Ministers of Bihar<sup>3</sup> and Orissa took note of the discussions at the official level held at Calcutta on the 12<sup>th</sup> December, 1975 and at Patna on the 5<sup>th</sup> & 6<sup>th</sup> January, 1976. They agreed that the waters of the Subarnarekha and the Kharkai may be utilised by either State in the manner and subject to the conditions set forth below namely:

1. The Subarnarekha Multipurpose Project as planned by Bihar may be implemented without any curtailment in its scope consistent with the terms of this agreement. Each State may also implement other projects planned by it subject to the condition that its total utilisation will not exceed the allocated share of 3.20 MAF for Bihar and 1.20 MAF for Orissa on the basis of 75 percent dependable yield of the Subarnarekha basin at Kokpara.
2. In regard to flood moderation portion of the Chandil dam it was agreed that flood storage of 0.40 MAF should be provided. Both Bihar and Orissa will urge the Government of India to meet the cost of flood moderation portion of the dam fully. The final decision in this regard will be taken in a meeting of the Chief Ministers of Bihar and Orissa.
3. The storage capacity of the dam as proposed by Bihar on the river Kharkai (hereinafter referred to as the Kharkai dam) may be 0.68 MAF out of which Bihar and Orissa will be entitled to 0.50 MAF and 0.18 MAF respectively.
4. The cost of the Kharkai dam and appurtenant works will be shared between Bihar and Orissa in the proportion of 5.00 : 1.80.
5. Orissa will extend the required assistance and cooperation in acquiring the land in Orissa that will be submerged by the Kharkai dam. The cost of such acquisition and of consequential rehabilitation will be included in the cost of the Kharkai dam. The scale and standard of rehabilitation will be fixed in due course by mutual agreement.
6. Upstream the Kharkai dam, Bihar and Orissa will limit their utilization to 0.05 MAF and 0.30 MAF respectively.
7. The management of the Kharkai dam will be as follows:
  - (a) For sharing the water in the Dam, the year will begin from the first day of July.
  - (b) The need for khariff irrigation in each State will be given first priority and water released against its share on such needs indicated by each State.

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<sup>3</sup> Bihar in this agreement covers territories of present day Bihar and Jharkhand. At present, however, Jharkhand is basin State in Subarnarekha.

- (c) The balance water available out of the allocations of each State after the Khariff season will be drawn by the respective States for Rabi and Summer irrigation.
- (d) Each State will be free to fix the priority for full utilisation of its share for industrial and other uses without affecting the interests of the other State.
- (e) the shortage or surplus over the estimated annual yield at 75% dependability, if any, during the water year will be shared by the two States in proportion to their respective interests in the storage.
- (f) There will be a committee for joint operation of the reservoir. The Committee will be constituted in the manner provided in clause 14.

8. To achieve flexibility in the operation of the Kharkai and Chandil reservoirs within the Subarnarekha Multipurpose Project in the best interest of both the States, this Committee may make diversion of supplies from one or the other reservoir subject to the condition that the share of each State during the water year will not be affected adversely.

Bihar proposes to construct a barrage at Galudih with one canal on each side. Orissa will be entitled to draw through this barrage its share of water in the Kharkai dam. In addition, Orissa can also draw from this barrage the run of the river flow as available for utilisation in its territory out of which upto 0.1 MAF will be during the non-monsoon period. The drawal from this barrage by Bihar in the non-monsoon period will be upto 0.06 MAF.

Provided that if the flow in any non-monsoon period is less than 0.16 MAF, the shortage shall be shared between Bihar and Orissa in the proportion of 3:5.

9. Orissa will draw its share of water from the Galudih barrage through the right bank main canal.

10. The cost of the Galudih barrage and the appurtenant works shall be shared between Bihar and Orissa in proportion to the annual designed withdrawals, that is to say on cusec-day basis.

11. The cost of the right bank main canal shall be shared between Bihar and Orissa on cusec-mile basis.

12. The right bank main canal will be a lined one and will be so designed as to involve minimum land acquisition in Bihar.

13. Execution of the Kharkai Dam and the Galudih Barrage along with the right bank main canal will be taken up together at a time. The arrangement for their execution will be as may be decided by the Chief Ministers of Bihar and Orissa.

14. There will be joint regulation of the Kharkai Dam and Galudih Barrage along with the right bank main canal by a Committee consisting of a Chief Engineer nominated by Orissa and a Member of the Central Water Commission who will be its Chairman. The Committee will formulate its rules of procedure.

15. Orissa can utilise the surplus water from the free catchment in Orissa below Kokpara.

16. Orissa agrees in principle to the development of the Subarnarekha for inland water transport as it will provide direct sea-face to Bihar.

Sd/- - 17. 1. 76

( NANDINI SATPATY )  
Chief Minister, Orissa.

Sd/- - 17. 1. 76

( DR. JAGNNATH MISHRA )  
Chief Minister, Bihar

**FURTHER AGREEMENT REGARDING UTILISATION OF THE WATERS OF THE SUBARNAREKHA AND KHARKAI REACHED BY THE CHIEF MINISTERS OF ORISSA AND BIHAR AT BHUBANESHWAR ON THE 25<sup>th</sup> OCTOBER, 1976**

Present

Dr. Jagannath Mishra  
Chief Minister,  
Bihar

Smt. Nandini Satpathy  
Chief Minister,  
Orissa.

An agreement regarding utilisation of the waters of the Subarnarekha and the Kharki was reached between the two Chief Ministers and the agreement was finalised at Patna on the 17<sup>th</sup> January, 1976. With a view to taking positive steps towards implementation of the provisions of this agreement, the Chief Ministers of both the States discussed certain aspects of the question at Bhubaneswar on the 25<sup>th</sup> October, 1976. The Government of Bihar<sup>4</sup> would like to execute the Chandil Dam and its left bank canal on a priority basis and would need the concurrence of the Government of Orissa. Orissa is interested in expeditious execution of the Galudih barrage with a view to utilising its share of Subarnarekha waters for irrigation. The Chief Ministers of both the States recognised that both these objectives were complementary to each other and it was necessary to move towards realisation of these objectives. It was accordingly agreed as follows:

(1) Orissa agreed to the execution of the Chandil Dam and its left bank canal as conceived in the Subarnarekha Multipurpose project. It was stipulated in the agreement dated the 17<sup>th</sup> January, 1976 that both Bihar and Orissa will urge the Government of India to meet the cost of flood moderation portion of the dam fully. Orissa, in pursuance of this agreement, has moved Government of India accordingly. It was agreed that Bihar will do likewise and both the Chief Ministers will also jointly move the Union Minister for Irrigation for a favourable decision.

(2) Bihar agreed to the construction of the Galudih barrage project alongwith the right bank main canal upto Orissa border (hereinafter referred to as the Galudih Joint project) simultaneously with the construction of the Chandil dam. The Government of Bihar have already accorded permission to the officials of Orissa Government for survey and investigation work within their territory. It was agreed that contour maps prepared by the Survey of India and other maps and data would be supplied by the Govt. of Bihar as expeditiously as possible. The other facilities referred to in letter No. 3/KA-1-102/76/3215 dated the 25<sup>th</sup> September, 1976 from the Irrigation Commissioner-cum-principal Secretary to Govt. of Bihar, would be provided by Bihar so that Orissa is enabled to complete necessary survey and investigation. The Govt. of Orissa on their part permit the officers of Bihar Govt. to undertake survey and investigation works within their territory insofar as the likely submersion area of the proposed Kharkai dam is concerned.

(3) For facility of study and formulation of the Galudih joint project by Orissa, the Chief Minister, Bihar presented the detailed project report of Bihar's Subarnarekha Multipurpose Project in nine volumes to the Chief Minister, Orissa. Orissa will complete survey and investigation for Galudih joint project by the end of June, 1977 to correspond to Orissa's irrigation requirement as envisaged in the Agreement dated the 17<sup>th</sup> January, 1976. A joint report for this project on the basis of the data

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<sup>4</sup> Bihar in this agreement covers territories of present day Bihar and Jharkhand. At present however Jharkhand is basin State in Subarnarekha.

collected by both the States in the course of the survey and investigation undertaken by them shall be prepared by the Chief Engineer, Irrigation, Orissa with the concurrence of the Chief Engineer, Irrigation, Bihar. Both the Governments shall then move the Central Water Commission and the Govt. of India for early clearance of the Galudih joint project within the ambit of the Subernerekha Multipurpose project. In the meantime, Orissa will furnish to Bihar a tentative monthly schedule of drawals from the Galudih barrage (inclusive of drawals from the Kharkai dam) preferably by the end of March, 1977 to enable Bihar to obtain clearance from the Central Water Commission to the Multipurpose project. This will be without prejudice to the Joint Report that will be prepared in pursuance of the provisions of this clause.

(4) It was agreed that if the non-monsoon flow available at Galudih barrage is more than 0.16 M.A.F. the excess beyond 0.16 M.A.F. shall be shared between Bihar and Orissa in the proportion of 3:5.

Provided that until the Kharkai dam is constructed and put into operation, all excesses over 0.16 M.A.F. in the non-monsoon flow at Galudih barrage shall be utilised by Orissa. Clause 8 of the agreement dated the 17<sup>th</sup> January, 1976 will stand supplemented to this extent.

(5) The agreement dated the 17<sup>th</sup> January, 1976 stipulated a storage of 0.18 M.A.F. in the Kharkai dam of Bihar on Orissa's account. It further stipulated that Bihar and Orissa will draw water from the Kharkai reservoir according to their needs as adjudged by them subject to priority being given for Khariff irrigation. Since the execution of the Kharkai dam will be somewhat staggered, Orissa would not be able to draw on its quota according to its need. But Orissa will get some more non-monsoon flow in pursuance of clause 4. If this does not come to 0.23 M.A.F. at Galudih barrage the balance shall be made available to Orissa at Galudih Barrage in the non-monsoon period by a judicious operation of the Chandil reservoir until the Kharkai Dam is executed and put into operation. The operation of the Chandil reservoir to provide this support shall be subject to such approval as the Joint Control Board may give. The figure of 0.23 M.A.F. has been arrived at as follows:

|          |  |
|----------|--|
| 0.1 MAF  | from the non-monsoon flow as stipulated in the agreement dated the 17 <sup>th</sup> January, 1976.   |
| 0.13 MAF | from the non-monsoon flow and/or Chandil reservoir till construction of Kharkai dam after deducting 0.05 MAF notionally from 0.18 MAF towards khariff use. |

(6) There shall be a Joint Control Board for execution of the Galudih Joint Project and for regulating drawal from the Chandil Reservoir as stipulated above. The composition of the Joint Control Board shall as follows:

- (i) Chief Ministers of both the States (alternate Chairman for one year) .
- (ii) Irrigation Ministers of both the States.
- (iii) Chief Engineers of Irrigation of both the States.
- (iv) Irrigation Secretaries of both the States.
- (v) Finance Secretaries of both the states.
- (vi) Collector of Mayurbhanj and Deputy Commissioner of Singhbhum.
- (vii) Other officers as may be nominated not exceeding 2 by each State.
- (viii) The project Engineer of the Joint Project (by whatever designation he may be called)

non- Member-Secretary

(7) The Chief Minister, Orissa invited the Chief Minister, Bihar to be the first Chairman. The

Chief Minister, Bihar accepted the invitation.,

(8) The Joint Control Board shall be competent to appoint one or more functional Committees as may be necessary and to delegate administrative and financial powers in favour of any of these Committees or to any of the officers of the Joint project as it considers necessary. The Joint Control Board shall set up immediately a Technical Committee comprising the Chief Engineers of Irrigation of both the States and two other officers one each to be nominated by each State. The project Engineer shall be the non-Member Secretary of the Technical Committee.

(9) There shall be a project Authority for execution of the Galudih Joint Project. As regards the, staffing of the Project authority, it was agreed that details will be worked out by the Technical Committee referred to in clause 8. The recommendations of the technical Committee shall be put to the Control Board which shall decide the question. Both the Technical Committee and the Control Board shall, among other thing take into account the financial involvement of the two States in the joint project in deciding this question.

(10) It was clarified by Bihar that Bihar Government has marginal interest in the water resources below Kokpara. It was also clarified that Bihar has not agreed to exclusive use of water from Bihar's free catchment of the Subarnarekha below Kokpara by West Bengal. In fact, water resources of the Subarnarekha below Kokpara have not yet been assessed and apportioned among the three riparian States keeping in view their needs. It was agreed that a committee under the chairmanship of the Chairman of C.W.C. and consisting of the Chief Engineers of the three States may be constituted to make a final assessment of the water resources below Kokpara at 75% dependability and recommend allocations between the three States taking into consideration their needs for irrigation, salinity control and other uses.

(11) Bihar and Orissa are major beneficiaries from the water of the Subarnarekha upto Kokpara. It was, therefore, agreed that the Chief Ministers of Bihar and Orissa would jointly request the Union Minister for Agriculture and Irrigation to clear the projects concerning Bihar and Orissa upstream of Kokpara without awaiting finalisation by the allocation below Kokpara (which should be preceded by the assessment referred to in clause 10 above) and/or the finalisation of the overall agreement among the riparian States.

(12) It was agreed that the execution of the Kharkai barrage by Bihar shall be according to the Schedule to be mutually agreed upon by both the States. It was further agreed that the concept of Joint management and control as developed in this Agreement shall be extended to the Kharkai Dam when this project is taken up.

Sd/- 25.10.76  
(JAGANNATH MISHRA)  
Chief Minister, Bihar

Sd/-25.10.76  
(NANDINI SATPATHY)  
Chief Minister, Orissa

**AGREEMENT ON THE UTILISATION OF THE WATER RESOURCES OF THE SUBARNAREKHA KHARKAI BASIN WHERE WESTBENGAL, BIHAR AND ORISSA ARE CO-BASIN STATES, REACHED BY THE CHIEF MINISTERS OF WEST BENGAL AND BIHAR AT PATNA ON 19<sup>th</sup> JULY, 1978**

The State Governments of West Bengal and Bihar<sup>5</sup> being equally desirous of attaining the optimum utilisation of the water resources of the Subarnarekha Kharkai Basin and recognising the need thereof for fixing and delimiting the rights and obligations of each State in relation to the other concerning the use of these waters, approve the agreement set out hereinunder:-

- (i) Bihar may implement the Subarnarekha Multipurpose Project and other projects within their allocation of 3.2 MAF out of 4.5 MAF which is 75 per cent dependable annual yield assessed at Kokpara. Over and above the conservation storage, the Chandil Dam will have a flood storage of 0.4 MAF for flood moderation benefits in West Bengal and Orissa, subject to such adjustments in the flood cushion stipulated in para(ii) below. Both Bihar and West Bengal will urge the Government of India to meet the cost of flood moderation portion of the dam fully; otherwise West Bengal will share the cost of Chandil Dam as per recommendations made by the Committee on Subarnarekha floods.
- (ii) The allocation for West Bengal assessed at Kokpara will be one lakh acre feet, of which 50,000 acre feet will be utilised upstream of Chandil Dam. For the remaining 50,000 acre feet, 10,000 acre feet for Rabi and Kharif irrigation will be made available by Bihar free of charge to West Bengal through the left bank high level canal system of the Chandil Dam; the balance 40,000 acre feet shall be utilised by West Bengal below Kokpara. To facilitate this utilisation, a storage space of 25,000 acre feet shall be provided for in the Chandil Dam, a limit which will not be exceeded in any water year. This provision of the storage space of 25,000 acrefeet, by a reduction in the agreed flood cushion and for which the proportionate cost of the dam and appurtenant works shall be borne by West Bengal, is subject to the tripartite agreement between the three co-basin States. The component of 15,000 acre feet of water will be utilised by West Bengal from the run of the river.
- (iii) The dam proposed by West Bengal in the Subarnarekha river above Chandil will not be constructed.
- (iv) Bihar will have no objection to construction of a weir on the Subarnarekha above Chandil for meeting West Bengal's need within their allocated share;
- (v) Bihar will have no objection to the utilisation of some surplus water of Subarnarekha from free catchment below Kokpara in Haldia and other places by West Bengal. Bihar may also develop Subarnarekha valley for inland water transport as it will provide a direct sea-face to the State.
- (vi) If there is any shortage or surplus over the currently estimated annual yield at 75 per cent dependability at Kokpara in any water year, then this shortage or surplus will be shared by the three co-basin States of Bihar, Orissa and West Bengal. It will be reasonable to reallocate the surplus, if any, in proportion to the respective catchment areas of the three

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<sup>5</sup> Bihar covers territories of present day Bihar and Jharkhand. At present however Jharkhand is basin State in Subarnrekha.

riparian States as at Kokpara. In case of shortage, however, the same will be shared by the three states in proportion to the respective allocations which are 32:12:1 for Bihar, Orissa and West Bengal respectively;

- (vii) Since water resources of Subarnarekha basin below Kokpara have not yet been assessed and apportioned among the three riparian States, it is agreed that a Committee under the Chairmanship of the Chairman, Central Water Commission and consisting of the Chief Engineers of the three co-basin States may be constituted to make a final assessment of the water resources below Kokpara at 75 per cent dependability and to recommend allocations between the three States. It will be reasonable to allocate this water resource in proportion to the respective catchment areas of the three riparian States below Kokpara;
- (viii) The resources apportioned between the three riparian states, above and below Kokpara, can be utilised by the respective States in any manner they choose, without exceeding the respective limits of their allocated/allocable resources;
- (ix) This agreement will come into effect after the conclusion of a tripartite agreement between the three co-basin States of Bihar, Orissa and West Bengal. The Governments of Bihar and West Bengal sincerely hope that it should be possible to speedily initiate the implementation of this agreement and towards this end will singly and jointly make efforts for the early conclusion of the tripartite agreement.
- (x) It is also decided that in the event of any dispute relating to this agreement and the inability of the two States to settle the matter amicably through mutual discussion, a sole Arbitrator of the Standing of a Supreme Court Judge would be appointed to settle the matter and his decision shall be final and binding on both the States.

Sd/  
(KARPOORI THAKUR)  
Chief Minister, Bihar

Sd//  
(JYOTI BASU)  
Chief Minister, West Bengal

Witnessed by

Sd/  
(SACHINDA NAND SINGH)  
Irrigation Minister, Bihar

Sd/-  
(PROVASH ROY)  
Irrigation Minister, West Bengal

PLACE: PATNA



## TRIPARTITE AGREEMENT ON SUBARNAREKHA

### AGREEMENT ON THE UTILISATION OF THE WATER RESOURCES OF SUBARNAREKHA-KHARKAI BASIN, WHERE BIHAR, ORISSA AND WEST BENGAL ARE CO-BASIN STATES, REACHED BY THE CHIEF MINISTERS OF BIHAR, ORISSA AND WEST BENGAL AT NEW DELHI ON 7<sup>th</sup> AUGUST, 1978.

The State Governments of Bihar<sup>6</sup>, Orissa and West Bengal being desirous of attaining the optimum utilisation of the water resources of the Subarnarekha-Kharkai basin and recognising the need thereof for fixing and delimiting the rights and obligations of each State in relation to others concerning the use of these waters and taking note of the agreements, dated 17<sup>th</sup> January, 1976 and 25<sup>th</sup> October, 1976 reached by the Chief Ministers of Bihar and Orissa and the agreement, dated 19<sup>th</sup> July, 1978 reached by the Chief Ministers of Bihar and West Bengal approve the tripartite agreement set out hereinunder.

1.1 The 75 percent dependable annual yield has been assessed at Kokpara to be 4.5 million acre feet. The Eastern Zonal Council in their 9<sup>th</sup> meeting on 28<sup>th</sup> January 1965 allocated 3.2 million acre feet to Bihar, 1.2 million acre feet to Orissa and 0.1 million acre feet to West Bengal. These allocations are accepted by the respective three States.

1.2 The three States take note and accept the recommendations of the Committee set up under the Chairmanship of the Chairman, Central Water Commission and consisting the Chief Engineers of Bihar, West Bengal and Orissa according to which the water resources of the Subarnarekha basin below Kokpara at 75% dependability have been allocated to the co-basin States as below:

|                |                    |
|----------------|--------------------|
| 1. Bihar       | 2.7 lakh acre feet |
| 2. Orissa      | 2.9 lakh acre feet |
| 3. West Bengal | 5.9 lakh acre feet |

1.3 The resources apportioned amongst the three riparian States, above and below Kokpara, can be utilised by the respective States in any manner they choose, without exceeding the respective limits of their allocated resources.

1.4 If there is any shortage or surplus over the currently estimated annual yield at 75% dependability at Kokpara in any water year, then this shortage or surplus will be shared by the three co-basin States of Bihar, Orissa and West Bengal. According to the agreement already entered into by the three co-basin States, the water resources at Kokpara at 75% dependability have been distributed between Bihar, Orissa and West Bengal in the proportion of 32 : 12 : 1. It is agreed that in the event of surplus over the currently estimated annual yield at 75% dependability at Kokpara, the surplus water will be allocated between Bihar, Orissa and West Bengal in the proportion of 8 : 1 : 1. However, in case of shortage, it will be shared by the States of Bihar, Orissa and West Bengal in the proportion of 32 : 12 : 1. In the area below Kokpara, both shortages and surpluses will be shared by the three States of Bihar, Orissa and West Bengal in the proportion of 2.7 : 2.9 : 5.9 respectively.

## 2. UTILISATION OF WATER RESOURCES AT KOKPARA

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<sup>6</sup> Bihar in this agreement covers territories of present day Bihar and Jharkhand. At present however Jharkhand is basin State in Subarnarekha.

2.1.1 The storage capacity of the Dam as proposed by Bihar on the river Kharkai (hereinafter referred to as the Kharkai dam) will be 0.68 million acre feet out of which Bihar and Orissa, will be entitled to 0.50 million acre feet and 0.18 million acre feet respectively. The cost of the Kharkai Dam and its appurtenant works will be shared between Bihar and Orissa in the proportion of 5.00 : 1.80.

2.1.2 Orissa will extend the required assistance and co-operation in acquiring the land in Orissa that will be submerged by the Kharkai Dam. The cost of such acquisition and of consequential rehabilitation will be included in the cost of the Kharkai Dam. The scale and standard of rehabilitation will be fixed in due course by mutual agreement between Bihar and Orissa.

2.1.3 Upstream of the Kharkai Dam, Bihar and Orissa will limit their utilisation to 0.05 million acre feet and 0.20 million acre feet respectively.

2.1.4 The Management of the Kharkai Dam will be as follows:

- (i) For sharing the water in the dam the year will begin from the 1<sup>st</sup> day of July.
- (ii) The need for Kharif irrigation in Bihar and Orissa will be given the first priority and water released against their share on such needs as indicated by Bihar and Orissa.
- (iii) The balance water available out of the allocations of Bihar and Orissa, after the Kharif season, will be drawn by the respective States for Rabi and Summer irrigation.
- (iv) Bihar and Orissa will be free to fix the priority for the utilisation of its share for industrial and other uses, without affecting the interest of the other State.
- (v) The shortage or surplus over the estimated annual yield at 75% dependability, if any, during the water year will be shared by Bihar and Orissa in proportion to their respective interests in the storage.

2.2.1 Over and above the conservation storage, the Chandil Dam will have a flood storage of 0.375 million acre feet for flood moderation benefits in West Bengal and Orissa. The three co-basin States of Bihar, Orissa and West Bengal will jointly request the Government of India to meet the cost of the flood moderation portion of the dam fully.

2.2.2 Of the allocated resources of 1 lakh acre feet for West Bengal at Kokpara, 50,000 acre feet will be utilised upstream of the Chandil Dam. For the remaining 50,000 acre feet, 10,000 acre feet for Kharif and Rabi irrigation will be made available by Bihar, free of charge, to West Bengal through the left bank high level canal system of the Chandil Dam. The balance 40,000 acre feet shall be utilised by West Bengal below Kokpara. To facilitate this utilisation, storage space of 25,000 acre feet shall be provided for West Bengal in the Chandil Dam, a limit which will not be exceeded in any water year and for which the proportionate cost of the dam and appurtenant works shall be borne by West Bengal. The component of 15,000 acre feet of water will be utilised by West Bengal from the run of the river.

2.3.1 Bihar will construct a barrage at Galudih with one canal on each side. Orissa will be entitled to draw through the right bank main canal its share of water in the Kharkai Dam. In addition, Orissa will also draw from this barrage the run of the river flow as available for utilisation in its territory, out of which up to 0.10 MAF will be during the non-monsoon period. The drawal from this barrage by Bihar in the non-monsoon period will be upto 0.06 MAF. Provided that if the flow in any non-monsoon period is less than 0.16 MAF the shortage shall be shared between Bihar and Orissa in the proportion of 3:5. Further provided that until the Kharkai Dam is constructed and put into operation all excesses over 0.16 MAF in the non-monsoon flow at Galudih barrage shall be utilised by Orissa. This will be exclusive of the releases to be made from Chandil Dam for West Bengal as per para 2.2.2 above.

2.3.2 The cost of the Galudih barrage and its appurtenant works shall be shared between Bihar and Orissa in proportion to the annual designed withdrawals, that is to say, on cusec day basis.

2.3.3 The right bank main canal from the Galudih barrage will be a lined one and will be so designed as to involve minimum land acquisition in Bihar. The cost of the canal shall be shared between Bihar and Orissa on the cusec-mile basis. .

2.3.4 The execution of the, Kharkai and Chandil Dams and Galudih barrage project along with the right bank main canal up to Orissa border will be taken up together at a time. The arrangements for the execution of the Kharkai Dam will be as may be decided by the Chief Ministers of Bihar and Orissa.

2.3.5 Until the Kharkai Dam is constructed and put into operation, Orissa may not be able to draw its quota according to its need. If such withdrawal by Orissa during the non-monsoon period does not come to 0.25 million acre feet at Galudih barrage, the balance shall be made available to Orissa by Bihar at the Galudih barrage in the non-monsoon period by a judicious operation of the Chandil reservoir, until the Kharkai Dam is executed and put into operation.

2.4 Since the interests of more than one State have been admitted within each of the utilities of Kharkai Dam, Chandil Dam and Galudih barrage, their regulations shall be conducted as under.

2.4.1 There will be a joint regulation of the Kharkai Dam by a Committee of a Chief Engineer nominated by Bihar, a Chief Engineer nominated by Orissa and a Member of the Central Water Commission who will be its Chairman. The Committee will formulate its rules and procedure.

2.4.2 There will be a joint regulation of the Chandil Dam and Galudih barrage by a Committee consisting of the Chief Engineers, each nominated by the three co-basin states and a Member of the Central Water Commission who will be its Chairman.

2.4.3 To achieve flexibility in the operation of the Kharkai and the Chandil reservoirs and the Galudih barrage in the best interest of all the States, these two Committees as per Clauses 2.4.1 and 2.4.2 may make diversion of supplies from one or the other reservoir subject to the condition that the share of each State during the water year will not be affected adversely.

2.4.4 There shall be a Joint Control Board consisting of the following members for execution of the Galudih Joint Project which comprises of the Galudih barrage and the right bank main canal up to Orissa border:

- (i) Chief Ministers of Bihar and Orissa (alternate Chairman for one year) .
- (ii) Irrigation Ministers of Bihar and Orissa.
- (iii) Chief Engineers of Irrigation of Bihar and Orissa.
- (iv) Irrigation Secretaries of Bihar and Orissa.
- (v) Finance Secretaries of Bihar and Orissa.
- (vi) Collector of Mavurbhanj and Deputy Commissioner of Singhbhum
- (vii) Other Officers as may be nominated not exceeding two each by Bihar and Orissa.
- (viii) The project Engineer of the joint Project (by whatever designation he may be called)  
-- Non-Member-Secretary.

The Joint Control Board of the Galudih Joint project will function. as per the provisions made in the Bipartite Agreements between Orissa and Bihar, dated 17<sup>th</sup> January, 1976 and 25<sup>th</sup> October, 1976.

3. The water resources below Kokpara allocated amongst the three riparian states shall be utilised subject to the provisions as under.

3.1 West Bengal shall construct a barrage across the Subarnarekha at or near Jhareswarpur to irrigate lands during the Kharif and Rabi seasons in the district of Midnapur by utilising its allocated resources of 40,000 acre feet of water above Kokpara (vide Clause 2.2.2) together with its allocated resources below Kokpara.

3.2 Orissa will be entitled to draw any part of its share as per Clauses 1.1 and 3 above by releases in the river through all the hydraulic structures.

3.3 Regarding flood moderation and the recognised need for flood relief of Orissa and West Bengal agree to discuss and plan for a simultaneous and co-ordinated execution of an embankment system on either side of Subarnarekha in consultation with Central Water Commission, Ministry of Railways and Ministry of Transport, Government of India.

4. Bihar may also develop the Subarnarekha Valley for inland water transport as this will provide a direct sea-face to the state.

5. West Bengal may construct a weir on the Subarnarekha above Chandil for meeting West Bengal's need within their allocated share.

6. West Bengal shall not construct any dam on the main Subarnarekha river above the Chandil Dam.

7. It is agreed that all these three co-basin States will take effective steps to control pollution in the river originating in their respective territories.

8. This tripartite agreement shall be given effect to in conjunction with the other agreements, already reached and appended hereto by co-basin States, and in the event of any repugnance the terms of this tripartite agreement will prevail.

9. It is also decided that in the event of any dispute relating to this agreement and the inability of the three States to settle the matter amicably through mutual discussions a sole arbitrator of the standing of a Supreme Court Judge would be appointed by the President of India to settle the matter and his decision shall be final and binding on all the three States.

NEW DELHI  
August 7, 1978

Signed on behalf of the  
Government of Bihar

Signed on behalf of the  
Government of Orissa

Signed on behalf  
of the Government of West Bengal

Sd/-  
( KARPOORI THAKUR )  
Chief. Minister

Sd/-  
( NILAMANI ROUTROY )  
Chief Minister

Sd/-  
( JYOTI BASU )  
Chief Minister

## MINUTES OF THE MEETING OF MADHYA PRADESH AND ODISHA OFFICERS OF IRRIGATION & ELECTRICITY DEPARTMENTS HELD AT PACHMARHI ON 15.6.73

**Present :**

### **Madhya Pradesh**

1. Sri K. C. S. Acharya,  
Secretary Irrigation & Electricity Deptt.
2. Sri K. L. Handa  
Irrigation Advisor,
3. Sri Y. S. Das  
Member (Finance)  
M.P.E.B.
4. Sri R. L. Gupta,  
Chief Engineer, (Investigation)
5. Sri V. M. Chitale  
Deputy Secretary, Irrigation
6. Sri H. V. Mahajani  
Superintending Engineer, Godavari
7. Sri Matin Ahmad,  
Superintending Engineer, Bilaspur
8. Sri V. S. Sapkal,  
Under Secretary, Irrigation Department

### **Odisha**

1. Sri N. R. Hota  
Secretary, Irrigation & Power Deptt.
2. Sri R. C. Patro  
Chief Engineer, Irrigation
3. Sri K. C. Gantayat  
Chief Engineer, Electricity

1. Secretary, Irrigation and Electricity Department, Madhya Pradesh<sup>7</sup> extended a hearty welcome to Odisha Officers and expressed the hope that mutually acceptable solutions would be found to problems pending between the two States.
2. Secretary, Irrigation and Power, Government of Odisha reciprocated and explained the background of the issues pertaining to the rivers common to the two States.

After this the various projects were discussed as under:

### **Ib Diversion scheme :**

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<sup>7</sup> Madhya Pradesh in this agreement covers territories of both present day Madhya Pradesh and Chhattisgarh. However, Chhattisgarh is major basin state in Mahanadi basin and all territories mentioned in the agreement are part of Chhattisgarh.

3. Secretary, irrigation and Power, Odisha pointed out that Madhya Pradesh is constructing a diversion weir on Ib river. This river is a source of water supply to the Orient Paper Mill at Brajrajnagar as well as to Sundargarh, a District town in Odisha State. Government of Odisha apprehends that the summer flows in Ib river will get reduced at the above two places due to diversion in Madhya Pradesh. Madhya Pradesh Officers explained that this work was taken up as a scarcity work in 1966-77 and it is tapping a catchment of 174 Sq.miles only in Madhya Pradesh. There is no live storage and Odisha should have no apprehensions as regards the availability of flows at the aforesaid two places.

It was decided that the flow data as maintained by Madhya Pradesh at the Ib weir site and by Odisha at Brajrajnagar and Sundergarh should be exchanged and studied. As Madhya Pradesh catchment below the diversion weir is also considerable, it was decided that in order to have full idea of the flow at the border of the two States, one more gauging site should be established by Madhya Pradesh. It was agreed that after studying such data further problems if any can be discussed.

#### **MAHANADI RESERVOIR PROJECT**

4. The Odisha Officers enquired about the salient features of this project and the utilization of Mahanadi waters that Madhya Pradesh is already making. It was explained to them that the Rudri Diversion weir was constructed more than 50 years ago. To firm up this irrigation a reservoir on a tributary of Mahandi was constructed near about 1926 which is known as Muramsili Reservoir. Subsequently another reservoir known as Dhudhawa tank was constructed on Mahanadi itself in 1958. The Mahanadi Reservoir Project near Gangrail is the third reservoir which is being constructed primarily for the Bhilai Steel Plant. A small irrigation component is also built into it.
5. The Chief Engineer, Odisha stated that for Mahanadi they have very nearly developed a water use of about 11 M.A.F. as below:

|   |  |               |
|---|--|---------------|
| In Sambalpur and Bolangir Districts- directly form the Reservoir. |  | 6 lakh acres  |
| Annual irrigation in deltaic regions-after power generation.      |  | 14 lakh acres |

The Odisha Officers stated that by constructing Mahanadi Reservoir Project in Madhya Pradesh their water utilization through Hirakud Dam as well as other riparian use down stream should not be adversely affected. Secretary, Irrigation, Madhya Pradesh enquired as to how much was the catchment in Odisha between the Hirakud Dam and the Naraj Weir? He felt that a considerable quantity of water would be available from this catchment also and that they should have no apprehension of diminution in the availability of water as a result of the Mahanadi Project. It was explained that this catchment is below the Hirakud Dam and is not a good catchment as compared to that above the Dam. Secretary, Irrigation and Power, Madhya Pradesh stated that Odisha might supply details of the catchment and water availability in Mahanadi below Hirakud, and also the following details:

- (i) Hydrological data as contained in the evaluation committee report for Hirakud (1962).

- (ii) Latest data developed for Hirakud Coordination Committee for regulating the uses between Irrigation and Power.
  - b. It was agreed to supply these data.
6. Utilisation of Mahanadi waters was discussed at length. It was explained by Sri Acharya that Mahanadi was the life-line of Chhattisgarh and drains the rice-bowl of the State. The total culturable command in the Mahanadi basin in Madhya Pradesh was more than 10 million acres falling in important districts like Durg, Raipur, Bilaspur, Bastar and Raigarh. These districts comprise extensive areas which grow finest qualities of paddy and not only meet the requirements of the State but also export substantial quantities to the neighboring States. The total catchment of the river at the Hirakud Dam site is 32,200 sq. miles out of which 27,900 sq. miles lie in Madhya Pradesh. As regards contribution of water, of the observed average annual inflows of 33 M.A.F. at Hirakud, 28.6 M.A.F are contributed by Madhya Pradesh. Having regard to these basic facts even 50% of the culturable command in the Mahanadi basin in Madhya Pradesh is to be brought under irrigation, considerable effort will have to be made by this State to plan and execute works for that target.
  7. He further stated that the Master Plan of Mahanadi Basin in Madhya Pradesh was in progress and his State was vitally interested in making optimum use of those waters for the thirsty lands of Chhattisgarh. The Secretary, Irrigation and Power, Odisha stated that the relevant details of Master Plan may be supplied to Odisha as and when ready, since Odisha being a lower riparian State, was vitally interested in all water uses upstream, particularly in the context of already developed uses in the Mahanadi basin in the State.
  8. It was agreed that officers of both the States should remain in constant touch and keep on exchanging data relating to the hydrology of the Mahanadi river, as well as detailed proposals for the utilization of its waters.

#### **FLOOD WARNING IN MAHANADI BASIN**

9. In order to help in flood warning system, it was considered that flood warning stations (wireless) should be installed by Madhya Pradesh at Raipur and Bilaspur under Flood Control Programme. Expenditure on these stations could be met out of Central sector provisions under Flood Control. In case of any difficulty on this score, the question of sharing the cost of these warning stations between the two states could be discussed and settled later.

#### **MADHYA PRADESH'S SHARE IN HIRAKUD POWER**

10. The Secretary, Irrigation and Power, Madhya Pradesh raised this question and said that although Hirakud Project has been completed many years back, Madhya Pradesh has not received till today its due share in the power that is generated there. He said that there were well accepted principles for determining the power share of the concerned States in an Inter State river. These principles are, the water and the fall contributed by each State. He pleaded with the Odisha Officers that they should accept the just and reasonable claim of Madhya Pradesh calculated on the above principles.
11. Secretary, Irrigation and Power, Odisha said that Madhya Pradesh was offered 5 M.W. of power from Harakud which they have accepted since long and this question therefore can not

be reopened again at this stage. Secretary, Irrigation and Power Madhya Pradesh stated that discussions about sharing Hirakud Power have been going on for the past nearly 20 years. In the early fifties when these matters were being discussed there was no awareness in the state about its power requirements in the eastern region nor was the claim pressed on the basis of the above principles that have been recognized throughout the World. Full scale discussions between the two States on this questions were also not held and the matters were pursued through correspondence which was protracted and intermittent. He said that the offer of Odisha to supply 5 M.W. of power was no doubt there but Madhya Pradesh had never accepted it finally. Since Madhya Pradesh contributed 87% of the catchment and 88% of the water at the Hirakud site, the question of sharing the Hirakud Power was an important one from the point of view of Madhya Pradesh and it could ill afford to treat it as closed. Secretary, Irrigation and Power, Odisha Government regretted that he could not agree to this view.

12. Sri Das, Finance Member of the Madhya Pradesh Electricity Board explained the detailed background of this matter and said that there were three important aspects:
  - a) Madhya Pradesh's share in power.
  - b) Tariff, and
  - c) Inter State Transmission line.
13. As regards Madhya Pradesh's share, Sri Das reiterated that it should be determined on the basis of the catchment and the water contributed by Madhya Pradesh. As a result of the Hirakud Dam 36 villages in Madhya Pradesh had been submerged and they had to be resettled elsewhere. Sri Das concluded this point by saying that according to the calculations of the M.P.E.B. the share of Madhya Pradesh in Hirakud Power works out to 63%.
14. As regards tariff, Shri Das referred to the D.O. Letter dated 9<sup>th</sup> July, 1969 from the Chief Minister, Odisha to the Chief Minister, Madhya Pradesh wherein it is said "with regard to the rate we are agreeable that it may be on no profit no loss basis. If you agree, the cost of generation and transmission may be worked out by technical experts and thereafter if there is any difference we may finally settle the matter". Sri Das said that so far as this matter was concerned, it had been finally decided at the level of the Chief Ministers that the power shall be supplied at no profit no loss basis and what now remains to be done is that the officers of the two Electricity Board should meet and work out the costs of generation and transmission.
15. Finally the question of Inter State connection was raised by Sri Das and he said that a number of meetings had taken place in the C.W. & P.C. and Ministry of Irrigation and Power in this regard. While Madhya Pradesh was agreeable for the Inter State line between Raigarh and Jharsuguda, Orissa had not shown keenness on it. In fact, in one of the meetings presided over by Sri Iyengar of C.W. & P.C., convened at the instance of Ministry of Steel, it was felt that it may be necessary for the Rourkela Steel Plant to receive power from Madhya Pradesh system and therefore there should be an Inter State link between Raigarh and Jharsuguda and that this line should be completed within three to four months time. Sri Das concluded by saying that Inter State links are centrally sponsored projects for which funds are made available outside the plan and it would be in the best interests of both the States if this Inter State link is established without any further loss of time.



- 16 Odisha officers while noting the points made by Sri Das replied as below :-

### **SHARE IN POWER**

They felt that Madhya Pradesh had already accepted their offer of 5 M.W. of power and the matter rested at that. Orissa was not very surplus in power and had already started experiencing shortage and it would be difficult for them to spare any large block of power. It was stated that for the villages submerged in Madhya Pradesh, acquisition land had been made by the Orissa Government and due compensation paid. Secretary, Irrigation & Power, M.P. stated that if it was not possible for Orissa to supply power, they should pay suitable compensation for that power used by them. Madhya Pradesh had taken such a stand for its share in Rihand power and the matter is before the Central Government for a settlement with Uttar Pradesh. Secretary, Irrigation and Power, Orissa Government reiterated that there is no question of payment of compensation at this stage since there was no agreement or understanding at the time of construction of Hirakud Dam to supply more than 5 M.W. of power to Madhya Pradesh Government. This position has been well settled and accepted by Government of India also.

### **TARIFF:**

- 17 They agree and stand by the Commitment made by the Chief Minister, Orissa in his D.O. letter dated 9<sup>th</sup> July 1969. The cost data as calculated for generation and transmission by the Orissa State Electricity Board will be furnished so that these can be checked and agreed to by Madhya Pradesh.

### **INTER-STATE LINK**

- 18 Sri Gantayat, Chief Engineer, Electricity explained some length the background against which discussions have been going on about this Inter-State Link. He explained that it was not merely a question of erecting a transmission line, but it was really a problem of running the two systems in parallel so that power could be exchanged between the two States. He said that it had not been possible to conclusively establish the feasibility of running the two systems, in parallel and that is the main bottleneck in the coming up of this link. Detailed surveys of the route alignment had not been done on both sides and it was not clear whether the link would be between Raigarh and Jharsuguda or Raigarh and Brajrajnagar. Then there was the limitation of the capacity of the substations at these two places. Lastly materials scheduling had also not been done as a result of which it would be impossible to erect this line in three to four month's time.
- 19 Odisha Officers stated that they were agreeable in principle to the erection of this Inter State link but, in their view, lot of ground work was required to be done before the final blue-print could be prepared. It was, therefore, agreed and decided that the officers of the two Boards shall exchange technical details on all the above components by the end of July. Studies and consultations should then be carried out and completed by mid-September so that the progress can be reviewed in the next official level meeting to be held at Bhubaneswar.

## **LAND UNDER SUBMERGENCE OF HIRAKUD**

- 20 The Secretary, Irrigation and Power, Orissa stated that the compensation for lands acquired on the periphery of Hirakud reservoir has been paid by the Government of Odisha but these lands are administered by the Collectors of Madhya Pradesh. These lands are given on temporary lease and the lease money is credited to the Government of Madhya Pradesh, where as this revenue ought to be credited to Government of Odisha. The Secretary, Irrigation, Madhya Pradesh, agreed to move the Revenue Department, Madhya Pradesh in this connection.

Sri Martin Ahmad, Superintending Engineer, Bilaspur mentioned that there is temporary submergence of lands and homesteads in Madhya Pradesh due to backwater effect of the exceptionally high floods. Such flooding of additional lands also occurs due to operation of gates, as it happened in the year 1961. It was pointed out from the side of Madhya Pradesh that this hardship would be all the more frequent if the reservoir was filled upto a higher level in monsoon months, thereby reducing the flood absorption capacity of the reservoir. There was, therefore, a case for proper regulation of the reservoir and payment of ex-gratia relief to the sufferers in years of hardship.

The Chief Engineer, Irrigation, Orissa said that the discharging capacity of the spillway of dam was adequate and there is no question of any additional submergence on this account. The problem created by faulty operation of gates in 1961 was admitted, but that this problem could recur in future was discounted. Shri Handa, Irrigation Adviser, Madhya Pradesh, observed that this was really a question of reservoir operation and needed a constant watch and study. Chief Engineer, Irrigation assured that this problem occurred in 1961 due to some special difficulties and will not recur in future.

## **SURPLUS WATER IN MAHANADI BASIN**

- 21 The Chief Engineer, Investigation, Madhya Pradesh stated that in the scheme of National Water Grid prepared by the Government of India surplus water of Mahanadi are proposed to be diverted through Ganga Cauvery link. The State of Madhya Pradesh and Odisha agreed to work out the quantum of water available in Mahanadi and also agreed to exchange notes in this behalf for evolving a stand on this vital as well as sensitive issue.

## **JONK PROJECT**

- 22 The Superintending Engineer, Irrigation Circle, Bilaspur explained the diversion scheme of Madhya Pradesh on Jonk, a tributary of Mahanadi. He explained that to stabilize the irrigation from this diversion scheme, Madhya Pradesh needs a storage reservoir upstream. The site of this storage reservoir having catchment area of 62 sq. miles is located in Orissa. A gross head of 832 ft. is also available from this reservoir for power generation. The Chief Engineer, Irrigation, Orissa who was given an index map of the scheme stated that Odisha is investigating a scheme on Jonk and the preliminary report prepared by Odisha will be sent to Madhya Pradesh. He also assured to examine the scheme proposed by Madhya Pradesh.

## **UPPER KOLAB : LOWER KOLAB AND KONTA**

- 23 Secretary, Irrigation, Madhya Pradesh, said that the first two projects of Odisha and the last one of Madhya Pradesh being on the same river be considered together.
- 24 It was decided that Lower Kolab Project will be surveyed by Odisha and Konta Project will be surveyed by Madhya Pradesh. The canal surveys for these two projects will be carried out by the respective States. The hydrology of Lower Kolab Project and Konta Project will be finalized by Odisha and Madhya Pradesh and these studies will be exchanged for comments. After the project reports are ready the question of sharing investigation costs will be taken up. It was agreed that the State Government of Madhya Pradesh and Odisha will issue orders for using the circuit houses and rest houses of both the States by the Officers of the Irrigation and Electricity Departments of the other State as if they were officers of the State. Government in which the circuit house or rest house is situated, for facility of investigation of these projects. It was also agreed that the project report of Upper Kolab will be made available to Madhya Pradesh Government.

## **UPPER INDRAVATI PROJECT.**

- 25 It was agreed to exchange the Hydrology of Upper Indravati Project prepared by Odisha with that of Madhya Pradesh relating to the same river downstream.
- 26 The Secretary, Irrigation and Power, Madhya Pradesh suggested that the dialogue between Madhya Pradesh and Odisha should continue and that such meeting should be held regularly. Secretary, Irrigation and Power, Odisha agreed and it was decided that the next meeting will be held in Odisha for which a suitable date and place will be fixed later.

**Sd/-**  
**(N.R. Hota)**  
**Secretary to Government,**  
**Irrigation & Power Deptt.,**  
**Bhubaneswar,**  
**Dated 27.06.1973.**

**Sd/-**  
**(K.C.S. Acharya)**  
**Secretary to Government**  
**Irrigation & Power Deptt.**  
**Bhopal.**

## **ORISSA-MADHYA PRADESH INTER-STATE MATTERS - IRRIGATION AND POWER PROJECTS IN MAHANADI BASIN.**

### **MEMORANDUM OF AGREEMENT ENTERED INTO BETWEEN THE STATES OF MADHYA PRADESH AND ORISSA ON 28.4.1983 AT BHUBANESHWAR**

In pursuance of discussions held on 27<sup>th</sup> April, 1983 at Bhubaneswar attended by Sri Arjun Singh, Chief Minister, Madhya Pradesh<sup>8</sup>, Shri Janki Ballabh Patnaik, Chief Minister, Orissa and Sri Niranjan Patnaik, Minister of State for Irrigation and Power, Orissa alongwith the officials of the two States (as per list enclosed), the following agreement was reached.

#### **1. Ib Project (Orissa Project)**

Madhya Pradesh agrees to spare 25 percent run off from the catchment area drained by Ib river and lying in its territory under the proposed Ib dam project (Approximate Latitude 23°-12' N, Longitude 84°\_06' E). Orissa agrees to fix full reservoir level of Ib dam at R.L. 272.50 m. The land in Madhya Pradesh would however, be acquired upto R.L. 273.0 metres to allow for back water impact. In exceptional cases, if areas lying above R.L.273.0 metres in the foreshore area of the reservoir in Madhya Pradesh are damaged due to floods, the damage being solely attributable to the construction of Ib dam, suitable compensation will be paid by Orissa. Madhya Pradesh may generate hydro-power at the headworks of Ib project entirely at its own cost without paying for the cost of storage but bearing the full cost of all additional civil and electrical works required for generation of hydro-power. Madhya Pradesh will make its own arrangement for operation and transmission of power generated. Project report for power part will be prepared by Madhya Pradesh for which Orissa will extend necessary cooperation. However, the regulation of the Ib reservoir shall be done by Orissa as per operational and irrigation requirements.

#### **2. Sapnai Project (Madhya Pradesh Project)**

Orissa agrees to spare 70 percent of runoff from its catchment area for use of in Madhya Pradesh at Sapnai dam (Approximate Lat.21°-53'-45"N, Long.83°-30'-05" E). Madhya Pradesh may formulate Sapnai Project leaving an upstream reserve to the extent of 30 percent of runoff from Orissa catchment for use in Orissa state. Submergence due to project is limited to Madhya Pradesh territory only.

#### **3. Kurnala Project (Joint project)**

Madhya Pradesh and Orissa agree to implement the Kurnala Project as a joint irrigation scheme, where the catchment area of Kurnala is about 45 sq. miles (Approximate Lat.21°-55' N, Long. 83°-33' E) to irrigate about 3000 acres in Madhya Pradesh and about 9000 acres in Orissa. The cost of headwork of the project shall be shared in proportion of the ultimate irrigation benefits derived by each State.

#### **4. Upper Jonk Project (Orissa project)**

Orissa agrees to supply water through the left bank canal of Upper Jonk Project at Orissa-Madhya Pradesh border to support irrigation in an area of 2000 acres in Madhya Pradesh territory on charges to be determined. The requirement of rest of the areas in Madhya Pradesh may be met by

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<sup>8</sup> Madhya Pradesh in this agreement covers territories of both present day Madhya Pradesh and Chhattisgarh. However, Chhattisgarh is major basin state in Mahanadi basin and all territories mentioned in the agreement are part of Chhattisgarh.

Madhya Pradesh by utilising the water of the tributaries of Jonk river upstream of lower Jonk Project (Orissa) draining that area subject to a maximum utilisation of 40 square miles of catchment. Orissa agrees to consider request Madhya Pradesh for submerging Orissa land for the above project(s), if any.

5. Lower Jonk project (Joint Project)

Orissa and Madhya Pradesh agree that a dam across Jonk river near Girina (Approximate Lat.  $21^{\circ}-10'$  N. Long.  $82^{\circ}-37'-30''$  E) should be constructed as a Joint Project and share the cost of dam, reservoir and available runoff in the ratio of 30 percent (Orissa) and 70 percent (Madhya Pradesh). The cost of head regulators and canal system will be borne by the respective beneficiary States. The surveys and investigation of Girina dam will be carried out by Madhya Pradesh.

6. Ong project (Orissa Project)

Madhya Pradesh agrees to spare 20 percent of runoff from its catchment area lying on Ong Sub-basin for use by Orissa at the proposed dam site across Ong river near its confluence with Surangi river (Approximate Lat.  $21^{\circ}-05'-29''$  N, Long.  $83^{\circ}-03'-06''$ ). Orissa agrees to fix the full Reservoir Level of Ong reservoir at R.L. 219.0 metres. Orissa may however fix the full reservoir level at R.L.220 metres provided the reservoir does not submerge existing irrigated area in Madhya Pradesh for which necessary field verification will be carried out jointly.

7. Jira Project (Orissa Project)

Madhya Pradesh agrees to spare run-off from 14.25 Sq. miles of its catchment lying in Jira sub-basin for use by Orissa at proposed Jira Dam Project (Approximate Lat. $21^{\circ}-23'$  N, Long.  $83^{\circ}-26'$  E) with full reservoir level fixed at R.L. 697.5 feet.

8. Sahajbahal Project (Joint Project)

Orissa and Madhya Pradesh agree to implement Sahajbahal Project as a joint irrigation scheme where the catchment area of the river is about 22 Sq. miles (Approximate Lat.  $21^{\circ}-21'-15''$  N, Long  $83^{\circ}-21'-15''$ E), in Madhya Pradesh. The cost of joint works and irrigation benefit shall be shared in the ratio of 70 percent (Madhya Pradesh) and 30 percent (Orissa). Surveys and investigations of this joint project will be carried by Madhya Pradesh.

9. Lower Kolab Project (Joint Project)

Orissa and Madhya Pradesh agree to re-investigate the lower Kolab Project with alternative possibilities of irrigation and hydro-power generation. If found feasible, the project shall be taken up as a joint project. Survey and investigation will be carried out by Orissa in consultation with Madhya Pradesh and the first preliminary report will be finalised by June, 1984.

10. Back Water Studies for Hirakud Dam

Both the States agree to carry out fresh back water studies for the Hirakud reservoir with a view to ascertaining the extent of submergence caused by Raigarh district of Madhya Pradesh at times of high floods. The Central Water and Power Research Station, Pune may, if necessary, be associated with these studies.

11. Establishment of Joint Control Board

Madhya Pradesh and Orissa agree to establish Joint Control Board to review the progress, from time to time of survey, investigation, planning, execution and preparation of Joint Inter-State Irrigation and/ or Power Project(s) and to discuss and resolve any issues.

## 12. Supply of Power

It is agreed that supply of 5 MW power which was committed by the Government of Orissa previously will be resumed.

As the M.P. State Electricity Board are keen to have power from Hirakud, this will be supplied at Hirakud Bus Bar. The cost of power will be the cost of generation at Hirakud Power House. The cost would be reviewed annually by the representatives of the two Boards.

The question of payment of Electricity Duty by M.P. Electricity Board for future supply by Orissa state electricity Board of 5 M.W power would be referred to the Department of power, Government of India for their guidelines..

Sd/-28.4.83  
( J. B. P ATNAIK )  
Chief Minister, Orissa

Sd/-28.4.83  
(ARJUN SINGH )  
Chief Minister, Madhya Pradesh

The 28<sup>th</sup> April, 1983.

MEETING HELD ON 27.4.1983 AT BHUBANESHWAR

### LIST OF OFFICERS PRESENT

| <u>Madhya Pradesh</u> |  | <u>Orissa</u> |  |
|-----------------------|--|---------------|--|
| 1.                    | Shri N.R.Krishan, I.A.S.<br>Secretary, Energy and<br>Secretary to Chief Minister | 1.            | Shri Gyan Chand, IAS<br>Chief Secretary  |
| 2.                    | Shri V.M.Chitale<br>Secretary Irrigation   | 2.            | Shri P.C. Hota, IAS<br>Commissioner-cum-Secretary<br>Irrigation and Power Department |
| 3.                    | Shri Matin Ahmad<br>Chief Engineer and Special<br>Secretary to Chief Minister    | 3.            | Shi S.B. Misra, IAS<br>Secretary to Chief Minister                                   |
| 4.                    | Shri A.S.Dhagat<br>Chief Engineer Irrigation<br>Mahanadi Basin                   | 4             | Shri S.C. Tripathy, Consultant   |
| 5.                    | Shri S.C. Sahani<br>Superintending Engineer                                      | 5.            | Shri K.T. Subudhi,<br>Engineer-in-chief, Irrigation                                  |
| 6.                    | Shri U.B. Singh<br>Superintending Engineer                                       | 6.            | Shri A .Panda, Chairman,<br>Orissa State Electricity Board                           |
|                       |  | 7.            | Shri K.C. Mohapatra, Deputy Secretary,<br>Irrigation & Power                         |

8. Shri R.K. Mishra,  
Deputy Secretary, Irrigation & Power
9. Shri M.L. Lath,  
Superintending Engineer, Technical Unit
10. Shri J.C. Pati,  
Executive Engineer, Planning
11. Shri S.N. Mishra,  
Executive Engineer  
Sundergarh Irrigation Division
12. Shri C.R. Mohapatra,  
Executive Engineer,  
Padmapur Irrigation Division
13. Shri S.N. Mohanty,  
Executive Engineer,  
Kalahandi Irrigation Division
14. Shri A.R. Satapathy,  
Assistant to Engineer-in-chief  
Irrigation, Orissa

**MINUTES OF DISCUSSION HELD AT BHUBANESWAR BETWEEN THE REPRESENTATIVES OF ANDHRA GOVERNMENT AND ODISHA GOVERNMENT OF 7<sup>th</sup> AND 8<sup>th</sup> JULY, 1956.**

*Present:*

**ANDHRA**

Deputy Chief Minister,  
Secretary, Works Department,  
(Sri V.V. Subrahmanyam, I.C.S.)  
Special Chief Engineer for Irrigation

**ODISHA**

Chief Minister,  
Deputy Minister, Works  
Chief Secretary, Secretary, Works,  
Joint Secretary, Works,  
Addl. Chief Engineer (Irrigation)  
Dy. Secretary, finance (Sri K.S. Bawa)

After general discussion on the problem the following decisions were taken:

1. The Gotta Reservoir Project will be so designed and worked that the water level in Odisha will not exceed 157 R.L. at any time.
2. A foreshore bund will be provided along the border of the reservoir towards Odisha as a protection against wave action.
3. Submersion will be limited to 350 acres at the most. Due provision will be made in the project for resettlement and rehabilitation of the persons who lose land.
4. Final designs should be shown to the Odisha Government, by the Andhra Government but work on the Gotta scheme should go on immediately subject to the above three conditions.
5. The investigation of the Gangudu (Sunanoi) Project and Bridge-cum-regulator at Godiakola near Gunupur is to be undertaken jointly by the Odisha and Andhra Government and the cost of investigation will be shared 50:50. The Andhra Government have agreed to depute sufficient staff for investigation of the Project within a month and the investigation will be carried out by the Odisha Government. The staff deputed will be given 25% deputation allowance and other allowances including agencies allowance admissible under Andhra Pradesh Government rules.
6. Andhra Government are willing to undertake the execution of the barrage and the Sunanoi Project if the return on the outlay is at least three percent. The sharing of the cost of the execution will be determined later according to the advantage to be derived by the respective State Government.



**NOTE OF DISCUSSIONS HELD AT THE MEETING OF THE JOINT CONTROL BOARD  
MACHKUND ON THE 14<sup>th</sup> JUNE 1960 AT.3.00 P.M**

Present :

**Odisha**

Chief Minister, Odisha State.

Minister, Irrigation, Odisha State

Chief Secretary to Government, Odisha State.

Revenue Divisional Commissioner Southern Division, Odisha.

Additional Chief Engineer, Irrigation, Odisha.

**Andhra Pradesh**

Chief Minister, Andhra Pradesh

Minister for Public Works, Andhra Pradesh.

Secretary to Government, PWD., Andhra Pradesh.

Sri L. Venka Krishna Ayyar,

Special Chief Engineer (Irrigation), Andhra Pradesh.

The position with regard to the Vamsadhara Project was explained. Odisha had previously agreed to the construction of a Dam at Gotta. This would inundate about 350 acres of land in Odisha and 25,000 acres in Andhra Pradesh. Investigations were made whether any Project can be developed in the upper reaches of the river which would not inundate valuable areas. It was suggested by Andhra Pradesh at the instance of C.W. & P.C. that a dam was feasible at Gudari on the Vamsadhara. Such a reservoir would inundate a comparatively smaller area which is mostly forest land and may provide a regular flow of water in the river to stabilize supplied at Gotta. It was explained on behalf of Odisha State that they have already prepared projects in the Upper reaches of Vamsadhara above Gudari and have started executing some of them. If the utilization by these projects is allowed for it appears certain that there will not be adequate water available for a reservoir at Gudari. It may not therefore be worthwhile having a Reservoir at this place on account of the irrigation schemes of Odisha Government.

The original agreement with regard to Gotta would therefore be adhered to. It was also mentioned that there may be accumulation of water outside on account of bunds but Andhra Pradesh representative indicated there will be provision for suitable outfall sluices to permit of drainage into the Reservoir. Plans and estimates of the Scheme as may be finalized will be sent to the Government of Odisha for information.

2. There are certain works in Odisha which are of benefit both to Odisha and to Andhra Pradesh. They include flood embankments on the Vamsadhara Head Works on the water course river channels and irrigation tanks and irrigation sources particularly in the Parlakimidi Sub-Division. It was agreed that repairs to those works should be done by the Government of the place where the source is situated and repairs are to be taken up.
3. It was accepted in principle that both Odisha and Andhra Pradesh will share the cost of the annual and special repairs in proportion to the ayacut concerned in the case of irrigation sources like tanks and water courses and in proportion of the area protected in the case of embankment.
4. It was mentioned that repairs to the Vamsadhara embankment at Kaduma is urgent and should be taken up immediately. The Chief Engineer, Irrigation, Odisha [Shri Palit] should take immediate steps after consulting the Special Chief Engineer, Irrigation, Andhra Pradesh, [Shri L. Venkakrishna Ayyar]

**DECISION TAKEN AT INTERSTATE CONFERENCE HELD BETWEEN THE CHIEF MINISTERS OF ANDHRA PRADESH AND ODISHA AT HYDERABAD ON 17<sup>th</sup> AND 18<sup>th</sup> JULY 1961**

At the interstate Conference held between the Chief Ministers of Andhra Pradesh and Odisha at Hyderabad on 17<sup>th</sup> and 18<sup>th</sup> July 1961, at which the Ministers, Finance and Public Works of Andhra Pradesh and the officials of the two State Governments were also present the following decisions<sup>9</sup> were taken:

**4. NERADI PROJECT ON THE VAMSADHARA RIVER:** The Andhra Pradesh representatives stated that they wanted to execute the Irrigation Project at Neradi, which entails the acquisition of 106 acres of land in Odisha territory and they wanted Odisha Government's concurrence to go ahead with the Project. It was indicated that it might be possible to irrigate some areas of Odisha from this project. On behalf of Odisha it was stated that while Odisha Government had no objection, they wanted to safe-guard against the water logging of their area and therefore had asked for certain details. As soon as these details are received, Odisha Government would communicate their concurrence to the Project.

**Sd/-  
D. Sanjivayya  
Chief Minister of Andhra Pradesh  
18.7.1961**

**Sd/-  
Bijoyananda Patnaik  
Chief Minister of Odisha  
18.7.1961**

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<sup>9</sup> At this conference, decisions were taken about some projects in Godavari basin also. These decisions are mentioned under the Agreements in Godavari basin.

**PROCEEDINGS OF THE CONFERENCE BETWEEN THE ADDITIONAL CHIEF ENGINEER (IRRIGATION) ODISHA STATE, IRRIGATION ADVISER AND CONSULTING ENGINEERS ADDL. SECRETARY TO GOVT. P.W.D. ANDHRA PRADESH AND CHIEF ENGINEER (GENERAL & IRRIGATION) ANDHRA PRADESH HELD ON 4<sup>th</sup> SEPT. 1962 IN THE CHAMBERS OF IRRIGATION ADVISER, CONSULTING ENGINEER & ADDITIONAL SECRETARY TO GOVT. WORKS DEPARTMENT, ANDHRA PRADESH, HYDERABAD**

Present:

1. Shri L. Venkatakishna Iyer, I.S.E.,  
Irrigation Adviser & consulting Engineer & Additional Secretary, P.W.D. Andhra Pradesh.
2. Shri A. R. Venkataraman, I.S.E., Chief Engineer (General & Irrigation), Andhra Pradesh.
3. Shri M. C. Pani, Addl. Chief Engineer, (Irrigation), Odisha.

**The followings are also present:**

4. Shri S. C. Tripathy, Superintending Engineer,  
P.W.D. Odisha State.
  5. Shri H. A. Kabir Khan, B.E.  
Director, Interstate & Designs, Andhra Pradesh.
- 
1. As regards Neradi Barrage, the design of the anicut and location of the top level of the flood bank proposed and arrangements to be made for providing drainage of the area on the off side of the flood bank in Odisha State were examined in detail with reference to the plans. The expected maximum flood discharge and the maximum flood level upstream and downstream of the anicut were also examined.
  2. It was agreed that the design proposed by the Andhra Pradesh Engineers for the flood bank and agreements proposed by the Andhra Pradesh for the drainage sluice were generally acceptable.
  3. The Odisha Engineers desired that they may be given the finally approved design of the out fall sluice and this may cater for a run off of 1 inches per hour in the catchment under reference. The flood bank should have 6 inches of free board above M.W.L. with 2 feet pitching above M.W.L. in the river side.
  4. The Odisha Engineers also agreed that a sluice may be provided on the left flood bank at a place to be indicated by them and of the sites to be indicated by them for any future irrigation to be proposed in their territory and the cost of the sluice would be borne by them. If and when, in future irrigation is decided in Odisha State the cost of the proposed anicut will be borne on ayacut basis.
  5. The Neradi Irrigation proposes to provide, on the Andhra side for first crop only. It was agreed that the existing Irrigation interests both under Odisha and Andhra Pradesh area in the Vamsadhara River basin will be a first charge on the waters. It was also agreed that the water requirement of the Neeradi Project will be met out of what was agreed to under Gotta Reservoir Scheme previously. Odisha Engineers had no objection to the Neradi Project subject to the above condition.

6. The Andhra Pradesh Engineers stated that there is no proposal for additional irrigation beyond what is now proposed for under the Neradi-Barrage and Gotta Reservoir. The Andhra Pradesh Engineers therefore had no objection to the utilization by Odisha State of the balance of waters under Vamsadhar subject to the protection of the existing irrigation interests in Andhra area which is roughly, estimated at 10 TMC ft. The Odisha Engineers requested Andhra Engineers to send the working tables for the Neradi Barrage and Gotta Reservoir so that they may examine them and give their requirements for abstraction of water from Vamsadhara River and thereafter the two Chief Engineers will meet and provide the necessary basis for final allocation of waters in Vamsadhara Basin.

Sd/-  
M.C. Pani  
Dt. 4.9.62

Sd/-  
L. Venkatakrishna Iyer

Sd/-  
A.R. Venkataramana  
Dt. 4.9.62.

**MINUTES OF THE DISCUSSIONS HELD AT BHUBANESWAR ON 30<sup>th</sup> SEPTEMBER 1962, BETWEEN SRI M. C. PANI, ADDL. CHIEF ENGINEER, IRRIGATION, GOVERNMENT OF ODISHA & SRI L. VENKATAKRIHNA IYER, IRRIGATION ADVISOR & CONSULTING ENGINEER TO GOVT. ANDHRA PRADESH AND ADDL. SECRETARY TO GOVERNMENT P.W.D., ANDHRA PRADESH, HYDERABAD.**

From the data available it has been estimated that the yield of Vamsadhara river at Gotta Reservoir is 115.00 TMC The requirements of Andhra Pradesh for Gotta Irrigation Project and Neradi anicut is 47.4 TMC The total quantity of water for the existing irrigation in Andhra Pradesh is about 7 TMC. So the total requirements of water of Andhra Pradesh for the existing irrigation and projects which are now being taken up is 54.5 TMC, The requirements of water for the projects in Odisha State has been roughly estimated to be 55 TMC.

Thus the yield of Vamsadhara Basin is just sufficient to meet the requirements of Both the States. The water of Vamsadhara basin may consequently be utilized by both Andhra Pradesh and Odisha States on a fifty: fifty basis.

It is agreed that the projects in Andhra Pradesh can be taken up immediately on this basis.

Sd/-30.9.62  
M.C. Pani  
Addl. Chief engineer,  
Irrigation, Government of Odisha, Bhubaneswar.

Sd/-30.9.62  
L. Venkatakrishna Iyer  
Irrigation Adviser & Consulting  
Engineer & Addl. Secretary, PWD.,  
Andhra Pradesh, Hyderabad.

**PROCEEDING OF THE MEETING BETWEEN THE CHIEF MINISTER OF ANDHRA  
PRADESH AND ODISHA AT HYDERABAD ON THE 15<sup>th</sup> OF DECEMBER, 1978**

**The following were present :**

| <b>Andhra Pradesh</b>   | <b>Odisha</b>   |
|---|---|
| 1. Dr. M. Channa Reddi, Chief Minister  | 1. Sri Nilamani Routray, Chief Minister                             |
| 2. Sri. G. Raja Ram, Minister for Finance and Power.                          | 2. Sri Pratap Chandra Mohanty Minister of Revenue and Power         |
| 3. Sri. G.V. Sudhakar Rao, Minister for Major Irrigation and Commercial Taxes | 3. Sri Prahallad Mallik, Minister for Irrigation.                   |
| 4. Sri I.J. Naidu, I.A.S. Chief Secretary                                     | 4. Sri. B.M. Patnaik, Advocate General                              |
| 5. Sri. S.R. Rama Murthy, IAS, Secretary to Chief Minister.                   | 5. Sri B. Ramadoari, IAS<br>Secretary , Irrn & Power Deptt. Odisha. |
| 6. Sri P. Ramachandra Reddi,<br>Advocate General                              | 6. Sri. A.K. Biswal, Secretary to Chief Minister.                   |
| 7. Sri C.N. Shastri IAS, Secretary,<br>Irrigation and Power Deptt.            | 7. Sri S.C. Tripathy, Chief Engineer,<br>Irrigation.                |
| 8. Sri M. Gopalkrishna, IAS<br>Secretary, Primary and Secondary<br>Education. | 8. Sri B. Mishra,<br>Chief Engineer, Electricity.                   |
| 9. Dr. N. Tata Rao, Chairman, A.P.S.E.B.                                      | 9. Sri M. L. Lath, Executive Engineer,<br>Irrigation.               |
| 10. Sri Satyanarayan Singh, Special Officer,<br>Water Resources,              |   |
| 11. Sri D.V. Sastry, Advocate.  |   |

After full discussions, the following agreement was reached:

**1. NAGAVALI RIVER**

Gaugings are being done at the Odisha Andhra Pradesh State Border to determine the yield from Nagavali river. However, it is agreed on adhoc basis that Odisha can plan its projects utilizing upto 20 TMC on Nagavali river. The proposed utilization by Odisha affects the existing irrigation through diversion works and river channels in Andhra Pradesh territory. To protect the existing irrigation and develop some additional ayacut it is agreed on adhoc basis that Andhra Pradesh can plan Thotapalli storage reservoir scheme utilizing 16 TMC of water including lake losses. This scheme does not involve any submersion of Odisha territory.

## **2. JHANJAVATI RIVER**

In regard to Jhanjavati river the yield will be shared on 50:50 basis between Andhra Pradesh and Odisha. This yield is approximately assessed as 8 TMC. A revised project report for Jhanjavati utilizing approximately 4 TMC of water will be prepared by Andhra Pradesh providing gated spillway to keep submersion in Odisha territory to the minimum. The Government of Odisha agree to submersion subject to Andhra Pradesh paying compensation for land and property and rehabilitation expenditure according to Odisha Government norms prevailing during the period of acquisition and rehabilitation.

## **3. BAHUDA RIVER**

- a) The State of Odisha seeks clearance for full utilization of water in its territory from Bahuda river.
- b) As utilizations in Odisha territory affects existing irrigation system through river channels and development of new ayacut in Andhra Pradesh territory, it is necessary to provide appropriate storage to protect such existing irrigation. Andhra Pradesh agrees to construct at its own cost such storage in its territory without involving any submersion of Odisha territory. The storage scheme, however, needs some other ancillary works for its functioning and as such Andhra Pradesh seeks concurrence of Odisha for the following.
  - (i) The construction of regulator across Bahuda river below Kalingadola anicut near about kalabad village in Odisha territory with submersion in river bed and protected by flood banks.
  - (ii) The construction of a second regulator on Boginadi near Sappanga village in Odisha territory with submersion in river bed and protected by flood banks.
  - (iii) The construction of a diversion channel of appropriate capacity connecting the regulators (i) and (ii) above.
  - (iv) The construction of a flood flow channel of appropriate capacity not exceeding 2,000 cusecs capacity from the regulator at Kalabad village upto Andhra Pradesh-Odisha border within Odisha Territory.
  - (v) Odisha to make available to Andhra Pradesh 1.5 TMC (including lake losses) of water during June to December every year through the flood channel.
- c) The State of Andhra Pradesh agrees to the construction of Schemes as at (a) by Odisha subject to protection of 1.5 TMC for schemes at (b) and the State of Odisha agrees to the scheme as at (b) subject to Andhra Pradesh meeting the cost of construction including cost of land acquisition.
- d) Andhra Pradesh also agrees to utilization of the flood flow canal in Odisha territory for irrigation in its territory provided the extra water for such irrigation will be out of the share of Odisha and Odisha pays to Andhra Pradesh proportionate cost of flood flow channel.

## **4. NERADI JOINT PROJECT (VAMSADHARA)**

Regarding Neradi Joint Project, Andhra Pradesh should immediately send the project report to Odisha for incorporating Odisha's requirements.

## **5. JOINT MINOR IRRIGATION SCHEMES**

- a) There are some minor irrigation schemes with head works in Odisha State and ayacut in Andhra Pradesh. In some cases, the ayacut is partly in Odisha and Partly in Andhra

Pradesh. The Odisha Government has claimed a sum of Rs. 6.49 lakhs from 1953 to 1972 and Rs. 3.04 Lakhs from 1972-77 towards the share of Andhra Pradesh for maintenance and repairs of the Irrigation systems in their territory. A sum of Rs. 6.00 lakhs has been paid to Odisha by Andhra Pradesh on adhoc basis subject to final adjustment.

- b) The ayacut served in Odisha and Andhra Pradesh under the Joint Schemes is in the ratio 2:1 approximately. It is agreed that Andhra Pradesh will pay Odisha State for annual maintenance and repairs of joint minor irrigation schemes a sum calculated for the irrigated area in Andhra Pradesh territory under this system at the  $2/3^{\text{rds}}$  per acre rate fixed by the Government of Odisha as a State norm plus 16% towards establishment charges from 1953 onwards in full and final settlement of the share of Andhra Pradesh, in the expenses incurred by Odisha State on the maintenance and repairs of these joint sources. The amount of Rupees 6.00 lakhs will be adjusted against the share of cost upto 1977.
- c) Any outlay on improvement and capital works of the system will be subject to prior concurrence of both the States and will be shared prorata to the benefits.

Sd/-

Dr. M. Channa Reddi,  
Chief Minister, Andhra Pradesh

Sd/-

N. Routray,  
Chief Minister, Odisha



**PROCEEDINGS OF THE MEETING HELD ON 27.7.1980 AT 11 A.M. AT BHUBANESWAR BETWEEN THE OFFICERS OF THE GOVERNMENT OF ODISHA AND GOVERNMENT OF ANDHRA PRADESH TO SETTLE OUTSTANDING MATTERS<sup>10</sup>**

**(Attendance: as per enclosure)**

**8. JHANJAVATI:**

- a) The Govt. of Odisha agreed to the FRL provided in the revised project report which takes into account 4 TMC utilization of water.
- b) It was noted that gated spillway has been provided in the project report as suggested by the Government of Odisha.
- c) The proposal for joint survey given by Govt. of Andhra Pradesh to ascertain the submersion was accepted by the Govt. of Odisha, A.P. Govt. agreed to deposit Rs. 20,000/- by the end of Oct. 1980 with the executive Engineer, Jeypore Irr. Divn for this purpose. Formal decision about submersible area would be made after the joint survey was over.
- d) Pending the joint survey it was agreed that the Govt. of A.P. could go ahead with Jhanjavati work on the flanks (earth dam) on the basis of the revised project level of 480 M.W.L. It was also agreed that no work on the river gap should start till the joint survey was over and the submersion area was agreed upon.
- e) The Chief Engineer, Irrigation, Odisha pointed out that communication with Parvatipuram from Odisha side might be affected by the reservoir. He stressed the need for provision of bridge to ensure communication. It was pointed out by the Andhra Pradesh Chief Engineer that he would examine the matter.

**9. VAMSADHARA :**

Matter arising out of the project report for Neradi barrage were discussed in detail and the following decisions were taken.

- a) Andhra Pradesh will confine acquisition of Odisha lands to 106 acres as originally provided in the proceedings of the Inter-State agreement. It was agreed that the 106 acres acquisition would be exclusive of the river bed. It was also agreed that the left flood bank would be realigned and re-designed with the above acquisition in view. It was agreed that the embankment will be done with revetments wherever necessary and the money would be deposited with the Govt. of Odisha for execution of the left flood bank. The expenditure, on the maintenance over flood bank, it was agreed, will be a charge on the project. The problem regarding water logging in the rear of left flood bank was discussed and it was agreed, that catch drains on the land side of the embankment would be provided to avoid water logging. It was agreed that the construction of flood banks on both sides of the river should be taken up simultaneously.
- b) The Chief Engineer, Irrigation, Odisha State pointed out that the original agreement provided for utilization of water only during the first crop period at Neradi Barrage. It was agreed that the project report should be revised for ensuring withdrawal of water

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<sup>10</sup> Discussions on items 1-7 pertain to projects of Godavari basin, hence omitted under this item.

from Neradi barrage during the first crop period and all flow thereafter or beyond first December is let down in the river for use by both the States.

Sd/- B. Ramadorai,  
Secretary,  
Irrigation and Power Deptt.  
Government of Odisha

Sd/- C.S. Sastry,  
Secretary,  
Irrigation & Power Deptt.  
Government of Andhra Pradesh

### **Attendance**

#### **ANDHRA PRADESH**

1. Shri C. Srinivasa Sastry, IAS,  
Secy. I & P Andhra Pradesh
2. Shri C. Ramachandra Rao,  
Member (Technical) A.P.S.E.B.
3. Shri J. Raja Rao,  
Chief Engineer (major Irrigation and General), Andhra Pradesh
4. Shri N. M. Krishna,  
Chief Engineer, Investigation, Andhra Pradesh
5. Shri S. K. S. Hussain,  
Chief Engineer (Medium Irrigation), Andhra Pradesh
6. Shri C.R.M. Patnaik,  
Superintending Engineer, Vansadhara
7. Shri M. Ikaramuddin Wahaj, S.E., Investigation Water Resources.
8. Shri D. V. Krishna Raju,  
Executive Engineer, Vansadhara Project
9. Shri P. Balakrishna,  
Executive Engineer, Vansadhara Project.

#### **ODISHA**

1. Shri B. Ramadorai, I.A.S.  
Commissioner-cum-Secy. to Government,  
Irrigation and Power Department
2. Shri N. C. Behuria, I.A.S.  
Revenue Divisional Commissioner,  
Southern Division, Berhampur.
3. Shri P. Tripathy I.A.S.  
Commissioner-cum-Secy. to Government,

Forest, Fisheries & Animal Husbandry Deptt.

4. Shri P. K. Patnaik, I.A.S.  
Commissioner-cum-Secy. to Government  
Revenue Department.
5. Shri S. C. Triapthy  
Chief Engineer,  
Irrigation and Addl. Secy. to Government Irrigation & Power Deptt.
6. Shri S.P.R. Tata,  
Chief Engineer, Electricity and Addl. Secy. to Government,  
Irrigation and Power Department
7. Shri B. N. Das,  
Chairman, Odisha State Electricity Board.
8. Sri B. N. Tripathy  
Additional Chief Engineer, Upper Kolab Project.
9. Shri S.C. Hota, I.A.S.  
Collector, Koraput.

**SUMMARY RECORD OF DISCUSSIONS IN THE MEETING HELD ON 10.1.84 AT NEW DELHI UNDER THE CHAIRMANSHIP OF SHRI H. S. KRISHNASWAMY, MEMBER (WR), CWC AND EX-OFFICIO ADDL. SECY. TO THE GOVERNMENT OF INDIA ON VAMSADHARA PROJECT STAGE-II FLOOD HYDROLOGY OF NERADI BARRAGE**

**1. Present**

The list of officers of Government of Andhra Pradesh, Odisha and of Central Water Commission, Govt. of India present in the meeting is at Annexure-I.

**2. Opening remarks by the chairman**

- 2.1. Shri H. S. Krishnaswamy, Member (WR) welcomed the officers of Andhra Pradesh and Odisha and explained the background and the purpose of the meeting.
- 2.2. Vamsadhara Project Stage-II involves construction of Neradi Barrage across Vamasadhara river about 16 Kms d/s of Gunupur town in Odisha. As per the revised project report of 1982 the barrage and its appurtenant work like afflux bunds etc are proposed to be designed for a maximum flood discharge of 5.00 Lakhs cusecs.
- 2.3. Vamsadhara river experienced very heavy floods in September 1980. The peak discharge during this flood has not been measured directly but indirect estimates differing widely from each other are available. Odisha has expressed that the peak discharge during this 1980 flood was much larger than 5 Lakh cusecs and that this necessitates revision of the project proposals as submitted by Andhra Pradesh, as per the terms of existing inter-state agreement on Vamsadhara.
- 2.4. The main purpose of the meeting as explained by Member (WR) was to decide the flood hydrology parameters for Neradi barrage on a rational basis. Member (WR) brought out that as per the current CWC criteria a barrage is to be designed for a 100 year flood or standard project flood which ever is higher. He then invited the State Government concerned to reiterate their cases.

**3. Views of Odisha**

- 3.1. The Engineer-in-Chief, Odisha explained that their arguments for revision of the design flood have already been stated in their D.O. letter No. 34881-IRR-IS-8/83 dtd. 19.7.1983 addressed to Secretary (Irrigation), Govt. of India. The basis of their arguments is that the CWC field office at Bhubaneswar had intimated that the maximum flood discharge in September 1980 at their Gunupur site was 7.36 lakh cusecs. On the basis of this figure and small correction for difference in catchment areas they feel that corresponding flood discharge could have been about 8.1 lakh cusecs at Neradi Barrage. This according to them necessitated revision of the design flood discharge for Neradi Barrage and appurtenant works.

**3.2. Views of Andhra Pradesh**

The Special Secretary, Andhra Pradesh and Engineer-in-Chief, Andhra Pradesh explained the basis of their studies as included in the project report of 1982. It was stated that the design flood for Neradi was arrived at after analyzing the September 1980 flood survey data. For the latter purpose the data on 3 river cross-sections in the river reach near the Neradi and Flood marks of the September 1980 flood as collected by the field surveys had been used in the slope area method of computation by the 3 section formula which showed that the flood was of the order of 4.31 lakh cusecs. The standard project flood studies were also done separately using available data and figure of maximum rainfall given by the Hydrology-I Directorate of Central Water Commission. These studies which are also presented in the said project report have

shown that the standard project flood at Neradi was about 5 lakh cusecs. They, therefore, feel that there may not be any need to revise the figure of 5.00 lakhs cusecs for design discharge.

#### **4. Presentation by Hydrology Directorate – I of CWC**

- 4.1** Member (WR) then requested the Director (Hydrology-I) to indicate their views. Director (Hydrology-I) explained that the two inter-linked problems were (i) what was the peak discharge in September 1980 flood and (ii) what should be design flood for Neradi barrage ? In regard to September 1980 flood, he said that the method as adopted by Andhra Pradesh was theoretically sound and a well accepted procedure. He cited the specific WMO publication namely, “Technical Note No. 90” Measurement of peak discharges by Indirect Method” from which the method is drawn. The accuracy of estimates by this method however depends on the accuracy of the flood marks, river cross-sections data and the assumptions regarding coefficient of rugosity. Where likely errors in flood marks are of the same order as the observed falls in water surface, non-uniform flow (back-water) computations over longer river reach based on general fit of the flood marks would be more desirable.
- 4.2** Some back water studies made by the Andhra Pradesh for two river reaches from about 11 Kms D/S of Neradi barrage and from Neradi to near about Gunupur show that computed water levels for discharges of the order of 5 Lakhs and 5.19 lakhs are slightly more than the surveyed maximum water levels of September 1980 flood. These studies thus indirectly show that maximum discharge during September 1980 floods could be of the order of 4.5 lakhs near Neradi, subject of course to the accuracy of the basic data, about rugosity and sub-division of river cross section etc.
- 4.3** The incomplete information available from the CWC forecasting site at Gunupur was also scrutinised in Hydrology Directorate. The slope of about 1 in 690 used by the field division appeared steeper than the general slope reported by Andhra Pradesh. Also, the field formation had indicated lower values of rugosity, therefore the Hydrology Directorate tried to extrapolate a slope roughness curve drawn from the few flat observations carried out at Gunupur during falling flood. This approximate scrutiny based on single cross section indicated that the peak discharge at Gunupur could be of the same magnitude as indicated in Para 4.2 for Neradi.
- 4.4** The main subjectiveness is one regarding value of Manning’s rugosity. The Andhra Pradesh studies have used a value of 0.03 for the channel portion, of 0.04 for the flank portion. Although the appropriateness of these values depends on the local conditions of the channel, these values prima-facie appeared reasonable.
- 4.5** The standard project flood as estimated by Andhra Pradesh was also scrutinised in Hydrology Directorate. Though the September 1980 storm was the highest recorded storm over the basin and gave two day catchment rainfall of about 9.8”, storms slightly larger than this storm have been experienced in the region. Although these latter storms could not be transposed to the project catchment because of the presence of orography and the paucity of data, it was considered reasonable to use a 2 day maximum rainfall of about 11.00” as the standard project storm for Vamsadhar a basin above Neradi. The Hydrograph derived by Andhra Pradesh for Neradi on the basis of information at Gunupur and the above storm rainfall has indicated the standard project flood to be about 5 lakh cusecs.
- 4.6** Considering all the information the Hydrology Directorate feels that the September 1980 flood at Neradi could have been of the order of 4.5 lakh cusecs.

Also since estimate for standard project is fairly consistent with the estimate of 4.5 lakh cusecs for September 1980 flood the Hydrology Directorate had recommended 5 Lakh cusecs as design flood for Neradi for planning purposes subject to more detailed studies including sub-

division of the catchment to be carried out by Andhra Pradesh before the final designs are taken up.

## **5. Presentation by CWC field organization.**

**5.1** Shri Mahana, Executive Engineer, Eastern Gauging Division, Bhubaneswar, Shri Jyoti the then Executive Engineer during 1980 floods of the same division and Shri Ramalingam, Superintending Engineer explained the position about gauge discharge observations of Vamsadhara.

**5.2** It was explained that the Gunupur site is a flood forecasting site at which normally only gauge are observed. Using the gauges of Upper sites at Gudari and Gummada the gauge at Gunupur is forecast. Similarly using observed Gunupur gauges the discharges at Gota barrage are forecast. Discharge observations made by float method at Gunupur are only for internal use and are not of the quality required even for preliminary purposes.

**5.3** During September 1980 floods the highest gauge post at Gunupur was submerged and a temporary gauge post was fixed there after and the peak stage of 87.67 which was recorded on this post was later corrected as 88.38 after the flood. A few float observations of velocity were taken on the receding flood. But the figure of 7.36 lakh cusecs indicated by them to Odisha were based on hydraulic calculations using the slope of water surface as surveyed after the flood over a reach of about 1.9 kms and a value of Mannings, of 0.022 based on their previous experience at comparatively much lower discharges. They also mentioned that flow calculations were very preliminary as these were based on single cross-section of the river.

## **6. Discussions**

The Position as presented was discussed briefly. Engineer-in-Chief, Odisha mentioned that flood marks of 1980 flood still exist in the Odisha portion and it would be useful to verify the flood marks and levels as used by Andhra Pradesh. It also came out that whereas all Andhra Pradesh river cross-sections are based on GTS bench mark at a place near Gotta, the levels for the CWC Gunupur site are perhaps on a local bench mark. It was felt that all levels be reduced to a common datum connected to a single GTS mark by surveys if required.

Member (WR) summarized that the water levels, cross sections and the assumptions regarding rugosity etc. are the basic data and it is necessary that these are accepted by all after field verification etc.

## **7. Decision**

As a result of the discussions the following decisions were taken :

- (i) Officers of CWC in association with the concerned officers of Odisha and Andhra Pradesh would immediately inspect the river reach near about Neradi to Gunupur and ascertain the hydraulic conditions in the river bed and flanks so as to reach a better judgement on the value of rugosity coefficient 'n' and observed flood marks of the 1980 floods.
- (ii) The CWC field officers would connect the CWC gauging sites at Gunupur and Kashinagar to the common GTS bench mark which has been used in the Andhra Pradesh survey of the river cross sections. During this survey temporary bench marks on both the banks of the river would be established near Gunupur and Neradi. The Andhra Pradesh and Odisha field engineers would be associated with the surveys.

- (iii) The Odisha engineers would if necessary verify one or more river cross-sections as surveyed by Andhra Pradesh. They would also connect up 1980 flood marks after field inspections at (i) and (ii) above is over Andhra Pradesh engineers would be associated with these surveys.
- (iv) After the completion of above field inspection and surveys the CWC would review the present estimates of the maximum discharge for the 1980 floods if possible. A review of the design flood for Neradi Barrage could thereafter be carried out if so necessary with the information collected during the review of 1980 floods and other hydrology data.
- (v) Andhra Pradesh may supply to the Odisha Government details of all further studies conducted by them in regard to the September 1980 floods and the design flood and levels for Neradi barrage which are not included in the project report.

## **Annexure – I**

List of participants present :

Shri H. S. Krishnaswamy, Member (WR), CWC : Chairman

State of Andhra Pradesh:

Shri B. Rajendra Kumar, Engineer-in-Chief

Shri J. Raja Rao, Commissioner of Projects and Ex-Officio Secretary, Irrigation Deptt.

Shri P. Pattabhi Ram, Superintending Engineer, Vamsadhara Project Circle, Srikakulam-I.

Shri N. R. Ranganathan, Superintending Engineer, (Investigations)

Shri V.V. Dharama Raju, Deputy Director, Hydrology and Statistics.

Shri C. Mrutyunjaya Rao, Executive Engineer, Vamasadhara Project Investigation Division, Amradalavasa, Srikakulam.

R. Lakshminarayana, Asst. Res. Officer, Hydrology & Statistics, Office of the Engineer-in-Chief, Hyderabad.

P.V.N Raju, Dy. Executive Engineer, Vamsadhara Project Investigation, Amradalavalasa, Srikakulam.

State of Odisha

Shri K. T. Subudhi, Engineer-in-Chief, Irrigation, Odisha, Bhubaneswar.

Shri M.L. Lath, Superintending Engineer, Technical Unit.

Central Water Commission

Shri S. N. Chattopadhyay, Chief Engineer (TE), Sewa Bhavan, New Delhi.

Shri A.D. Mohile, Director (Hydrology-I), Central Water Commission, Sewa Bhavan, New Delhi.

Shri B. B. Karajagi, Director (TE-II) CWC, Sewa Bhavan, New Delhi.

Shri J. Ramalingam, Superintendng Engineer, HO & FF (S) Circle, CWC, Hyderabad.

Shri B. Pyda Raju, Deputy Director (FCD-II), Sewa Bhavan, New Delhi.

Shri C.D. Khoche, Deputy Director (TE-II), Sewa Bhavan, New Delhi.

Shri A. K. Mahana, Executive Engineer, Eastern Gauging Division, CWC, Bhubaneswar, Odisha

Shri L. N. Gupta, Deputy Director (Hydrology-I), CWC, Sewa Bhavan, New Delhi.

## **PROCEEDING OF THE MEETING HELD ON 9.2.1985 AT BHUBANESWAR ON VAMSADHARA PROJECT**

1. A meeting was held at Bhubaneswar on 9.2.85 to discuss the outstanding technical issues regarding Vamsadhara Project Stage-II proposed by the Government of Andhra Pradesh. The meeting was attended by the officers as indicted in the Annexure appended.
2. The most important issue was regarding the value of the flood peak to be adopted for the design of the barrage and calculating backwater profile. After reviewing the previous studies conducted in this regard, it was agreed that the barrage should be designed for a peak flood of six lakhs cusecs at the Neradi site.
3. The afflux bunds being located in Odisha territory, it is necessary that the alignment is proposed by the local officers taking into consideration mandatory points and keeping in view the guide lines of the Central Water Commission regarding the alignment.
4. After the alignment is made available by the officers of Odisha to the officers of the Government of Andhra Pradesh, the studies of back water profile will be carried out by the Government of Andhra Pradesh and made available to the Government of Odisha and Central Water Commission. For this purpose joint cross sections taken during 1984 by the officers of the Government of Odisha and Government of Andhra Pradesh will be adopted. The discrepancies regarding the values of observed flood marks and their connection with GTS Bench Mark are no longer relevant.
5. Government of Odisha will supply alignment of the flood banks in about three month's time.
6. After dividing the channel and over bank, the values of 'n' already decided that is 0.04 for over bank and 0.03 for main channel will be adopted. The inconsistencies noticed in the division of the channels into main channel and over bank will be jointly discussed between the officers of the Government of Odisha and Govt. of Andhra Pradesh before computations for back water are carried out. This will be jointly decided at site by the officers of the two States not below the rank of Superintending Engineers in the month of April 1985.
7. The next major issue was regarding the drainage congestion on the country side due to the construction of barrage and creation of a pool, the levels of which may not permit the country side water to drain into the river. It was decided that arrangement should be made for draining this water to the downstream of the barrage, for which suitable provision should be made in the project proposals. One suggestion is to provide catch drain and discharge the drainage water into the river downstream of the barrage.
8. The design of the flood bank will be as per the criteria of the Central Water Commission and if required laboratory tests of material may be carried out for finalization of the design.
9. The next major point was regarding the submergence. As per present proposal, it was indicated that at pond level the submergence was 98 acres excluding river bed.

However, additional land would be required for the afflux bunds and catch drains and the actual extent of acquisition will depend on the alignment of flood banks and borrow areas and back water profile and will be calculated after computations are ready as given in para 3.4.5 and 6. It needs also to be mentioned that certain amount of temporary submergence under flood conditions is likely to result, but it is expected that this will last for 10 to 12 hrs. only during the floods. All issues regarding submergence have to be discussed and settled at higher level.



10. The rules of regulation of the barrage would be drawn up by the Government of Andhra Pradesh in consultation with the Government of Odisha and Central Water Commission. This can be done independently of the clearance of the Project.

Sri N. K. Sarma, Member (WR), Central Water Commission thanked the Engineer-in-Chief, Irrigation, Odisha, Commissioner for Projects and Ex-Officio Secretary to the Government of Andhra Pradesh and Engineer-in-Chief, Andhra Pradesh and other officers for the spirit of co-operation shown in resolving the long standing technical issues.

**(D. Rajendrakumar)**  
Engineer-in-Chief,  
Andhra Pradesh

**(B. Patnaik)**  
Engineer-in-Chief, Odisha

**(N. K. Sarma)**  
Member, WR,  
Central Water Commission.

## **ANNEXURE**

**List of officers present during the meeting taken on 9.2.1985 at Bhubaneswar, in connection with Vamsadhara Stage-II Project.**

### **Andhra Pradesh**

| <b>Sl. No.</b> | <b>Name of the Officer</b> | <b>Designation</b>   |
|----------------|----------------------------|--|
| 1.             | Sri. J. Raja Rao           | Commissioner for Project Formulation & Ex-Officio Secretary to Govt. of Andhra Pradesh.            |
| 2.             | Sri D. Rajendra Kumar      | Engineer-in-Chief, Irrigation Deptt. Andhra Pradesh.   |
| 3.             | Sri N. R. Ranganathan      | Chief Engineer, Srisailem Project.   |
| 4.             | Sri P. Pattavi Ram         | Superintending Engineer, Vamsadhara Project Circle, Srikakulam                                     |
| 5.             | Sri V. V. Dharam Raju      | Dy. Director, Hydrology & Statistics, Investigation Wing Govt. of Andhra Pradesh.                  |
| 6.             | Sri C. R. Arjunan          | Executive Engineer, Investigation.   |
| 7.             | Sri A. Jaganadha Rao       | Executive Engineer, Vamsadhara Project Inv. Division.  |
| 8.             | Sri C. Mrutyunjaya Rao     | Executive Engineer, Vamsadhara Project on Hiramandalam.  |
| 9.             | R. Lakshminarayan          | Asst. Research Officer, Hydrology & Statistics Wing.   |
| 10.            | Sri P.V. N. Raju           | Dy. Executive Engineer, Vamsadhara Project Circle Inv. Sub-Division, Hiramandalam Srikakulam, A.P. |

### **INDIAN METEOROLOGICAL DEPARTMENT BHUBANESWAR.**

|    |                |   |
|----|----------------|---|
| 1. | G. Arunachalam | Director, Indian Meteorological Deptt. Orissa, Bhubaneswar. |
|----|----------------|---|

### **CENTRAL WATER COMMISSION, NEW DELHI**

|    |                  |  |
|----|------------------|--|
| 1. | Sri N. K. Sarma  | Member (WR) & Ex-Officio Addl. Secretary to Govt. of India, New Delhi. |
| 2. | Sri A.D. Mohile  | Director, Hydrology-I, New Delhi.                                      |
| 3. | Sri A. K. Mahana | Executive Engineer, Eastern Gauging                                    |

## **ODISHA STATE**

- |    |                     |  |
|----|---------------------|--|
| 1. | Sri B. C. Patnaik   | Engineer-in-Chief, Irrigation                      |
| 2. | Sri B. P. Mohanty   | Chief Engineer, Designs.                           |
| 3. | Sri K. M. Patnaik   | Director, Hydro Electric, Design.                  |
| 4. | Sri M. K. Lath      | Superintending Engineer, Technical Unit.           |
| 5. | Sri R. K. Das       | Executive Engineer, Planning.                      |
| 6. | Sri M. D. N. Sahu   | Executive Engineer, Chikiti Irrigation<br>Division |
| 7. | Sri A. R. Satapathy | Asst. Engineer-in-Chief, Irrigation                |

Division, Bhubaneswar.

## **MINUTES OF THE MEETING HELD ON 25.8.1985 AT BHUBANESWAR ON VAMASADHARA PROJECT STAGE- II**

A meeting was held at Bhubaneswar on 25.8.85 to discuss the technical aspect of backwater calculations, Barrage Design and Flood Banks. It was decided as follows:-

- 1) The observed M.F.L of +74.22 m during September 1980 flood at Neradi Barrage site was to be increased as the Odisha Officers pointed out that the observed M.F.L. was recorded at a time when number of breaches occurred thereby causing a reduction in the water level at the Neradi Barrage site. Odisha Officers suggested that the M.F.L. of 74.40m be adopted which was agreed.
- 2) The 'Cd' adopted as 2.95 for a submergence ratio of 94.56% for design of waterway for barrage was considered by the Odisha officers as on the higher side as the 'Cd' rating curve was very sensitive to drowning in this reach. As such after discussions it was decided that a 'Cd' of 2.8 will be adopted instead of 2.95 for a submergence ratio of 94.56% while designing the barrage.
- 3) The revised back-water calculations and revise Barrage design calculations adopting the above decisions are to be furnished to Odisha Government.

**Sd/-  
(D. Rajendra Kumar)  
Engineer-in-Chief,  
Irrigation  
Andhra Pradesh.**

**Sd/-  
(B.C. Patnaik)  
Engineer-in-Chief,  
Irrigation  
Odisha**

**Sd/-  
(N. K. Sarma)  
Chairman  
Central Water commission,  
New Delhi**

**No. 1/4/87-P.1**  
**Government of India**  
**Ministry of Water Resources**  
**Shram Shakti Bhawan, Rafi Marg, New Delhi- 110001**

**Dated the 4<sup>th</sup> February 1988**

To

1. The Secretary  
Government of Andhra Pradesh, Irrigation & CAD Department, Hyderabad.
2. Commissioner-cum-Secretary to Govt.  
Irrigation and Power Department, Government of Odisha, Bhubaneswar.

**Subject :** Minutes of the meeting of the Chief Ministers of Andhra Pradesh and Odisha convened by the Union Minister of Water Resources on 15.1.1987 regarding Vamsadhara Project Stage-II of Andhra Pradesh.

Sir,

A copy of the minutes of the meeting convened by Union Minister of Water Resources with Chief Ministers of Andhra Pradesh and Odisha on 15.1.1987 at New Delhi to discuss the Inter State issues involved in the Vamsadhara Project, Stage-II of Andhra Pradesh is sent herewith for information and record. The text of the minutes has been agreed to by both the State Governments vide Government of Odisha's Telex No. 444/CM dated 22.1.1987 and Government of Andhra Pradesh's endorsement No. 1189/GV2/81-240, dtd. 21.1.1988.

Yours faithfully,

(Ramesh Chandra)  
Commissioner (Projects)

**MINUTES OF THE MEETING CONVENED BY UNION MINISTER OF WATER RESOURCES WITH THE CHIEF MINISTERS OF ANDHRA PRADESH AND ODISHA ON 15.1.1987 TO DISCUSS THE INTER STATE ISSUES INVOLVED IN THE VAMSADHRA PROJECT STAGE-II OF ANDHRA PRADESH**

Shri N. T. Rama Rao, the Chief Minister of Andhra Pradesh and Shri J. B. Patnaik, the Chief Minister of Odisha, in the meeting convened by Shri B. Shankaranand, Union Minister of Water Resources on 15<sup>th</sup> January 1987 at Shram Shakti Bhavan, New Delhi, were agreeable to taking up the Neradi Project on Vamsadhara River, if it could be found feasible by the engineers of both the States and the engineers of the Central Water Commission that the project could be implemented by acquiring only 106 acres of land in Odisha keeping in view the interests of Odisha as envisaged in the Agreement of 1961 between the two States. The Chief Minister of Andhra Pradesh even agreed to redesign and modify the parameters of the project so as to limit the land acquisition in Odisha to the extent of 106 acres only.

**(N. T. Rama Rao)**  
**Chief Minister,**  
**Andhra Pradesh**  
**15.1.1987**

**(J. B. Patnaik)**  
**Chief Minister,**  
**Odisha**  
**15.1.1987**

**(B. Shankaranand)**  
**Union Minister of**  
**Water Resources**  
**15.1.1987**

# **MINUTES OF THE INTER STATE MEETING HELD ON 8<sup>th</sup> APRIL 1988 WITH THE STATE ENGINEERS OF ANDHRA PRADESH AND ODISHA TO DISCUSS THE INTER STATE ISSUES INVOLVED IN THE VAMSADHARA PROJECT STAGE – II**

## **1.0 Background**

- 1.1 A meeting was convened by the Chief Engineer (PAO) Central Water Commission with the State Engineers of Andhra Pradesh and Odisha on 8<sup>th</sup> April 1988 to discuss the inter- state issues involved in the Vamsadhara Project Stage-II

A list of officials present during the meeting is enclosed.

- 1.2 At the meeting convened by the Union Minister of Water Resources with the Chief Ministers of Andhra Pradesh and Odisha on 15<sup>th</sup> January 1987 at New Delhi the States of Andhra Pradesh and Odisha were agreeable to taking up the Neradi Project (Vamsadhara Stage-II) if it could be found feasible by the Engineers of both the State and the Engineers of CWC that the Project could be implemented by acquiring only 106 acres of land in Odisha keeping in view the interest of Odisha as envisaged in the agreement of 1961 between the two States.

- 1.3 With a view to limit the extent of land required for acquisition in Odisha territory to within 106 acres, the Government of Andhra Pradesh have formulated a proposal to construct a flood protection wall 3.5 kms long upstream of the Neradi Barrage in Odisha territory. A catch drain is also proposed for draining the water behind the protection wall. This proposal was forwarded by the Government of Andhra Pradesh both to CWC and the Government of Odisha in Feb,87.

## **2.0 Discussion & Conclusions**

- 2.1 The proposals submitted by the government of Andhra Pradesh to construct the flood protection wall to limit the acquisition of land in Odisha due to Neradi Barrage to 106 acres were examined during the meeting and the following aspects were considered.

### **2.2 AFFLUX**

The Afflux due to Neradi Barrage as computed by Andhra Pradesh was considered and was agreed that the effect of this afflux beyond 3 km of protection wall upstream of the Barrage was within permissible limit.

### **2.3 DESIGN OF PROTECTION WALL**

The section of the proposed protection wall has been duly examined by the Barrage and Cannal Dte's of CWC and is found to be technically sound and feasible. The stability of the wall in sliding was also found to be in order. The Engineer-in-Chief, Government of Odisha however desired that the detailed design of the wall may be carried out by CWC based on properties of the foundation solid. Chief Engineer (PAO) informed that the designs have already been checked by the concerned Dte. Of CWC with regard to techno-economic clearance of the project. The detailed design of the wall can be taken up by CWC after techno-economic clearance of the project.

### **2.4 ADEQUACY OF CATCH DRAIN**

The Engineer-in-Chief, Government of Odisha expressed doubt regarding the capacity of catch drain and desired to see the design calculations based on the guidelines provided by the Odisha Government. The Chief Engineer, Andhra Pradesh agreed that the calculations would be furnished to CWC and Government of Odisha before 30<sup>th</sup> April for examination.

### **2.5 INSPECTION PATH**

Inspection path along the catch drains as suggested by Engineer-in-Chief Odisha along catch drain was agreed to by Chief Engineer, Andhra Pradesh.

## **2.6 FOOT BRIDGE**

Chief Engineer, Andhra Pradesh agreed to provide two foot bridges over the catch drain to facilitate access and inspection of the protection wall.

## **2.7 OUTFALL STRUCTURE**

It was decided that the gated sluice will be provided for the catch drain at its end downstream of the Barrage. This will be suitably protected by the guide bunds.

**3.0** The Engineer-in-Chief, Odisha agreed that the project proposal can be finalized after the capacity of catch drain is checked by the CWC and Odisha Government. The Chief Engineer PAO indicated that this aspect will be finalized soon after Andhra Pradesh submitted the details. As the other technical aspects have already been found acceptable by CWC and Odisha Government, it should be possible to put up this project in the next Advisory Committee Meeting.

3.1 The Chief Engineer, Andhra Pradesh, was advised to modify and finalise the cost estimate of the Project considering the proposed protection wall and the structures now proposed by Odisha Government / CWC.

### **List of Officers Attended**

| <b>Sl. No.</b> | <b>Name of the Officer</b> | <b>Designation</b> |
|----------------|----------------------------|--------------------|
|----------------|----------------------------|--------------------|

#### **CENTRAL WATER COMMISSION**

|    |                      |                             |
|----|----------------------|-----------------------------|
| 1. | Sri Z. Hasan         | C.E. (PAO)                  |
| 2. | Sri T. S. Murthy     | Director PA (S)             |
| 3. | Sri N. Suryanarayana | Director BCD (NWS)          |
| 4. | Sri K. P.S. Senger   | Dy. Director PA (s)         |
| 5. | Sri B. K. Sinha      | Extra Asst. Director PA (s) |

#### **GOVT. OF ANDHRA PRADESH (IRRIGATION DEPTT.)**

|    |                       |               |
|----|-----------------------|---------------|
| 1. | Sri K. Ramakishna Rao | C.E. (Inv.)   |
| 2. | Sri C. R. Arjunarao   | E.E. (Inv.)   |
| 3. | Sri P. L. N. Sastry   | Dy. Ex. Engr. |

#### **GOVT. OF ODISHA (IRRGN. DEPTT.)**

|    |                |                   |
|----|----------------|-------------------|
| 1. | Sri D. Mishra  | Engineer-in-Chief |
| 2. | Sri M. L. Lath | S.E. / L.O.       |

## **SUMMARY RECORD OF DISCUSSIONS OF THE INTER-STATE MEETING ON VAMASADHARA STAGE-II PROJECT HELD ON 8.3.91**

A meeting to discuss and resolve Inter-State issues on Vamsadhara Stage-II project of Andhra Pradesh was held on 8.3.91 in the chamber of Secretary (WR), New Delhi. The list of participants is at Annexure-‘I’.

Secretary (WR) welcomed the participants to the meeting. It was noted that the Secretary, Irrigation, Government of Odisha could not attend the meeting due to the Budget session of the State Assembly and had sent a letter through their Liaison Officer in New Delhi giving comments of the Government of Odisha on the proposal of Vamsadhara Stage-II project of Andhra Pradesh. A copy of the letter was circulated in the meeting.

Secretary (irrigation), Government of Andhra Pradesh indicated that the problem of flooding upstream of proposed Neradi Barrage had earlier been discussed and proposals of construction of Masonry wall had been finalized in consultation with the Chief Engineer, Government of Odisha. He offered to extend the embankment upto 10.5Km in the upstream as earlier envisaged, if the Government of Odisha so desires but it may then unavoidably involve more area. Secretary (WR) stated that in view of the willingness of the Government of Andhra Pradesh to adopt any of the alternatives it is for the Government of Odisha to immediately indicate their preference.

Regarding diversion of more water than its share by Andhra Pradesh, he said that water account will be maintained and it is only that during the floods additional water will be diverted. A bilateral mechanism between the Governments of Andhra Pradesh and Odisha can be evolved to monitor the operations of the barrage. Secretary (WR) directed that Central Water Commission while clearing the project will put up obligatory conditions to ensure that sharing formula agreed to between the States adhered to.

As regards model studies it was appreciated that while flood moderation or back water studies can be best studied by mathematical model, physical model studies are generally required if the river is either mobile or having unstable regime. It was agreed that a team of the officers of the Government of Andhra Pradesh, Odisha and Central Water Commission would visit the site and submit its report by the end of April, 91, about necessity of taking up model studies and purpose thereof.

Concluding the discussions Secretary (WR) expressed that in view of nature of issues involved final view may be so taken that it would be possible to take up the project for consideration in the next meeting of the Advisory Committee to be held in May, 1991.

The meeting ended with a vote of thanks to the Chair.

### **ANNEXURE – I LIST OF PARTICIPANTS**

#### **Ministry of Water Resources.**

1. Shri M. A. Chitale, Secretary (WR) – (in Chair)
2. Shri S. R. Sahasrabudhe, Commissioner (PR)
3. Shri S. K. Agrawal, Jt. Commissioner (PR).

#### **Central Water Commission**

2. Shri C. Sudhindra, Member (R&M):
3. Shri T. S. Murthy, Chief Engineer (PAO)
4. Shri K. C. Manchanda, Director (PA-South).



**Government of Andhra Pradesh**

1. Shri C. L.N. Sastry, Commissioner for Project Formulation and Ex-Officio Secretary, Irrigation and CAD.
2. Shri C. H. Venkateshwarlu, Supdt. Engineer, Inter-State and Water Resources.

**Government of Odisha**

1. Shri H. S. Bawa, Liasion Officer – (Irrigation).

## **SUMMARY RECORD OF THE INTER-STATE OFFICIAL LEVEL MEETING BETWEEN A.P. AND ODISHA STATES HELD BY MEMBER (P&P), CWC ON 22.11.91 TO CONSIDER VAMSADHARA STAGE-II AND JHANJAVATI PROJECTS OF ANDHRA PRADESH**

### **List of Officers who attended the meeting is at Annexure-I.**

The Member (P&P) CWC welcoming the officers of the Govts. Of A.P. and Odisha, stated that this meeting has been convened to resolve the inter-state issues involved in the Vamsadhara Stage-II and Janjhavati Reservoir Projects of A.P. which have been pending for a long time. He hoped that during this meeting these issues could be resolved amicably to enable the state Govt. of A.P. to go ahead with the projects.

Thereafter these two projects were discussed and decisions were taken as under:-

#### **1. Vamsadhara Project Stage-II:**

The Head works viz. Neradi Barrage involves construction of works in Odisha territory. The Govt. of A.P. had proposed construction of masonry wall to restrict the extent of land required in Odisha 42.92 ha (106 Acres) as per Interstate agreement Govt. of Odisha had to concur to the proposal.

The Secretary, Water Resources had earlier convened a meeting on 8<sup>th</sup> March 1991 and the following decision were taken :

- (i) The Odisha Govt. would indicate immediately their preference to the construction of masonry wall in restricted length upstream of Neradi barrage to restrict acquisition of land in Odisha territory to 42.92 ha (106 acres) in the light of the earlier interstate agreement of July 1961 and 18<sup>th</sup> Jan.1987 or extend the embankment upto 10.5 km in the upstream to prevent flooding upstream areas but to involve acquisition of additional land in Odisha.

The above points were discussed during the meeting and the representative of the Odisha Govt. indicated that as per interstate agreement, the acquisition of land for works in Odisha territory should be restricted to 42.92 ha (106 acres). Keeping this in view, the proposal for the construction of masonry wall 3.8 Km long was acceptable to the Govt. of Odisha.

- (ii) A team of officers of Govt. of A.P., Odisha and CWC would visit the site and submit the report by the end of the April 91 about the necessity for taking up the model studies and purpose thereof.

The representative of Govt. of Odisha indicated that this joint inspection proposed could not be held because a suitable date convenient to both Govt. of A.P. and Odisha could not be finalized because of severe flood incidents & visit of world Bank team. It was agreed that the joint inspection would be carried out from 21<sup>st</sup> December to 23<sup>rd</sup> December 1991 for which Govt. of A.P. will make necessary arrangements.

#### **2. Jhanjavati Reservoir Project**

Member (P & P) observed that this project was considered by the Advisory Committee as early in March 1981 but is pending mainly on account of concurrence of Govt. of Odisha to the proposals of the Govt. of A.P. specially on the submergence in Odisha territory. Joint surveys by both Govts were conducted which indicated that submergence in Odisha territory is 396.4 ha (979.29 acres) against 279 ha (690 acres) considered in the project proposals. Subsequently as desired by the Govt. of Odisha, the A.P. Govt. got the surveys carried out by the Survey of India. As per these surveys, the submergence in Odisha territory upto FRL 146.2 M (480 Ft.) is

406.40 ha (1003.81 acres). The Govt. of A.P. stated that the details of submergence as surveyed by the survey of India were forwarded to the Govt. of Odisha vide their letter No. 64/ Irr. 1/86-17 dated 11<sup>th</sup> Oct. 1990. They also confirmed that the total submergence upto FRL 146.2 M is 971.25 ha (2399 acres) only as was indicated in earlier proposal.

**After detailed discussions following decisions were taken :-**

The FRL for the Janjhavathi Reservoir has already been agreed to by both the Government as FRL 146.2 M (480 ft.). The survey of India has done the surveys for computation of the area of submergence upto this FRL in the State of Odisha and the details of areas of submergence along with the prints of survey maps have been supplied by them, which in turn have been forwarded by the Govt. of A.P. to Govt. of Odisha in Oct. 1990. The area of submergence in Odisha as computed by the survey of India is 406.40 ha. The representatives of Govt. of Odisha reiterated that while the concurrence of Govt. for this 406.40 ha which will be expedited, the submergence of the area should not exceed in any case 406.40 ha which was agreed to by the Govt. of A.P. The details for the provision to be made for land acquisition rehabilitation etc. would be furnished by the Govt. of Odisha before 30.03.1992 to Govt. of A.P. so that the estimates can be firmed up. Simultaneously supply of data requested for by Govt. of Odisha regarding area of submergence in Andhra Pradesh will be expedited by the Govt. of Andhra Pradesh to Govt. Odisha.

List of officers who attended interstate official level meeting of State Govt. of A.P. and Odisha convened by Member (P & P) CWC on 22.11.91 to discuss amsadhara Project St. II and Jhanjavathi Reservoir of A.P.

**Central Water Commission**

- |                     |   |  |
|---------------------|---|--|
| 1. Sh. C. Sudhindra | : | Member (P & P) & Ex-Officio Additional Secretary to Govt. of India (in chair). |
| 2. Sh. T.S. Murthy  | : | Chief Engineer (PAO)   |
| 3. Sh. M.C. Dhawan  | : | Director (PAS)   |
| 4. Sh. K. Raman     | : | Dy. Director (PAS)   |

**ANDHRA PRADESH STATE**

- |                            |   |  |
|----------------------------|---|--|
| 1. Sh. C.L. N. Sastry      | : | Commissioner-cum-Secretary to Govt. of A.P. (Irr. Department). |
| 2. Sh. V.Rama Krishana Rao | : | Chief Engineer (Investigation) Irrigation Department.          |
| 3. Sh. C. Bhaskara Naidu   | : | S.E. Vamsadhara Project Circle.                                |

**ODISHA STATE**

- |                     |   |  |
|---------------------|---|--|
| 1. Sh. A.K. Dalua   | : | Joint Secretary to Govt. of Odisha (Deptt. of Irrigation). |
| 2. Sh. K.M. Patnaik | : | Chief Engineer (CPU) Irrigation Department.                |
| 3. Sh. H.S. Bawa    | : | Liasion Officer, Govt. of Odisha, New Delhi.               |

## **MINUTES OF DISCUSSION BETWEEN HON'BLE CHIEF MINISTER, ODISHA AND HON'BLE CHIEF MINISTER, ANDHRA PRADESH AT BHUBANESWAR ON JUNE 10, 1992**

**Present : As in Annexure.**

Initiating the discussion, Hon'ble Chief Minister, Odisha gave a brief resume of the unresolved issues between Odisha and Andhra Pradesh and suggested that the issues should be settled in a spirit of amity. Hon'ble Chief Minister Andhra Pradesh reciprocated these feelings. Thereafter each issue was discussed in detail and the following decisions were taken.

### **1. Neradi Barrage**

Hydrology data upto 1991 and mathematical model studies will be supplied by the irrigation Department Andhra Pradesh within 10 days. Mathematical Model has a linkage with the aggradations of the river bed which in turn will affect the Odisha portion by floods beyond the stipulated 3 Kms. Andhra Pradesh Engineer however, assured that the backwater effect will be limited to 3 Kms. Sharing of water would be on 50 : 50 basis. It was agreed in principle that Odisha Government would have no objection to the Government of Andhra Pradesh going ahead with construction of the barrage, but the height of the barrage would be subject to mathematical model studies<sup>11</sup> and hydrological data.

### **2. Jhanjavati Project :**

A copy of the project report will be supplied by the Irrigation Department, Andhra Pradesh to Chief Secretary, Odisha. Joint boundary survey of the 10 villages involved in submergence including 3 villages under dispute will start immediately.

### **3. Bahuda Project**

It was agreed that the headworks of the project will be located in Andhra Pradesh in modification of the 1978 agreement, which stipulated location of the headworks in Odisha. Since, a portion of the canal will pass through Odisha, adequate water will be allocated from the canal system for Irrigation inside Odisha.

### **4. Kalingadala Project**

It was agreed that pending finalization of the joint survey which will be taken up immediately, the land in dispute will be treated provisionally as Odisha government land and will be leased out to the government of A.P. The Govt. of A.P. can go ahead with construction on that basis.

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<sup>11</sup> Subsequently a meeting took place between the Chief Minister of Orissa and Irrigation Minister of Andhra Pradesh on 15.2.2001 wherein Government of Orissa Officers further pointed out that only mathematical model studies are not enough. Physical model studies are to be conducted, which will be more reliable. It was agreed that CWPRS, Pune may be associated with the conduct of physical model studies from the beginning and shall have access to the data being used. Later the State of Andhra Pradesh proposed the construction of a Side Weir on its side of the river as a temporary measure to enable the State of Andhra Pradesh to draw about 8 TMC of Water to meet its immediate irrigation requirement. The aforesaid proposal of the State of Andhra Pradesh was opposed by the State of Orissa and therefore, the State of Orissa filed a complaint as envisaged under Section 3 of the Inter-State River Water Disputes Act, 1956, with the Ministry of Water Resources, Government of India on 14.2.2006 seeking constitution of an Inter-State Water Disputes Tribunal and to refer the water dispute between the State of Orissa and Andhra Pradesh in respect of inter-State river Vansadhara and its valley for adjudication to it. The Tribunal was constituted on 24.02.2010.

**5. Puriasahi M.I. Project :**

It was clarified that Madala river is not Mahendratana for which there is an inter-State agreement. No inter-State agreement exists for the sub-basin or basin of Madala river. However, Puriasahi M.I.P in Odisha will continue to be diversion weir and there will be no impounding of water to affect the Padhigaon Project in Andhra Pradesh adversely.

**6. Power Projects :**

The question of harnessing hydro-power potential of the inter-state Machhkund Sileru river system for the benefit of both the States was discussed. It was agreed in principle that the generating capacity of the existing Power Stations and the new Stations proposed to be executed on the inter-State Sileru Machhkund river shall be shared on 50:50 basis. For this purpose a statutory Board along the lines of Tungabhadra Control Board shall be constituted and the existing Power Projects (on Machhkund-Sileru river system) both in Andhra Pradesh and Odisha shall be transferred to the control of this Board for management. This Board will be constituted with the representatives of both the State Government as well as the Government of India. No cost shall be paid by either of the State Governments for transfer of the existing projects. The Board shall also take up construction of new Power Projects on 50:50 cost sharing basis between both the State Governments.

It was felt that constitution of this Board will not only ensure optimum utilization of the hydro-power potential of the inter-state Machhkund-Sileru river system, but also facilitate amicable settlement of outstanding disputes between both the State Governments as well as the State Electricity Boards.

Shri N. Tata Rao, Advisor, Energy to Chief Minister, Andhra Pradesh will immediately formulate a paper on this arrangement whereafter details shall be worked out by the Chief Secretaries of both the States and will be put up to both the State Governments for rectification.

It was agreed that works on the 2 x 30 MW power station at Chitrakunda (Balimela) may be resumed immediately by A.P.S.E.B. This will form part of the proposed joint control Board.

Sd/-  
B. Patnaik  
*Chief Minister of Odisha*  
Dt. 10.6.92

Sd/-  
N. J. Reddy,  
*Chief Minister of Andhra Pradesh*  
Dt. 10.6.92

**ANNEXURE**

**LIST OF PARTICIPANTS**

**Government of Andhra Pradesh**

1. Shri N. Janardhana Reddy  
Hon'ble Chief Minister
2. Shri K. Madhava Rao  
Principal Secretary to C.M.
3. Shri P.V. Rao,  
Principal Secretary, Irrigation to  
C.M.
4. Shri N. Tata Rao  
Adviser to C.M.
5. Shri Kesava Reddy

**Government of Odisha**

1. Shri Biju Patnaik  
Hon'ble Chief Minister
2. Shri Bijoy Mohapatra  
Hon'ble Minister, Irrigation & P.A.
3. Shri Surendranath Nayak,  
Hon'ble Minister, Revenue
4. Shri Kalandi Ch. Behera  
Hon'ble Minister of State, Energy
5. Shri R. K. Rath,

- |    |  |     |   |
|----|--|-----|---|
|    | Chief Security Officer to C.M.                                   |     | Chief Secretary   |
| 6. | Shri V. Ananda Rao, Commissioner,<br>Land Records & Survey.      | 6.  | Shri S. Sundararajan,<br>Development Commissioner.        |
| 7. | Shri C. I. N. Shastry<br>Commissioner for Project<br>Formulation | 7.  | Shri P. M. Mohapatra<br>Principal Secretary to C.M.       |
| 8. | Shri Ramakishan Rao<br>Chief Engineer (Investigation)            | 8.  | Shri S. R. Pal,<br>Principal Secretary, Revenue & Excise. |
|    |  | 9.  | Shri B. Dharmalignam<br>Director, Land Records & Surveys. |
|    |  | 10. | Shri Srinivas Rath, Secretary, Energy                     |
|    |  | 11. | Shri S. K. Mohapatra, Chariman, O.S.E.B.                  |
|    |  | 12. | Shri B. K. Bal, Addl. Secretary Energy                    |
|    |  | 13. | Shri M. M. Mohanty; Secretary, Irrigation                 |
|    |  | 14. | Shri B. S. N. Murthy<br>Engineer-in-Chief, Irrigation     |
|    |  | 15. | Shri S. N. Mishra, Chief Engineer,<br>Planning            |
|    |  | 16. | Shri A. K. Tripathy<br>Secretary, Rural Development.      |
|    |  | 17. | Shri P. K. Acharya,<br>Chief Engineer, Minor Irrigation   |

**AGREEMENT DATED 18<sup>th</sup> FEBRUARY 1892 BETWEEN THE GOVERNMENTS  
OF MYSORE AND MADRAS REGARDING NEW IRRIGATION WORKS**

**(PENNAR, PAPAGHNI, PALAR AND PONNIAR)**

GOVERNMENT OF MADRAS  
(Public works department)  
IRRIGATION

G.O.No.162-1

18<sup>th</sup> Feb., 1892

Irrigation works-Mysore State-Restoration / and Construction - Certain rules and schedules. Read the following paper:-

From General Sir H.N.D. PRENDERGAST, R.E.KCB., V.C., Officiating Resident in Mysore to the Chief Secretary to Government, dated Bangalore, the 15<sup>th</sup> January 1892, No.144/346-90.

With reference to correspondence ending with your letter political No.636, dated 16<sup>th</sup> December, 1890, I have the honour to forward, for the formal acceptance of the Government of Madras, a copy of the rules and schedules regarding the restoration and construction of irrigation works in Mysore, prepared by the Mysore<sup>12</sup> Darbar, which embody the arrangements which have been come to in an informal manner both by personal discussion and demi-official correspondence between the Chief Engineer, Madras<sup>13</sup> Irrigation Branch and the Chief Engineer in Mysore.

2. I shall be glad to be informed if the Madras Government agree with the rules proposed.
3. A copy of Colonel Bowen's letter on the subject is enclosed for information.

No.3-1 dated the 4<sup>th</sup> January, 1892.

**ENCLOSURES**

From Colonel C. Bowen, R.E. Secretary to the Government of Mysore, Public Works Department to the Assistant to the Resident in Mysore, dated Bangalore, the 4<sup>th</sup> January 1892-No.3-1.

With his letter No.1-A of 10<sup>th</sup> June 1890, the Diwan submitted to the Resident a memorandum on the subject of the restoration and construction of irrigation works in Mysore, the right to effect which without restriction had been disputed by the Madras Government. In that letter he urged the Resident to represent the matter in full to the Government of India, in view to a settlement of the points at issue.

2. Colonel Sir Oliver St. John informed the Diwan in April last that the Government of

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<sup>12</sup> Mysore is now part of Karnataka state.

<sup>13</sup> Territories of erstwhile Madras Presidency are now part mainly of Tamil Nadu and Andhra Pradesh. Rivers mentioned in this agreement either traverse through Tamil Nadu or Andhra Pradesh before merging in Bay of Bengal.

India would prefer the matter to be settled, if possible, by some understanding between Madras and Mysore, and before leaving Ootacamund, this year he arranged for a conference between officers of the two Governments. Under such circumstances the Darbar again made endeavours, in conference with the Madras Government, to arrive at an amicable understanding regarding our future irrigation operations, so that controversy might be obviated in regard to individual works and a sphere of operations, declared in Mysore projects should be absolutely untrammelled. At the same time restrictions to be accepted by the Darbar on certain classes of works on certain rivers and in certain valleys which might affect prejudicially Madras works beyond the frontier.

3. The rules and schedules which I now forward embody the arrangements which have been come to in an informal manner by personal discussion or by demi-official communications, and I am desired to request you will be good enough to move the Resident to now obtain from the Government of Madras their formal acceptance of the same. They will then be adopted by Mysore for future guidance of the irrigation officers.

4. Annexed to the final rules and schedules is printed the demi-official correspondence which led to the modification of the rules after they were first framed and discussed at Ootacamund in May last. These letters will show that the general terms of the settlement have, with one exception, been informally agreed to by both Governments.

5. The exception I allude to is that referred to in the secondary clause to rule V. The decision of the Government of India will be necessary on that point viz., the existence of a liability on the part of Mysore, on account of three large reservoirs now actually under construction, and if such liability exists the extent of it; but the definite acceptance by Madras of the rules and schedules as now drawn up is desirable before the controverted cases are specially referred.

Transferred to the Public Works (Irrigation) Department.

21<sup>st</sup> January, 1892.

Sd/  
( C J. F. PRICE )  
Chief Secretary

Order No.162-1 (Public Works), dated 18<sup>th</sup> February, 1892. Ordered that the following letter be sent.

(True copy or extract)

Sd/  
( W.C. LEWIS )  
Under Secretary to Government  
P.W.D. (Irrigation Branch)

To

The Chief Engineer for Irrigation, with copy of draft letter to the Resident.  
Political Department with draft letter to the Resident.  
Superintending Engineer, III Circle.



ANNEXURE TO G.O. NO.162-1  
(PUBLIC WORKS), Dated 18<sup>th</sup> February, 1892

Rules defining the limits within which no new irrigation works are to be constructed by the Mysore state without previous reference to the Madras Government.

IRRIGATION WORKS IN MYSORE STATE  
The Madras-Mysore Agreement of 1892

I. In these rules -

(1) "New Irrigation Reservoirs" shall mean and include such irrigation reservoirs or tanks as have not before existed or, having once existed, have been abandoned and been in disuse for more than 30 years past.

(2) A "New Irrigation Reservoir" fed by an anicut across a stream shall be regarded as a "New Irrigation Reservoir across" that stream.

(3) "Repair of Irrigation Reservoir" shall include (a) increase of the level of waste weirs and other improvements of existing irrigation reservoirs or tanks, provided that either the quantity of water to be impounded, or the area to be irrigated is not more than the quantity previously impounded, or, the area previously irrigated, by them; and (b) the substitution of a new irrigation reservoir for and in supersession of an existing irrigation reservoir but in a different situation or for and in supersession of a group of existing irrigation reservoirs, provided that the new work either impounds not more than the total quantity of water previously impounded by the superseded works, or irrigates not more than the total area previously irrigated by the superseded works.

(4) Any increase of capacity other than what falls under "Repair of Irrigation Reservoirs" as defined above shall be regarded as a "New Irrigation Reservoir".

II<sup>14</sup>. The Mysore Government shall not, without the previous consent of the Madras Government or before a decision under rule 4 below, build (a) any "New-Irrigation Reservoirs" across any part of the fifteen main rivers named in the appended Schedule A, or across any stream named in Schedule B below the point specified in column (5) of the said Schedule B, or in any drainage area specified in the said Schedule B or (b) any "New Anicut" across the streams of Schedule A, Nos. 4 to 9 and 14 and 15, or across any of the streams of Schedule B, or across the following streams of Schedule A, lower than the points specified hereunder:

|                        |  |
|------------------------|--|
| Across 1. Thungabhadra | - lower than the road crossing at Honahalli, |
| 10. Cauvery            | - lower than the Ramaswami anicut, and       |
| 13. Kabani             | - lower than the Rampur anicut.              |

III. When the Mysore Government desires to construct any "New Irrigation Reservoir" or any new anicut requiring the previous consent of the Madras Government under the last preceding Rule, the full information regarding the proposed work shall be forwarded to the Madras Government and the consent of that Government shall be obtained previous to the actual commencement of work. The

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<sup>14</sup> Provisions of this clause in respect of Cauvery and Tungabhadra rivers and their tributaries have been superseded by Decisions of Cauvery and Krishna Water Disputes Tribunals and are no longer valid.

Madras Government shall be bound not to refuse such consent except for the protection of prescriptive right already acquired and actually existing, the existence, extent and nature of such right and the mode of exercising it being in every case determined in accordance with the law on the subject of prescriptive right to use of water and in accordance with what is fair and reasonable under all the circumstances of each individual case.

IV. Should there arise a difference of opinion between the Madras and Mysore Government in any case in which the consent of the former is applied for under the last preceding rule, the same shall be referred to the final decision either of arbitrators appointed by both Governments, or of the Government of India.

V. The consent of the Madras Government is given to new irrigation reservoirs specified in the appended Schedule C, with the exception of the Srinivasasagara new reservoir across the Pennar, the Ramasamudram new reservoir across the Chitravati, and the Venkatesasagara new reservoir across the Papaghni. Should, owing to the omission of the Mysore Government to make or maintain these works in a reasonably adequate standard of safety, irrigation works in Madras, be damaged, the Mysore Government shall pay to the Madras Government reasonable compensation for such damage.

As regards the three new reservoirs excepted above the admissibility of any compensation from Mysore to Madras on account of loss accruing to Madras irrigation works from diminution of supply of water caused by the construction of the said works, will be referred to the Government of India whose decision will be accepted as final, and should such compensation be decided to be admissible, the decision of the Government of India as to the amount thereof will be accepted, after submission to them of the claims of Madras which would be preferred in full detail within a period of five years after the completion of said works.

VI. The foregoing rules shall apply as far as may be to the Madras Government as regards streams flowing through British territory in to Mysore.

#### SCHEDULE A

| Main Rivers                        | Remarks                                  |
|------------------------------------|--|
| 1. Tungabhadra                     |  |
| 2. Tunga                           | Tributary of Tungabhadra                 |
| 3. Bhadra                          | -do-                                     |
| 4. Hagari or Vedavati              | -do-                                     |
| 5. Pennar or Northern Pinakini     | ...                                      |
| 6. Chitravati                      | Tributary of Pennar or Northern Pinakini |
| 7. Papaghni                        | -do-                                     |
| 8. Palar                           | ....                                     |
| 9. Pennar * or Southern Pinakini   | .....                                    |
| 10. Cauvery                        | .....                                    |
| 11. Hemavati                       | -Tributary of Cauvery                    |
| 12. Lakshmantirtha                 | -do-                                     |
| 13. Kabani                         | -do-                                     |
| 14. Honhole (or Suvernavathi)      | -do-                                     |
| 15. Yagachi, upto the Belur bridge | Tributary of Hemavati                    |
| *Known as the "Ponniar" in Madras  |  |

## SCHEDULE B

**A list of the minor streams and catchments in Mysore territory on which no new irrigation reservoirs are to be built within the limits specified without previous reference to the Madras Government.**

| Sl. No. in Sch. A | Drainage    | S. No. on map | Minor branches                   | Defined limit on a stream below which or defined drainage area within which no new irrigation reservoirs are to be built without previous reference to Madras Government. | Distance from frontier as measured up the stream (approx) | Remarks   |
|-------------------|-------------|---------------|----------------------------------|---|---|---|
| 1.                | 2.          | 3.            | 4.                               | 5.  | 6.  | 7   |
| 1.                | Tungabhadra | 1(a)          | Charodi or Kumadvati             | Upto the bridge on this river on Honnali SHikarpur road.  | 10 miles  | -   |
|                   |             | 1.            | Sulikere-halla                   | The bund of Sulikere tank.  | 46 miles  | The Sulikerae tank seldom discharges. The stream joins the Tungabhadra in Mysore territory.   |
|                   |             | 2.            | Sagali-halla                     | Upto the boundary line of the Chanagiri taluk.  | 40 miles  | About this point there are numerous existing tanks, and the runoff from these smaller catchments are of no appreciable importance to floods in the Tungabhadra river. |
|                   |             | 3.            | Saratti-halla                    | As far as the boundary line of the Kakkargola and Avargola villages.  | 9.5 miles   | A stream of insignificant importance to floods in the Tungabhadra river. This stream joins the Tungabhadra river in Mysore territory.                                 |
|                   |             | 4.            | Branch of Sarattihalla from east | Upto Kadaji tank bund.  | 16.5 miles  | Catchment above the Kadaji tank, small and insignificant.   |
|                   |             | 5.            | North Hagari                     | Upto bondary of Chitaldrug taluk.   | 12.5 miles  | There are no existing Madras works on this branch of the Tungabhadra.   |
|                   |             | 6.            | Branch of                        | Upto Anaji tank   | 10 miles  | -do-  |

|    |                    |     |  |  |            |   |
|----|--------------------|-----|--|--|------------|---|
|    |                    |     | Hagari   | bund.  |            |   |
|    |                    | 7.  | Sokke-halla  | Upto Hoskere tank bund.  | 9 miles    | No existing Madras works on this stream before it joins the North Hagari. Catchments above Hoskere and Kyasenhalli tank very small and insignificant. |
|    |                    | 8.  | Branch of Sokke-halla                                  | Upto the Kyasenhalli tank bund.  | 9 miles    | -Do-  |
|    |                    | 9.  | Jiganhalli tank (Madras) catchment                     | The whole of the outlying bit of Mysore territory which drains into the Madras tank.   |            | This is an outlying bit of Mysore territory in latitude $15^{\circ}55'$ , longitude $78^{\circ}38'$ .   |
|    |                    | 10. | Anantapur (Madras) tank catchment                      | The whole of the area of the extreme northern portion of the Molaka/Muru taluk in Mysore which drains northwards into the Anantapur (Madras) tank catchment. |            | There are existing Madras tanks below, and the whole area which drains into such tanks is included.   |
| 4. | Vedavati or Hagari | 11  | Chinna-Hagari  | Upto where the stream crosses the frontier near Rangaiyandroog.  | 16 miles   | This stream joins the main river about 8 miles beyond the frontier.   |
|    |                    | 12. | Sherikolaha lla, or Nagalapura tank (Madras) catchment | The whole catchment area in Mysore territory.  |            | Affects the supply to Madras tank below.  |
|    |                    | 13. | Rangasamu dram tank (Madras) catchment                 | The whole area of the catchment of the tank in Mysore territory.   | ..         | The stream from this catchment leaves Mysore territory in latitude $14^{\circ}37'30''$ and longitude $76^{\circ}48'30''$ .                            |
|    |                    | 14. | Yeradkere tank (Madras) catchment                      | -do  | ..         | The Yeradkere in Madras is on latitude $14^{\circ}30'$ ; longitude $76^{\circ}57'30''$ .  |
|    |                    | 15. | Main stream of the taluk drainage                      | Upto the bridge over this stream on the Salem-Bellary Road.  | 15.5 miles | The road is a convenient point for a limit. This stream joins the Vedavati  |

|    |                             |     |  |   |            |  |
|----|-----------------------------|-----|--|---|------------|--|
|    |                             |     |  |   |            | river within Mysore limits.  |
|    |                             | 16. | Main stream of the Doderi drainage                   | Upto the boundary of the Hosahalli village                      | 17.5 miles | Latitude 14°21', longitude 76°49'. This stream joins the Vedavati river within Mysore territory.   |
|    |                             | 17. | Virappasam udram and amarpur tank (Madras) catchment | The whole area of catchment of this series in Mysore territory. |            | This area represents a large proportion of the Pavagada taluk of Mysore.   |
| 5. | Pennar or Northern Pinakini | 18. | Mulkara tank (Madras) catchment                      | The whole area of catchment of this series in Mysore territory. | ..         | This Madras tank is situated in latitude 14°8' longitude 77°26'20".  |
|    |                             | 19. | Ruddam tank (Madras) catchment                       | The whole area of catchment of this series in Mysore territory. | ..         | A considerable area in the north of the Maddagiri taluk of Mysore is on this catchment.  |
|    |                             | 20. | Virappasam udram tank (Mysore) catchment             | The whole area of catchment of this series in Mysore territory. | ..         | This terminal tank is in S.E. corner of the Pavagada taluk of Mysore but there are some Madras tanks above in the Madakasira Tahsildari. The catchment excluded from Mysore operations is chiefly in the north of the Maddagiri taluk. |
|    |                             | 21. | Purghi tank (Madras) catchment                       | -do-  | ..         | The catchment excluded from Mysore operations is in the north of the Maddagiri taluk.  |
|    |                             | 22. | Jayamangli river                                     | Upto its junction with the Garudachala stream.                  | 28 miles   | The river above this point is of minor importance to Madras.   |
|    |                             | 23. | Suvarnamu khi branch of Jayamangali                  | Upto site of Rampur anicuts.                                    | 25 miles   | Joins the Jayamangali a few miles below this point.  |
|    |                             | 24. | Kumadvati  | Upto site of anicuts feeding the                                | 9.5 miles  | This stream joins the Pennar on the Mysore   |

|    |                |     |  |  |                |  |
|----|----------------|-----|--|--|----------------|--|
|    |                |     |  | Kodagatur and Gundagal tanks in Mysore.                        |                | frontier.  |
|    |                | 25. | Chaulur tank (Madras) catchment                            | The whole direct catchment of this tank in Mysore territory.   | ..             | This Madras tank is on the west bank of the Pennar just outside Mysore territory.  |
|    |                | 26. | Western or Thondebhavi branch of the Pennar or N. Pinakini | Upto its source.   | 27 to 30 miles | ..   |
|    |                | 27. | Central or Varvani branch of the Pennar or N. Pinakini     | -do  | 25 miles       | ..   |
|    |                | 28  | Hindupur tank (Madras) catchment                           | The whole area of catchment of the series in Mysore territory. | ..             | An important and large area of the Goribidnur taluk is here excluded from Mysore operations in a part where water for irrigation is much appreciated.                                    |
| 6. | Chitravati     | 29  | Kushavati stream (Bukka-patna tank catchment in Madras)    | Upto site of Daparti anicut.                                   | 10.5 miles     | The large Gudibanda tank in Mysore and the 20 smaller tanks above impound a very large portion of the upper catchment already.   |
|    |                | 30. | Chitravati catchment (Bukkapatna tank catchment)           | The whole area to the north of the Chelur Bagenhalli Road      | ..             | This portion of the Chitravati catchment being more hilly and barren, the run-off is greater than in the more cultivated and level catchment to the South of the Chelur-Bagenhalli Road. |
| 7. | Papaghni river | 31. | Vadnaman-halla   | Upto Naremadipalli tank  | 9.5 miles      | No Madras works affected upto the junction of this stream with the Papaghni river.   |
|    |                | 32. | Guntipalli tank  | The whole area of catchment in Mysore                          | ..             | This Madras tank is situated just above the  |

|    |             |     |   |  |                           |  |
|----|-------------|-----|---|--|---------------------------|--|
|    |             |     | (Madras)<br>catchment                               | territory  |                           | large Vyasasamudram tank.  |
|    |             | 33. | Sadam tank (Madras) catchment                       | The main stream upto its source.   | 17 to 18 miles            | This Madras tank the water-spread of which is partly in Mysore territory, drains into the Papaghni river just above the Vyasasmudram tank.   |
|    |             | 34. | Kotagal branch of the Papaghni                      | Upto Kotagaltank.  | 17-18 miles               | The catchment above Kotagal tank is comparatively small and unimportant with numerous small tanks already on it.   |
|    |             | 35. | Tippasamudram tank (Madras) catchment               | The Marasanpalli-Digavakote stream upto Digavakote Pathacheruvu tank and the Marasanpalli. Gundedu stream upto Gundedu tank. | 9.5 miles<br><br>13 miles | These are the only two important streams on this catchment, and above these terminal tanks there are a large number of small tanks on the small drainages. These terminal tanks are only situated from 4 to 5 mile from the water shed of the Palar. |
|    |             | 36. | Rangasamudram tank (Madras) tank (Madras) catchment | Adgal stream upto Adgal. Vasantanaya Kankere tank.   | 6.5 miles                 | The Adgal tank is situated 6 miles from the watershed, and there are numerous tanks in this distance.  |
|    |             |     |   | Kurigeppally branch stream upto the Kurigeppally tank.   | 4.5 miles                 | The Kurigeppally tank is only 4 miles from the watershed, and there are some 18 small tanks above it.  |
| 8. | Palar river | 37. | Nangli (Mysore ) tank drainage                      | Main stream upto its source.   | 17.5 miles                | There are 12 Mysore tanks situated on this main stream.  |
|    |             | 38. | Shettikal (Mysore) tank drainage                    | -do-   | 10 miles                  | There are about 5 existing Mysore tanks and 1 breached tank on this main stream.   |
|    |             | 39. | Malinayakanhalli (Mysore) drainage                  | -do-   | 6.5 miles                 | There are 4 existing Mysore tanks on this main source  |

|    |                             |     |                               |   |          |  |
|----|-----------------------------|-----|-------------------------------|---|----------|--|
|    |                             | 40. | Vegmadu (Mysore) drainage     | Main stream upto its source                     | 7 miles  | There are 4 existing Mysore tanks on this main stream  |
|    |                             | 41. | Tailur tank (Mysore) drainage | -do-  | 23 miles | There are 10 Mysore tanks on this important branch of the Palar, the terminal tank being 12.5 miles from the frontier. |
| 9. | Pennar * or South Pinakin i | 42. | Verushuvav ati river          | Main stream upto Koppa (or) Kuppam tank         | 16 miles | There are 76 tanks above the Koppa tank which is only some 12 miles from the watershed.                                |
|    |                             | 43. | Budikote stream               | Main stream upto Thimmana-yakanhalli tank       | 21 miles | There are 146 tanks above this terminal tank which is only about 12 miles from the watershed.                          |
|    |                             | 44. | Masti catchment               | The whole area or catchment in Mysore territory |          | About 45.40 square miles in area in which there are 63 tanks in existence.   |
|    |                             | 45. | Kadgodri drainage             | Main stream upto its source                     | 36 miles | There are 10 Mysore tanks on this main stream now in use, most of them of large size.                                  |

\*Known as the "Ponniar" in Madras



## SCHEDULE C

**A list of works already in progress, and which are to be allowed to be completed although they would be barred by the proposed rules for restriction of Mysore operations.**

| Sl. No in Sch A | Main river drainag ee         | S.No of strea m or catch ment in Sch B | Name of work in progress  | Date on which work was sancti oned | Amou nt of estima te in Rs. | Expend iture incurre d to end of March 1891 | Descriptive remarks  |
|-----------------|-------------------------------|--|---|------------------------------------|-----------------------------|---|--|
| 1               | 2                             | 3                                      | 4   | 5                                  | 6                           | 7   | 8  |
| 1.<br>2<br>3    | Tungab hadra<br>Tunga Bhadra  |  |   |                                    |                             |   | No works in progress on these catchments which are affected by the proposed rules submitted to Madras.   |
| 4               | Hagari or Vedava ti           | 17                                     | Restoration of the Arsikere-Hampai-Yandurga tank                      | May, 1889                          | 4,362                       | ..  | The estimate provides for raising the weirs by 2 ft and increasing capacity from 107 to 163 units. Work in abeyance owing to objection raised by Madras Government. But it is not intended to irrigate more than the area of land (189 acres) assessed as wet by the revenue survey. |
|                 |                               | 17                                     | Restoration of the Arsikere-Gujjarappankere tank                      | May, 1889                          | 3,582                       | ..  | The estimate provides for raising the weir by 1 ft and to increase the capacity from 149 to 186 units. The raising of the weirs by 1 ft will not do more than compensate for the silting up of the bed for years.  |
| 5.              | Pennar or Norther n Pinakin i | Main strea m                           | New reservoir (Srinivasa-sagara) across the river near Kothagarahalli | July, 1888                         | 99,206                      | 66,696                                      | The new masonry dam with earthen bund on flanks is two-thirds completed. No Madras works affected. The capacity of the tank will be 610 units, and it is intended to irrigate 800 or more  |

|    |            |             |  |                      |  |        |   |
|----|------------|-------------|--|----------------------|--|--------|---|
|    |            |             |  |                      |  |        | acres. This work is referred to by Colonel H Smalley, R.E., in his No.674, dated 10 <sup>th</sup> June, 1890 to chief Engineer for Irrigation, Madras.  |
|    |            | 28.         | Restoration and improvement of Myala tank      | Sep 1887<br>Dec 1889 | (Original Estimate: Rs.14 452)<br>Revised Estimate: Rs.17 168) | 13,130 | The capacity was increased from 95 units to 318 units and the work is nearing completion. This tank is on the Hindupur (Madras) tank catchment, but only has a catchment of 38.80 sq. miles of its own.   |
|    |            | 28.         | Raising the weirs of the Mahamaleswara tank    | Sep, 1890            | 3,165  | 865    | This is a small tank above the Myala noted above. The estimate provides for increasing the capacity of the tank from 62 to 102 units. The former capacity having proved insufficient to irrigate the 198 acres of assessed wet lands. No increased area of irrigation is provided for. The total catchment above this tank is only 3 sq. miles. |
|    |            | 28.         | Restoring the Maniwala tank                    | Feb, 1889            | 4,094  | 2,860  | The tank weir is to be raised 2 ft and capacity increased from 139 to 211 units, but only in order to impound sufficient water to irrigate the 350 acres.   |
| 6. | Chitravati | Main stream | New Reservoir (Ramasamudram) near Periyasandra | May, 1888            | 75,077   | 51,824 | This reservoir is noticed by Col. H. Smalley, R.E in his No.674 dated 10 <sup>th</sup> June, 1890 to Chief Engineer for   |

|    |                |             |   |            |        |        |   |
|----|----------------|-------------|---|------------|--------|--------|---|
|    |                |             |   |            |        |        | Irrigation. It is to have a capacity of 1,207 units to irrigate 1200 acres. The catchment area above the tank is 47.61 sq. miles.   |
|    |                | 30          | Restoration of the Malsandra Racvar tank            | Dec, 1888  | 4722   | 4,724  | Weirs of the tank were raised 2 ft increasing the capacity from 105 units to 159 units. It is not intended to increase the area originally irrigated 258 acres. The capacity of the tank is even now insufficient unless the tank fills 1.5 times in the year. Work is nearly completed.  |
| 7. | Papaghni river | Main stream | New reservoir (Venkatesasagara) near Devaganahalli  | June, 1888 | 60,985 | 28,423 | This work is noticed by Colonel H. Smalley R.E. in his No.674, dated 10 <sup>th</sup> June, 1890, to Chief Engineer for Irrigation. The tank will impound 517 units as designed and will perhaps irrigate 750 acres if it fills 1.5 times. The catchment above the tank is 61 sq. miles.  |
|    |                | Main stream | Restoring the Buradagunte anicuts, channel and tank | Dec 1888   | 26,575 | 17,350 | This work consists in (1) building a masonry anicuts with the usual earth flank bunds across the main stream (2) restoring the old channel therefrom and (3) restoring the Buradagunte Thimmasani tank and increasing its capacity from 111 units to 167 units. This project is also noticed by Colonel Smalley in his report No.674, dated |

|    |             |    |  |                              |        |        |  |
|----|-------------|----|--|------------------------------|--------|--------|--|
|    |             |    |  |                              |        |        | 10 <sup>th</sup> June, 1890.   |
|    |             |    | Restoring the Timmanayaknahalli Agrahar tank | Aug 1888                     | 16,776 | 13,234 | Noticed also in Colonel Smalley's letter above quoted. This is a restoration of an old breached tank 26 miles up the main stream and 2 miles above the Chintamani Begerhali Road. The tank is to impound 240 units and irrigate 250 acres as against its original atchkat (Irrigable area ) of 330 acres as per revenue survey maps. Work is nearing completion. |
|    |             | 35 | Restoring Kote-Kallur tank                   | April, 1888                  | 6,564  | 5,690  | This project consists in the restoration of a tank which breached in 1874, and for increasing its capacity from 25 to 80 units. It is 6 miles from the frontier on the Tipasamudram (Madras) tank catchment.   |
| 8. | Palar river | 37 | Restoring the Byatnurnagavara tank           | Sept, 1888                   | 14,300 | 8,102  | This is the terminal tank of the series. The capacity being increased from 152 to 320 units, it is only intended to irrigate the original area of 365 acres included in the atchkat.   |
|    |             | 37 | Restoring Marandhalli tank                   | Mar, 1886 (RE in July, 1888) | 5,345  | 5,254  | The project provides for raising the weirs 3 ft and increasing the capacity from 121 units to 186 units to irrigate perhaps 250 acres. Work is nearly completed. No Madras work affected.  |
|    |             | 41 | Restoring Jagalkashti-Dodkere tank           | April, 1888 (RE in Jan       | 7,246  | 7,210  | Project provides for raising the weirs 3 ft and increasing the capacity from 50 to   |

|    |                                |             |                                |             |        |        |   |
|----|--------------------------------|-------------|--------------------------------|-------------|--------|--------|---|
|    |                                |             |                                | 1890)       |        |        | 107 units. Work is nearly completed. No Madras work affected.   |
| 9. | Pennar * or Southern Pinakin i | Main stream | Restoring Bhadram tank         | April, 1888 | 21,689 | 15,033 | The project provides for raising the weirs of this tank by 3 ft and increasing the capacity from 701 units to 1225 units. This work to the tank itself is nearly completed and only channels have now to be extended. |
|    |                                | 44          | Restoration of Santhalli8 tank | Nov 1889    | 7,480  | 4,076  | This tank is in the Masti catchment. The weirs are to be raised 3 ft. and capacity increased from 93 to 154 units. No Madras works are affected.  |

\*Known as the “Ponniar” in Madras

**AGREEMENT<sup>15</sup> REACHED AT THE CONFERENCE OF MYSORE AND MADRAS HELD IN THE SECRETARIAT AT BANGALORE ON THE 4<sup>th</sup> AND 5<sup>th</sup> SEPTEMBER, 1933.**

1. (1) As regards repairs to irrigation reservoirs falling within the definition in rule 1 (3) of the Agreement of 1892- whether they involve the increase of the level of waste weirs or the construction of new reservoirs in substitution of old ones - intimation will, as far as possible, be given by Mysore<sup>16</sup> in future before the work is commenced with details of what is proposed to be done. The Madras<sup>17</sup> Government will, as far as possible give similar information in respect of similar works in the Madras Presidency which may affect the prescriptive rights for which protection may be claimed under the rules in the Agreement of 1892.

(2) By analogy, the construction of new anicuts in place of existing ones will be treated similarly but Mysore and Madras Governments will as far as possible, give similar intimation before work is commenced.

(3) An anicut will include any construction of rough stone(dry) or masonry across a river either in part or fully and in any direction, which will have the effect of diverting water from the river, but the consent of the Madras Government will not be required under the Agreement of 1892 for the construction of any new anicut if there is to be no irrigation under it.

2. Construction of a new tank across the Bandihalla at Thippaganahalli, Goribindnur taluk.- If the Mysore Government agree to reduce the maximum storage capacity of the Srinivasasagara by 200 units to 410 units and to reduce the maximum atchkat by 100 acres to between 700 and 800 acres, the Madras Government will consent to the proposal to construct the new tank with a storage capacity of about 450 units and an atchkat of 600 acres.

3. Rajavanti tank, Pavagada taluk.- The recommendations made in the notes of joint inspection are accepted as equitable to both the Government.

4. Distrubution of water of the Swaranamukhi tributary of the Hagari between the British Agali Channel and the Mysore Kittagali channel.- The Mysore Government agreed to the provision of shutters for the vents to be re-opened in the anicut provided that they are operated not necessarily after the Agali tank fills, but as soon as the flow in the Agali channel attains a certain height, which will be determined by agreement between the two Chief Engineers.

The draft agreement, already forwarded may be concluded with this modification.

5. Diversion of water from the Handihalla stream into the supply channel to the Bodimarlur

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<sup>15</sup> Provisions of this Agreement in respect of Cauvery and Tungabhadra rivers and their tributaries have been superseded by Decisions of Cauvery and Krishna Water Disputes Tribunals and are no longer valid.

<sup>16</sup> Mysore is now part of Karnataka state.

<sup>17</sup> Territories of erstwhile Madras Presidency are now part mainly of Tamil Nadu and Andhra Pradesh. Rivers mentioned in this agreement either traverse through Tamil Nadu or Andhra Pradesh before merging in Bay of Bengal.

tank- As the Mysore Government have shown from records that the tank is an old one which existed at the time of the Agreement of 1892, and had then an irrigated area not less than it has now, the proposals of the Mysore Government will be accepted.

NOTE.- The Mysore Government will send a note on this subject. This they have done.

6. Distribution of waters between the Mysore village of Katamaguntapalli and the British village of Byrangi in Chittoor district.- After examining the plans of the anicut and headworks and the irrigation interests of the ryots of both parties, it was agreed that the two existing channels in the river bed leading to the respective vents in the anicut may be linked by Madras by means of a connecting channel parallel to the anicut somewhere about it, subject to the condition that the Mysore Jodidar shall have a right to put up a temporary cross-bund, not exceeding 18 inches above the sill level of the vents in the anicut across this connecting channel and also a temporary cross-bund across the Byrangi channel just below the existing regulator, in order to enable him to utilise the summer flow between 1<sup>st</sup> January and 30<sup>th</sup> April every year.

7. Groyne wall at the head of the Gangasandra feeder channel from the North Pennar.- As the object of the feeder is to divert flood waters and not low supplies, Mysore has no objection to dismantling, if considered necessary a portion of the Groyne wall, retaining the remaining length so as to give an entrance to the channel during floods. In order to determine by mutual agreement what exactly this length should be, it was agreed to make a joint survey of the river at the feeder head.

8. Rampur anicut across the Jayamangali river.- It is agreed to allow the anicut to remain as constructed, on the understanding that the size and the number of vents in it and the head sluice, of the channel will be altered by Mysore if this is found necessary after an examination of the figures of irrigation under the anicut and lower down the river both in Mysore and British limits, which figures should be furnished as early as possible by either party to the other, the interests of the direct irrigation under the channel from the anicut being adequately safeguarded.

9. Interception of supplies to the British Manchinillu cheruvu of Kodikonda village in the Hindupur taluk. It is agreed that there is no objection to closing the vents in the anicut since they have been held to be vents left during construction of anicut.

10. Application of the definition of "Repairs to irrigation reservoirs" to "Repairs of anicuts" by analogy- This is agreed to vide Item 1(2). It is also agreed that there should be no objection to Madras carrying out simple or ordinary repairs to anicuts or other works of the Madras Government situated in Mysore territory. Intimation will be given to the Mysore Government of what is proposed to be done in such cases.

11. Deficient supplies in the Jayamangali river. - The Mysore Government agree to supply to the Madras Government figures of storage and irrigation under the tanks and channels fed from the river in Mysore territory be low its junction with the Garudachala river.

12. Deficient supplies in the Palar river.- The Mysore Government agree to examine whether, and to what extent, it is possible to supply the information asked for by the Madras Government, and if so, at what cost.

Sd/  
( N. GOPALASWAMI )  
Secretary to the Govt. of Madras, Public  
Works & Labour Dept.  
dated 5<sup>th</sup> September, 1933.

Sd/  
( M.G. RANGIAH )  
Chief Engineer & Secretary  
to the Govt. of Mysore,  
dated 5<sup>th</sup> September, 1933.

## PALAR WATER DISPUTES

**Minutes of the meeting held at Bangalore on the 29<sup>th</sup> June and 1<sup>st</sup> and 2<sup>nd</sup> July, 1956 in the office of Chief Engineer, Mysore in connection with Palar Water Dispute, when the following were present:**

|   |                                       |
|---|---------------------------------------|
| Shri L.P. Bhargava, ISE and Shri S.R. Vasudev | Representatives of the Govt. of India |
| Shri U. Ananda Rao                            | Chief Engineer, Madras                |
| Shri H. Ananthachar                           | Chief Engineer, Mysore                |

The following Agreement has been infringed by Mysore Government because:

- (i) The F.T.Ls. of Bethamangalam, Ramsagara and Holali tanks have raised;
- (ii) Withdrawal from Bethamangalam tank on account of water supply has exceeded 72 m.c.ft. the agreement figure;
- (iii) Mysore Government have constructed some new tanks in Palar basin in contravention of the agreement;
- (iv) Mysore Government have constructed another anicut below Bethamangalam tank against the spirit of the agreement;
- (v) Mysore Government has been withdrawing water by pumps and otherwise direct from the river for irrigation purposes in violation of the agreement.

Regarding Issue Nos. (i) and (ii), it was decided:

**Bethamangalam Tank:** As a result of joint inspection it was noticed that the maximum height to which the crest of the weir of the tank could have been raised is 3 ft the height of the gates. There is, however, no convincing evidence of this having been done. Even, however, if it is assumed that the crest has been raised by 3ft, the Mysore Government were within their right to raise it upto 9 ft under the Madras Government Letter No. 1071-I, dated the 13<sup>th</sup> September, 1902 provided the withdrawal from the tank was limited to 72 m.c.ft per annum. The record of the last 51 years indicates that the average annual withdrawal has been 61.5 m.c.ft. The withdrawal for the last 8 to 10 years has been in excess of 72 m.c.ft. by 5 to 20 m.c.ft. The reason for this excess, as given by the Chief Engineer, Mysore, is increase in the fire accidents in and increased requisition by Kolar Gold Fields. This increased withdrawal has been partially met according to the Chief Engineer, Mysore, from Holali tank which was converted from an Irrigation tank into a water supply tank in the year 1904. We can, therefore, say that the 1892 agreement has not been infringed so far as Bethamangalam tank is concerned.

**Ramsagra tank:** Joint inspection indicates that there has been no raising of this tank and therefore there has been no infringement of 1892 Agreement in connection with this tank.

**Holali tank:** This tank was not inspected. This was converted from the irrigation tank into a water supply tank in the year 1904 under Mysore Government G.O. No. R-2273-6/Mis-547-03-39, dated the 10th September, 1904. There is no dispute regarding this tank.

Regarding Issue No. (iii), the Chief Engineer, Mysore has given a statement of all the existing tanks in the Palar basin. No new tanks have been constructed by the Mysore Government in the prohibited area.

Of the six tanks mentioned by the Chief Engineer, Madras, in his note, two have no direct irrigation. Irrigation under three varies from 4 to 5 acres. Yedatta Eri has been in existence prior to 1892 and, therefore, cannot be taken as a new tank. All these tanks are outside the prohibited area and do not come within the purview of 1892 Agreement.

Regarding Issue No. (iv), the Chief Engineer, Mysore, said that the only anicut below Bethamangalam tank is the Karivudduanicut. He promised to produce details of Irrigation on this from 1892 onwards to prove that this anicut was in use by the ryots although the actual irrigation was less than the proposed figure of 50 acres.



If it is proved that the anicut has not been in use for 30 years or more, the Madras Government withdraws the complaint.

Regarding Issue No. (v), the withdrawal of water direct from the river does not fall within the purview of the 1892 Agreement and as such irrigation done by use of Pikotas or Kapilas some of which have been converted into pumps recently, does not infringe the 1892 Agreement.

During our inspection, we noticed some Pikotas out of use and some converted from Pikotas or Kapilas into pumps. These are old existing wells.

The Conversion of Pikotas and Kapilas into pumps increase the withdrawal and, therefore some restriction has to be placed on the use of power pumps to be installed in place of Pikotas and Kapilas so as to restrict the direct withdrawal from the river in order to protect the lower riparian rights.

#### CONCLUSIONS

The complaint of infringement of 1892 Agreement by Mysore was discussed at length and an amicable settlement was arrived at. We were satisfied that the Government of Mysore have not infringed the Agreement. However, to safeguard against future disputes, it is decided that the Mysore Government should connect all the weir crest levels of tanks and anicuts falling within the prohibited area with G.T.S. bench marks. This should be done jointly with the Government of Madras as a special case. Complete dimensioned plans showing G.T.S. values of Bethamangalam, Ramsagra and Holali tanks should be supplied to the Madras Government with complete dimensions of Bethamangalam tank.

As regards other tanks and vuddus within the prohibited zone, a statement showing the number of tanks and vuddus, their location, waste weir levels should be supplied to the Government of Madras.

In order to find out causes of diminution of supplies at the Palar Anicut as alleged by Government of Madras, it was decided that the Government of Madras should investigate all withdrawals of water from the Palar basin between Mysore border and Palar Anicut, particularly in the Andhra State area and supply a copy of the report to Mysore Government complete with statistics as collected.

To meet the keen demand for water in Madras State, the Government of Madras should look to other resources than Palar River.

2.7.1956

Sd/-  
(L.P. BHARGAVA)  
Member, Central Water &  
Power Commission

Sd/-  
(U. ANANDA RAO)  
Chief Engineer, Irrigation  
Madras

Sd/-  
(S.R. VASUDEV)  
Director, CW&PC

Sd/-  
(H. ANANTHACHAR)  
Chief Engineer, Mysore

#### DETAILS OF BETHAMANGALAM TANK AS GIVEN BY CHIEF ENGINEER, MYSORE

The tank had a capacity of 1216 units prior to 1887-88, the tank was restored to a reduced capacity of 856 units keeping the crest of weir at 50.00. The tank breached at 4 places in 1903 and sustained heavy damage. The tank was restored in 1904 to the original capacity of 856 units when the level of the crest was kept at 52.00. This restoration to the original capacity was entirely in accordance with the 1892 agreement. Shutters were introduced in the right weir by lowering the weir from 52.00 to 49.00 about the year 1906-07. This was done since the tank had suffered heavy damages and since it was converted into water supply tank for pumping water to Kolar Gold Fields and since under the agreement we have to give them a stipulated quantity of water all times it was considered necessary that more safety measures were needed in order to prevent any mishap to the tank. With a view to achieve this the crest was lowered by 3' and screw-gearing shutters were fixed so that in times of heavy floods the water level could be lowered quicker by operating the gates and thereby removing

any possible danger to the tank. The drawing of 1909 prepared by Sri V. Rangaswamy Ayyangar, which was exhibited clearly shows the level of the weir at 52.00 with the bottom of shutters at 49.00. This tank which was originally an irrigation tank was converted into a water supply tank by paying compensation to all the wet lands and converting all the wet into dry. The irrigation sluices were also closed which were feeding this atchut. The figure of 72 m.c.ft. which has crept in correspondence was the figure given by the Mining Company. Mysore Government had to supply water to K.G.F. as per their requisition. In some later years, on account of some fire accident or some extra requisition of water by the Mining Companies, it was increased to about 5 to 20 m.c.ft. in some years. The average quantity of water supply for 51 years gives the figure of 61.2 m.c.ft. as the average draw per year.

I would also like to add one more point viz. that this 72 m.c.ft. of water is not a figure as per agreement fixed between Mysore and Madras restricting the scope of the Mysore Government to draw the water. The Mysore Government is entitled to draw its full capacity of Bethamangalam Reservoir of 856 units. It was only as a safety measure, on account of guaranteeing the stipulated supply of water to the Kolar Gold Fields that the Engineers thought that a 3 years supply should be maintained to tide over any bad years or other things. So, the whole irrigation under Bethamangalam tank was disbanded and the whole tank was converted into water supply tank though there was a possibility of partial irrigation. We did not want to have dual type of system. Therefore we are entitled to a capacity of 856 units which was conferred on us as per agreement and only a partial utilisation has been done.

At the same time it was thought that even Holali tank should be reserved for water supply which had a capacity of 114 units. Even on this tank, irrigation was prohibited to supplement Bethamangalam tank whenever there were low supplies of meter. The conversion of Holali tank was done as an additional safety measure. The Madras CE said that the statement showed practically the same capacity in the tank, while other tanks showed a reduction of capacity of about 25 to 35%. I have to say in this connection that while other tanks which are irrigation tanks get dry every year we have prepared a number of restoration projects to retrieve full or partial capacities as the case may be. In these restoration projects we have found by actual surveys that the diminution of capacity ranges anywhere between 25 to 40%. An average ratio has been worked out and applied to all tanks to show to what extent the tank is reduced. It is also borne out by the fact that the original irrigated area of 52,000 acres has been reduced to 35,000 acres which is reduction of nearly 40%. This gives an overall picture of the average reduction of capacities in the tank which is the main criteria for the loss of irrigation. In the case of Bethamangalam tank, being a water supply tank, the rate of silting may not be as rapid as the other tanks which run dry every year. On account of appreciable level of water maintained, throughout the year, the silt generally deposits in the outside contours and there may not be such change of this silting. But since no capacity surveys have been done in this respect, we simply kept the same figure without showing any reduction. Thirdly, the argument that Bethamangalam Tank has been raised by 3' or 4' also cannot be accepted for this reason and there is no need for any contour survey. Recently, the waterspread contour was actually surveyed and area found out and it gave 756 acres which very nearly corresponded to the original figure of 793. This goes to show that the weirs are at the same level from the time of restoration.

Sd/-

C.E.(Mysore)

2-7-56

## BETHAMANGALAM, RAMASAGRA AND HOLALI TANKS

Note by Chief Engineer, Madras

It is pointed out that the capacity of the Bethamangalam tank had been increased by raising the crest of the weir by erecting 3' shutters over the crest in support of which the following points are furnished:-

(1) It was noticed during inspection that the body wall of the right flank weir where shutters had been erected was found to be made up of masonry with a concrete capping of about 3 ft. deep. If

the crest had been lowered to 3 ft. and shutters erected over it there would have been no necessity for this layer of concrete.

(2) On the right side of the weir shutters were found erected direct over the rocky foundation which shows that the old shutters should have been fixed on the crest of the rock outcrops.

(3) As per fresh statistics furnished now, present capacity of the tank is noted as 856 units and the capacity in 1892 is stated to be 1216 units while old records furnished to Madras Government from time to time gave the figure of 856 units only. This shows that the capacity should have been increased to 1216 units sometime or other.

(4) In all previous correspondence and especially in Mysore Chief Engineer's letter No. 770 S dated 24.9.1931 emphasis was laid on the limitation of draw off from the tank to 72 m.c.ft. per year at any time which was unnecessary if the capacity had not been raised as contended now, and nowhere in any correspondence was it categorically denied that the capacity had not been increased.

(5) The Chief Engineer, Mysore has categorically stated during last meeting that the crest had been raised by 3' and not by 9'.

(6) The area of waterspread for this tank given to Central Government during February 1956 was noted as 835 acres and now it is stated as 753 acres which shows the capacity of the tank is more than what is now stated.

(7) Unless original complete plans for the installation of shutters are produced or fresh joint surveys made regarding capacity etc. the mere statement of the Chief Engineer Mysore, that the capacity had not been increased cannot be accepted.

(8) Similarly, it is pointed out that the present capacity of Ramasagratank is reported to be 1533 units and that during 1892, 2028 units, vide Kensington letter dated 16.9.1874, enclosed to Mysore Government letter No. 555/2666 dated 3.10.1874. The capacity is given as 900 units for F.T.L. 50.00. Subsequently they have said that they have raised the crest by 6" in 1904 when the capacity is noted as 900+98 or 998 or say 1000 units. Now the present capacity is reported as 1533 units which clearly shows that the capacity has been increased after 1904.

(9) It is reported that the Holali tank has been converted into a water supply tank to augment Bethamangalam tank and the total draw off per year has not exceeded 72 m.c.ft. when the capacity of Bethamangalam itself is in the order of 223 m.c.ft. and when the minimum flow in the river itself will be not less than 72 m.c.ft. it is unnecessary and wasteful to have such a large capacity to an extent of 266 m.c.ft. Certainly it will affect the supplies lower down.

2.7.56 Sd/-  
( U. ANANDA RAO)

#### Notes of Chief Engineer (Irrigation) Madras on Issue No.V

From the statement of pumps installed in Palar Basin directly drawing water from the Palar river as furnished by the Mysore P.W.D., it is seen that 24 pumps have been installed whose capacity ranges from 26 to 3 H.P., with a total HP of 200 irrigating 181 acres. Mysore Chief Engineer says that these pumps have been installed in the place of Pikotas and Kapilas. Usually, Pikotas and Kapilas draw limited supplies whereas pumps draw much larger quantity than Pikotas and Kapilas do. These pumps have been located between Bethamangalam and Kari voddu where there is facility for ponding just in front of Kari voddu which has been recently restored. It is likely that this pond will be replenished by leakage water or by wash water from Bethamangalam tank. So, pumping thus affects flow down the river.

Generally, in Madras, conversion of pikotas to pumps has been prohibited. Wherever it does not affect the lower riparian rights, such pumps have been installed for supplying water to areas of even more than 200 acres.

Sd/-

(U. ANANDA RAO )  
Chief Engineer  
(Madras)  
2.7.1956

Note by Chief Engineer, Mysore: Issue No.V

1. The practice of lift irrigation by Pikotas as and Kapilas has been in existence since time immemorial.
  2. In the Bethamangalam area, between Bethamangalam tank and Kari voddu there have been a number of wells to facilitate such irrigation.
  3. Separate accounts of the extents irrigated by such wells have not been kept.
  4. They do not function throughout the year as the wells have water for just a few months in the year.
  5. No long term or wet crops are grown in such extents, but crops like chillies, vegetables, same are cultivated.
  6. Some of these have been converted as power pumps with the advent of G.M.F Scheme, sponsored by the Centre wherein some concessions were given to the ryots for encouragement of food production.
  7. The ryots do not usually take up to such lift irrigation by pumps as it is not only costly but also difficult to maintain.
  8. Such lift irrigation is a customary practice not prohibited by the 1892 agreement and cannot affect Madras interests.
  9. Out of the total extent of 180 acres only 100 acres are by direct lift and at 5 acres per m.c.ft. may be requiring about 20 m.c.ft. of water in a crop period of 5 months or 4 m.c.ft. per month.
  10. During normal days, the wash waters of the filters from Bethamangalam tank about 60,000 gallons per day and sub-soil seepage and springs afford some water to this extent of 180 acres when water is drawn out from wells.
  11. During surplus days of Bethamangalam which are 19.4 days on an average per year or at best 24.2 days per year, the water drawn for irrigation from the surplus flow would just be 2.4 m.c.ft. for the entire area.
  12. Withdrawal of water from the surplus or river flows has been prevalent and has been an established practice for such light irrigation.
- In the light of the above points is Madras State justified to raise an objection for such a customary practice outside the purview of the Agreement, especially for such an insignificant quantity of 2.4 m.c.ft. for the entire year.

Sd/-  
C. E. (Mysore)  
2. 7. 56

#### COPIES OF LETTER

From the Secretary to the Government of Mysore, P.W.D. to the First Assistant to the Resident in Mysore, dated 13<sup>th</sup> February 1902, No. 181-852.

I have the honour to inform you that the Mysore Darbar propose to use the Bethamangalam tank as a reservoir for supplying water for domestic and manufacturing purposes to the Kolar Gold Fields. In this view it is proposed to increase the capacity of the tank from 222.56 millions cubic feet to 572 million cubic feet by raising the level of the weir by 9 feet.

The Bethanangalam tank is situated in the Kolar District in latitude 13°1'30", longitude 78°-22'-30" and is on the Palar river, and under the rules defining the limits within which no new irrigation works are to be constructed by the Mysore State without previous reference to the Madras Government, it is believed to be necessary for the Darbar to refer to the Madras Government.

Though it is proposed to increase the capacity of the tank by 349.44 million cubic feet, so as to store sufficient water to last for three years of bad rainfall, it is not intended to draw yearly as much water as is now used for irrigation, which will be entirely stopped.

The quantity of water that will be used for the Gold Fields is 72 million cubic feet per annum while the quantity now used for irrigation is 222.56 million cubic feet. The quantity of water drawn from the Palar and used within the Mysore Province will therefore be 150.56 million cubic feet less than at present. Under these circumstances, the irrigation in the Madras Presidency cannot be prejudicially affected. It is also believed that there is no irrigation work on the Palar river in the Madras Presidency within 85 miles of the Mysore frontier.

I am therefore directed to request that you will kindly move the Honourable the Resident to obtain the consent of the Madras Government to the Darbar increasing the capacity of the Bethamangalam tank to the extent proposed.

#### NOTE BY THE CHIEF ENGINEERS FOR IRRIGATION

In the first of the papers read above, the Resident in Mysore forwarded a proposal of the Mysore Darbar to increase the capacity of the Bethamangalam tank on the Palar and under the rules contained in annexure to G.C. No. 1621, dated 18<sup>th</sup> February 1892, requested consent of this Government to the Darbar's proceeding with the work. The object of the proposal is to use the tank as a reservoir for supplying water for domestic and manufacturing purposes to the Kolar Gold Fields, all irrigation under the tank being stopped. It is stated by the Darbar that though it is proposed to increase the capacity of the tank by 349.44 million cubic feet so as to store sufficient water to last for three years of bad rainfall the quantity of water required for the Gold Fields is only 72 million cubic feet per annum against 222.56 million cubic feet now used for irrigation. The Darbar considers that, under the above circumstances, the irrigation in the Madras Presidency cannot be prejudicially affected.

The Superintending Engineer, IV Circle, to whom the reference was forwarded for remarks, submits a report from the Executive Engineer North Arcot Division, in which that officer states that there are no irrigation works within 85 miles of the Mysore frontier, the distance being measured along the Palar river. The Executive Engineer contention that the proposal to increase the capacity of the tank will not prejudice British interest may be accepted, provided that the yearly draw off is not increased beyond the 72 million cubic feet fixed on by the Mysore Darbar as required for the Kolar Gold Fields. If, however, the draw-off were in future years to be very much increased it would be possible that some of the British Irrigation works lower down might suffer to some small extent. If, however, the Mysore Darbar is prepared to guarantee that the yearly draw-off shall not be increased, at all events, without previous reference to this Government I think that the Darbar's proposal may be accepted.

Sd/-

(A.W.SMART Col.R.E.)

Ag. Chief Engineer for Irrigation

24<sup>th</sup> Aug., 1902

No. 1071 I, 13<sup>th</sup> September, 1902  
PUBLIC WORKS DEPARTMENT  
Irrigation

Letter from

Colonel A.W. Smart, R.E.,  
Ag. Joint Secretary to the Govt. of Madras,  
P.W.D. Irrigation Branch.

To

The Honourable THE RESIDENT IN MYSORE

Sir,

With reference to your letter No. 1237 dated 5<sup>th</sup> March, 1902, I am directed to inform you that this Government has no objection to the execution by the Mysore Darbar of the proposed improvement to the Bethamangalam tank, provided that the proposed yearly draw-off of 72 million cubic feet is not at any time increased without a previous reference to this Government.

I have the honour to be,

Sir,

Your most obedient servant,  
(Sd.) A.W. Smart, Col. R. & E.  
Ag. Joint Secretary to Govt.  
Irrigation Branch

Press Statement  
PALAR WATER DISPUTE

The Chief Engineers of Madras and Mysore and the Government representatives had very cordial discussions about the Palar River dispute between the Governments of Mysore and Madras. They also visited the disputed-works and as a result of later discussions come to the conclusion that there was no infringement of the 1892 agreement by Mysore Government. However, to safeguard against future disputes and to find out the causes of complaint of diminution of the supplies at Palar anicut, they suggested certain measures to be implemented by the Governments of Mysore and Madras.

**AGREEMENT EXECUTED BETWEEN THE GOVERNMENT OF PUDUCHERRY AND GOVERNMENT OF TAMIL NADU IN THE MATTER OF SHARING OF WATER AT SORNAVUR ANICUT ACROSS RIVER PONNIAR**

1. Agreement made this the fifteenth day of October Two thousand and Seven between the President of India represented by the Chief Engineer, Public Works Department, Puducherry (herein after called “The Government of Puducherry” which expression shall where the context so admits include his successors in office and assignees) of the ONE PART and the Governor of Tamil Nadu represented by the Engineer-in-Chief, Water Resources Organisation, Public Works Department, Tamil Nadu, Chennai (here in after called “The Government of Tamil Nadu” which expression shall where the context so admits include his successors in office and assignees) of the OTHER PART, sheweth as follows.

2. WHEREAS according to conventions and engagements entered into between British Government and French Government in India in respect of irrigation facilities in Cuddalore and Villupuram Districts, the French Government was putting up Korambu or Sand Bund across the river Ponniar to divert supply to Bangaru channel as per convention No.XXXVI dated the 15<sup>th</sup> June 1910;

3. AND WHEREAS, the said Korambu or sand bund got frequently washed away and did not serve the purpose;

4. AND WHEREAS, the Government of Tamil Nadu have put an Anicut across the river Ponniar in S.F. No. 361 Sub Division No. 7 of Sornavur Melpathi village and in S.F. No. 239 Sub Division No 26/1 of Pagandai village about 300 metres (1000 ft) above the then existing head sluice of Bangaru Channel situated in S.F.No 229 sub division No. Nil in the village of Sornavur Melpathi in lieu of Korambu or sand bund and a new head sluice for the Bangaru channel and excavated a link channel connecting to the then existing head sluice, at the cost of Government of Puducherry to assure the supply of water to irrigate lands in Puducherry and Tamil Nadu in lieu of the said Korambu or sand bund;

5. AND WHEREAS, the site of the Anicut lies in the State of Tamil Nadu;

6. AND WHEREAS, the Government of Tamil Nadu have agreed to maintain and control the same at the cost of Government of Puducherry and both the Governments have agreed to the following conditions set out below;

7. NOW, THEREFORE, these present witness and the parties do hereby agree and bind themselves as follows;

- i. The completed plan of the anicut, head sluice and other appurtenant works together with its hydraulic data prepared by the Government of Tamil Nadu and concurred by the Government of Puducherry shall form the basis on which further review of improvements or modifications can be conducted and these may be included as addendum to this agreement;
- ii. Cost of Maintenance/Repairs / Renovation / improvements shall be met by the Government of Puducherry;
- iii. Maintenance / Repairs / Renovation / Improvements of the Anicut, headsluice, flood banks etc., both above and below the Anicut, within the territory of the state of Tamil Nadu as indicated in the completion plan shall be executed by the Public Works Department of Tamil Nadu;
- iv. Maintenance / Repairs / Renovation /Improvements estimates including centage charges prepared by the Government of Tamil Nadu towards the Anicut, head sluice and other

appurtenant structures shall be made available to the Government of Puducherry for acceptance before execution and only such works as agreed to and executed shall be paid for by the Government of Puducherry;

v. The Government of Puducherry shall fully meet the cost of all works mentioned above by payment by demand draft in advance. On completion of the work, the actual cost of work shall be intimated by the Government of Tamil Nadu to the Government of Puducherry and accounts settled;

vi. The old ayacut under Ponnai river in the Puducherry limits has also been taken into account while proposing the limit flows for Sathanur Reservoir as per rule 2 read with rule 6 of the Rules of Regulation for Sathanur Dam as extracted in schedule-I appended to this agreement. However, the natural flows between 16<sup>th</sup> June and 30<sup>th</sup> September usually realized in small quantities below the limit flows, if impounded temporarily, should be released on or before 30<sup>th</sup> September at the request of the farmers of the Union Territory of Puducherry / State of Tamil Nadu, duly represented by the Executive Engineers concerned.

vii. The ayacut of the Bangaru Channel is identified and the extent is stated as 6053 Acres. The ayacut under this channel lying in Puducherry state and Tamil Nadu state is identified and the extent stated as schedule-II to this agreement.

viii. The water received at the Anicut shall be distributed in the ratio of 3:10 between the ayacut lower down the Anicut and the ayacut under the Bangaru channel. The ayacut lower down the Anicut is identified and the extent stated as schedule—III to this agreement. The supply of the lower down ayacut shall be through the open vent provided in the Anicut. The review of the revision of the above said ratio may be undertaken every twenty years;

ix. The ayacut under Bangaru Channel and the lower down ayacut below the Anicut as enumerated in clauses (vi) and (vii) above shall not be extended beyond the said extent nor shall the single crops in the said extent be converted into double crop for the purpose of regulation without the prior concurrence of both the Governments;

x. Gauges to measure depth of flow shall be maintained (a) at either end of the Anicut, (b) above and below the open vent and (c) above and below the head sluices with a view to gauge the flow of water and distribute the water in the ratio referred to in clause (vii) above. Data on gaugings and quantum of water released to both the ayacuts shall be collected by Public Works Department, Tamil Nadu and made available to the Officers of both the Government of Tamil Nadu and the Government of Puducherry;

xi. The control and regulation of water at the anicut head sluice and scouring sluice shall be the responsibility of the Government of Tamil Nadu;

xii. Clauses other than Clause (vii) above of the agreement can be reviewed at the end of sixty years from the date of acceptance of this agreement.

xiii. (a.) The terms of this agreement were accepted and adhered to by the parties ever since 19<sup>th</sup> October, 1969 and as such this, agreement shall be deemed to have come into force i.e. on the 19<sup>th</sup> day of October of one thousand nine hundred and sixty nine.

(b.) This agreement shall also serve to ratify all actions taken by both parties to this agreement in the matter of sharing of water of Sornavur Anicut across the river Ponnai to the execution of this agreement.

xiv. Every dispute, doubt, difference or question which may at any time arise between the parties hereto touching or arising out of or in respect of this agreement or the subject matters thereof shall be first settled by mutual discussions of competent authorities of both the parties hereto. If in spite of such mutual discussions no agreement could be reached, then it shall be referred to the arbitration of an arbitrator to be agreed upon between the parties or failing agreement to two arbitrators one to be appointed by each party hereto and in case of difference of opinion between the two arbitrators to an umpire approved by the said two arbitrators not later than one



month from the date of such difference of opinion and the decision of the arbitrator or such arbitrators or umpire as the case may be shall be final and binding on both parties.

In witness whereof Thiru C. Anandane. S/o. Thiru G. Cannayane, Chief Engineer, Public Works Department; Puducherry, acting for and on behalf of the President of India and Thiru P. Raman, S/o. Thiru R. Perumel, Engineer-in-Chief, Water Resources Organisation, Public Works Department, Chennai acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have set their hands.

(C. ANANDANE)

Signed by the above named  
(for and on behalf of and by the order and  
direction of the President of India)

In the presence of

1) S. MANOHAR,  
Superintending Engineer, Circle II  
PWD, Puducherry

2) V. SATHYAMURTHI  
Executive Engineer,  
Irrigation Division, PWD,  
Puducherry

( P. RAMAN)

Signed by the above named  
(for and on behalf of and by the order and  
direction of the Governor of Tamil Nadu)

In the presence of

1) Thiru T. GOVINDARAJAN,  
Chief Engineer, WRO, PWD,  
Chennai Region, Chennai.

2) Thiru C.V. VADIVELU,  
Executive Engineer, WRO, PWD,  
Lower Pennaiyar Division, Villupuram

## SCHEDULE-I

### EXTRACT OF THE RULES FOR REGULATION FOR SATHANUR RESERVOIR APPROVED BY THE GOVERNMENT OF TAMIL NADU IN G.O.Ms. No. 1074 PUBLIC WORKS DEPARTMENT DATED 20<sup>th</sup> JUNE 1976.

2. Inflow in excess of the limits specified here under against each month shall be impounded in the Reservoir subject to the provision contained in Rule 6 infra and note below :-

|   |   |             |
|---|---|-------------|
| 1 <sup>st</sup> January to 15 <sup>th</sup> April   | - | 2000 Cusecs |
| 16 <sup>th</sup> April to 15 <sup>th</sup> June     | - | Nil         |
| 16 <sup>th</sup> June to 30 <sup>th</sup> September | - | 2000 Cusecs |
| 1 <sup>st</sup> to 31 <sup>st</sup> October         | - | 1500 Cusecs |
| 1 <sup>st</sup> to 30 <sup>th</sup> November        | - | Nil         |
| 1 <sup>st</sup> to 31 <sup>st</sup> December        | - | 1500 Cusecs |

Note:- (1) During the period 16<sup>th</sup> June to 15<sup>th</sup> July, if necessary the inflow less than 2000 cusecs may be temporarily impounded to facilitate execution of repair works to sluice gates, stilling basins etc., The quantity so impounded shall be correctly assessed and let down immediately depending upon the requirement of lower down ayacut.

(2) The natural flows between 16<sup>th</sup> June and 30<sup>th</sup> September usually realized in small quantities below the limit flows, if impounded temporarily should be released on or before 30th September.

3.xxx

4. xxx

5.xxx

6. If the monsoon should fail and if any water is required during the periods 16<sup>th</sup> April to 15<sup>th</sup> June and 1<sup>st</sup> to 30<sup>th</sup> November such quantities of water as considered necessary for the existing ayacut below the Sathanur Dam and till now depending upon Ponniar flows may be released from the impounded storage, if any in the Reservoir with the prior approval of the Chief Engineer, Water Resources Organisation, Public Works Department, Chennai — 5.

Chief Engineer  
PWD, Puducherry

Engineer-in-Chief  
WRO, PWD, Chennai

**SCHEDULE—II**  
**VILLAGE WISE DETAILS OF THE AYACUT UNDER BANGARU CHANNEL**  
**FED BY SORNAVUR ANICUT**

| <b>I.</b> | <b>IN TAMIL NADU STATE THROUGH BANGARU CHANNEL</b> |                 |                                 |                 |
|-----------|--|-----------------|---------------------------------|-----------------|
| SL.NO.    | NAME OF TANK OR CHANNEL                            | AYACUT IN ACRES | VILLAGE-WISE AYACUT DETAILS     | AYACUT IN ACRES |
| 1         | 2  | 3               | 4                               | 5               |
| 1.        | Perichampakkam Tank                                | 85.00           | Perichampakkam-Villupuram Taluk | 85.00           |
| 2.        | Kalaiyur Manodu Tank                               | 105.66          |                                 |                 |
| 3.        | Kalaiyur Tippareddi Eri                            | 92.10           | Kalaiyur Village                | 350.06          |
| 4.        | Kalaiyur Ammal Eri                                 | 152.30          |                                 |                 |
| 5.        | Thiruppanampakkam Tank                             | 314.49          | Thiruppanampakkam Village       | 314.49          |
| 6.        | Ulleripattu Tank                                   | 160.54          | Ulleripattu Village             | 160.54          |
| 7.        | Karaimedu Tank                                     | 215.02          | Karaimedu Village               | 215.02          |
| 8.        | Nagappanur Tank                                    | 150.00          | Nagappanur Tank                 | 150.00          |
|           | <b>Total</b>                                       | <b>1275.11</b>  | <b>Total</b>                    | <b>1275.11</b>  |

Chief Engineer  
PWD, Puducherry

Engineer-in-Chief  
WRO, PWD, Chennai

**SCHEDULE—II ( Contd.)**

| <b>II.</b> | <b>IN PUDUCHERRY STATE THROUGH BANGARU CHANNEL</b> |                 |                             |                 |
|------------|--|-----------------|-----------------------------|-----------------|
| SL.NO.     | NAME OF TANK OR CHANNEL                            | AYACUT IN ACRES | VILLAGE-WISE AYACUT DETAILS | AYACUT IN ACRES |
| 1.         | Vannan Eri   | 83.00           | Vannameri Village           | 83.00           |
| 2.         | Manamedu Eri                                       | 178.00          | Manamedu Village            | 178.00          |
| 3.         | Kaduvanur Eri                                      | 156.00          | Kaduvanur Village           | 156.00          |
| 4.         | Seliamedu Eri                                      | 738.00          | Aranganur Village           | 738.00          |
| 5.         | Adhirangampattu Tank                               | 483.00          | Adhirangampattu Village     | 483.00          |
| 6.         | Kirumambakkam Tank                                 | 778.00          | Kirumambakkam Village       | 778.00          |
| 7.         | Bahour Tank  | 993.00          | Bahour Village              | 993.00          |
| 8.         | Uchimedu Tank                                      | 468.00          | Manapattu Village           | 468.00          |
| 9.         | Kilparikalpattu Tank                               | 223.00          | Kilparikalpattu Village     | 223.00          |
| 10.        | Melparikalpattu Tank                               | 98.00           | Melparikalpattu Village     | 98.00           |
| 11.        | Aratchikuppam Tank                                 | 63.00           | Aratchikuppam Village       | 63.00           |
| 12.        | Kuruvinatham Tank                                  | 183.00          | Kuruvinatham Village        | 183.00          |
| 13.        | Irulansandhi Village                               | 332.00          | Irulansandhi Village        | 332.00          |
|            | <b>Total</b>                                       | <b>4778.00</b>  | <b>Total</b>                | <b>4778.00</b>  |

Chief Engineer  
PWD, Puducherry

Engineer-in-Chief  
WRO, PWD, Chennai

**SCHEDULE—III**

**AYACUT BELOW SORNAVUR ANICUT FED BY OPEN HEAD  
CHANNELS IN CUDDALORE TALUK**

| SL.NO.      | VILLAGE                                  | AYACUT<br>IN<br>ACRES | TOTAL<br>IN<br>ACRES |
|-------------|--|-----------------------|----------------------|
|             | <u>(A) LEFT SIDE</u>                     |                       |                      |
| <b>I.</b>   | <b>Alagiyanatham Channel</b>             |                       |                      |
| a.          | Alagiyanatham Village                    | 450.00                | 949.35               |
| b.          | Irاندairamvilagam Village                | 178.00                |                      |
| c.          | Thiruppanampakkam Village                | 321.35                |                      |
| <b>II.</b>  | <b>Kanganankuppam Channel</b>            |                       |                      |
| a.          | Uchimedu Village                         | 6.86                  | 61.21                |
| b.          | Chinnakanganankuppam Village             | 23.57                 |                      |
| c.          | Periakanganankuppam Village              | 30.78                 |                      |
|             | <u>(B) RIGHT SIDE</u>                    |                       |                      |
| <b>III.</b> | <b><u>Thirukkandeeswaram Channel</u></b> |                       |                      |
| a.          | Thirukkandeeswaram Village               | 182.79                | 238.14               |
| b.          | Melpattambakkam Village                  | 55.35                 |                      |

Chief Engineer  
PWD, Puducherry

Engineer-in-Chief  
WRO, PWD, Chennai

**SCHEDULE—III (Contd.)**

|            |  |        |         |
|------------|--|--------|---------|
| <b>IV.</b> | <b>Marudadu Channel</b>                      |        |         |
| a.         | Marudadu Village                             | 175.42 | 574.16  |
| b.         | Nathapattu Village                           | 200.81 |         |
| c.         | Thottapattu Village                          | 93.24  |         |
| d.         | <u>Kondur Village</u>                        | 104.69 |         |
|            | Total Ayacut below SornaurAnicutby open head |        | 1822.86 |

Chief Engineer  
PWD, Puducherry

Engineer-in-Chief  
WRO, PWD, Chennai

## **MODIFIED SUMMARY RECORD OF DISCUSSIONS OF THE THIRD INTER-STATE MEETING ON THE PALAR WATER DISPUTE BETWEEN TAMILNADU & ANDHRA PRADESH HELD AT NEW DELHI ON 24<sup>TH</sup> DECEMBER, 2010**

The third inter-state meeting between the officers of Tamil Nadu (TN) and Andhra Pradesh (AP) on Palar Water Dispute was held under the Chairmanship of Chairman, CWC, on 24/12/2010 at 10:30 am in the Conference Room, CWC, Sewa Bhavan, R.K.Puram New Delhi. The list of officers present in the meeting is enclosed at Annexure-I.

Chairman, CWC welcomed the officers present in the meeting and after a brief round of introduction, Chairman, CWC in his opening remarks informed that in pursuance to decision taken in the 2<sup>nd</sup> inter-state meeting on the above issue held on 26.8.2008, studies have been carried out by Hydrology unit of CWC jointly with State representatives to assess the yield available at different points. He then asked CE, HSO, CWC to make a presentation on the studies carried out. Director, Hydrology(S) Dte CWC made a detailed power point presentation about the Hydrological studies done by the Study Group for arriving at the yield availability at different points in the Palar basin.

Officers from TN thereafter expressed their views as follows:

Chairman, Cauvery Technical Cell (CTC) cum Inter-state matters, Govt. of Tamil Nadu appreciated the work done by CWC for assessing the water availability. He stated that yield worked out by CWC now and that assessed by NWDA in 1992 are almost similar and substantiate the fact that the basin is a deficit basin. He further stated that there is under reporting of utilization by the states as the utilization shown in the report of Hydrological studies does not include drinking water requirements of the states. He further stated that there are about 1500 tanks in Karnataka as per the irrigation memoirs of Karnataka but utilization from 121 tanks having command with more than 40 ha only have been considered. AP has also not provided the planned utilization with the details of the Tanks and other channel systems. AP is already using the yield available between Karnataka border and Ganeshpuram. Utilisation of Tamilnadu as given in the report is also on lower side since some of existing ayacut of TN on U/S of Palar anicut have been left out in the studies. About 4 TMC of water is being used by TN for drinking water supply out of which 2 TMC is from surface water. Requirement of Kalpakam nuclear power station of 2 TMC being met from Palar river is also not taken into consideration. In view of the basin being deficient, there is no possibility to consider any new scheme in the basin.

CE, HSO, CWC informed that it is already stated in the report that utilization of Karnataka as shown in the report covers only projects with command of 40 ha and more. Chairman, CWC stated that the utilization figures have been taken as supplied by the concerned states

Principal Secretary (Projects), Government of Andhra Pradesh appreciated the efforts made by CWC for concluding the hydrological studies of Palar basin. He opined that study provides a concrete basis for further discussion and requested that on the basis of these studies CWC may evolve principles for deciding the share of the states. He informed that net outflow to the state of Tamilnadu from AP is 2.4 TMC. He further stated that as Chittoor is geographically located at an elevation of more than 1000 metre and is drought prone, taking up of this scheme of constructing a reservoir across Palar near Kuppam is very essential as Palar river is the only source of water in that region. He requested CWC to try to find an amicable solution of the issue.

Member (WP&P) CWC opined that Palar being a deficit basin, various measures to avoid wastage of water should be taken and more efficient methodologies for irrigation need to be adopted. Principal Secretary (Projects), Government of AP replied that AP is already practicing the efficient irrigation systems like sprinkler and drip irrigation, etc..

CE, IMO, CWC stated that the existing utilization of AP below Karnataka border and upto Ganeshpuram is 0.192 TMC and considering the yield available at Ganeshpuram approximately 0.3 TMC is unutilized and can be considered for planning of project by AP. Chief Engineer (ISWR), Govt. of AP stated that AP is getting surplus waters from Karnataka. Chairman, CWC stated that

being a minor irrigation project, Govt of AP is competent to frame their own proposal considering the unutilized flow from Karnataka, if any.

Chief Engineer (ISWR), Govt. of AP stated that because of the geographical location of the area the only source of water to that area is Palar river. He further stated that there are many ongoing projects in the State of TN, one of them being Mordana. Therefore the State of AP should not be barred from taking up new projects. Chairman, CTC, TN stated that the new projects being constructed in TN are for stabilization of existing ayacut only and no new ayacut is being created.

Chairman, CWC stated that yield data indicate that there is practically no water available at Avarankuppam and queried how TN get affected by AP taking up a project above that site. Chairman, CTC, TN replied that as of now some monsoon flows are available. Even this availability will be hampered if AP takes up a project u/s.

Member (WP&P), CWC suggested that considering yield available in each state and ensuring some releases for environmental considerations, efforts should be made to satisfy the requirements of both the States and States should come forward to find an amicable solution of the issue

Chief Engineer (ISWR), AP stated that some principle of sharing should be evolved which is applicable to both TN and AP. He further added that AP is not intercepting the yield available from the catchment lying below Ganeshpuram in AP and the same is available for use by TN.

Chairman, CWC stated that as a normal practice, in the absence of any agreement, every state in an interstate river basin is allowed to use and manage water available from their own catchment.

Chairman, CWC felt that there is scope for settlement of dispute. However state of TN has to show magnanimity and move forward. He enquired whether State of AP can reformulate their scheme for lower utilization of water and whether Govt of TN will be able to agree to that. Representative of State of TN did not agree but stated that they will place the request of AP before their Govt for consideration. However, subsequently representative of TN stated that it will be difficult for them to consider scheme for irrigation but scheme meant for drinking water supply only can be considered.

Chairman, CWC stated that Hon'ble Supreme Court has given us the Specific mandate of trying to resolve the dispute between the two states. However in spite of three meetings and carrying out the hydrological studies, it transpires that TN is not in favour of giving consent for the proposed project of AP at this stage. It is therefore proposed to inform Hon'ble Supreme Court accordingly. However, CWC shall be willing to facilitate if the states of A.P & T.N approach it with intension to settle the issue.

The meeting ended with vote of thanks to Chair.

#### **Annexure-I**

#### **Interstate meeting on Palar river issue held on 24.12.2010 at 10:30 hrs in the Conference Room of Sewa Bhavan, R.K. Puram, New Delhi**

#### **List of Participants**

##### *Central Water Commission*

- |    |                    |                        |
|----|--------------------|------------------------|
| 1. | Shri A.K.Bajaj     | Chairman, CWC          |
| 2. | Shri R.C.Jha       | Member(WP&P)           |
| 3. | Shri V.K.Chawla,   | Chief Engineer(IMO)    |
| 6. | Shri C.S. Mathur   | Chief Engineer,(HSO)   |
| 7. | Shri S.K.Srivastav | Chief Engineer, (PAO)  |
| 8. | Shri Bhopal Singh  | Director, Hydrology(S) |
| 9. | Shri B.P.Pandey    | Director (ISM)         |

10. Sh.N.V.SatishSeemakurti Dy. Director (ISM)
11. Sh. Ravi Ranjan Dy. Director, Hydrology(S)

**Government of Andhra Pradesh**

1. Shri S.K.Joshi Principle Secretary (Projects)
2. Shri P.Rama Raju Chief Engineer, (ISWR)
3. Shri B.Seeta Ramaiah Chief Engineer ,Minor Irrigation
4. Shri Bhavani Shankar Executive Engineer, o/o of CE(Hydrology)

**Government of Tamil Nadu**

1. Shri R. Subramanian Chairman, Cauvery Technical Cell cum Inter-State Matters
2. Shri K.Vijay Kumar SE, PWD, Palar Basin Circle
3. Shri. M.Selvaraju DCE(N), C.T.C cum ISM
4. Shri G.Vijay Kumar AEE, Palar basin
5. Shri. R.Radha AE, WRD, PWD

## **AGREEMENT OF CERTAIN INTER-STATE PROJECTS BETWEEN MAHARASHTRA AND MADHYA PRADESH**

The representatives of Maharashtra and Madhya Pradesh State, led respectively by their Minister of Irrigation and Power, Shri S.B. Chavan, and Minister of State for Irrigation, Shri R.P. Sharma, held discussions on the proposals regarding their irrigation projects<sup>18</sup> of inter-state interest namely,

- (1) Bagh Project,
- (2) Pench Hydel Project
- (3) Karwand Project, and
- (4) Tapi Project

on the 7<sup>th</sup> and 8<sup>th</sup> March, 1964 at Bhopal. As a result of discussions, the following agreed proposals were arrived at:-

### **III. KARWAND PROJECT**

The M.P. Government have communicated their requirements of water for the area falling within their State in the Basin of the Arunavati River, under their letter No.3050/2454/XIX/W/63 dated 23.9.1963. It is seen that M.P. propose to utilize the run-off from catchment area of 20 sq.miles amounting to 440 m.c.ft. at 75% dependability to irrigate an area of about 4400 acres in M.P. area, Maharashtra has no objection to M.P. utilizing all the waters M.P. needs for their projects in the Arunavati river basin. In view of this, the question of any dispute does not arise.

### **IV. TAPI PROJECT**

The upper Tapi multipurpose project, as envisaged by Maharashtra, roughly comprises:

- (a) a storage dam across Tapi near Gutighat,
- (b) (i) a storage-cum-diversion dam across Tapi near Nawtha;  
(ii) canals ex-Nawtha dam for irrigating areas in Madhya Pradesh and Maharashtra,
- (c) (i) storage-cum-diversion dam at Hatnur  
(ii) canal on the left bank for irrigating areas in Maharashtra
- (d) (i) dam power house at Gutighat dam  
(ii) dam power house at Nawtha dam

The main storage was originally located near Tukaithal, a short distance upstream of the Khandwa Hingoli railway bridge. With this dam site the preponderance of submergence could have been in Madhya Pradesh. With a view to reducing submergence in M.P., other sites, further upstream, were considered and the site near Gutighat has since been found to be quite attractive. The submergence in M.P. is reduced, while the dam site also appears to be better than the Tukaithal site. It is proposed to provide the main storage at the Gutighat Dam. Water from this storage will be released in a regulated manner through a power house located at the foot of the dam. Investigations for foundations of this dam are in progress.

The height to which the dam at Nawtha can be built is limited by the existence of the recently constructed railway bridge across Tapi near Tukaithal. This imposes a limitation on the capacity of the Nawtha storage. The effect of this on the canal command in the M.P. and Maharashtra areas is being

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<sup>18</sup> First two projects namely Bagh and Pench projects are in Godavari basin and next two namely Karwand and Tapi projects are in Tapi basin in Maharashtra. Hence first two are omitted from this page and mentioned under Agreements in Godavari basin.



studied and, if required and justifiable, the railway authorities could be requested to examine the feasibility of raising or relocating the bridge.

The canals ex-Nawtha dam will first irrigate areas in M.P. to the maximum possible extent and then cross over into Maharashtra. The water surplus to the requirements of the Nawtha canals, will be passed through a power house at the foot of the Nawtha dam for generating power.

Lower down, in Maharashtra, a weir with a small storage is proposed to be constructed at Hatnur and a canal on the left bank-ex-Hatnur weir will be constructed to irrigate large areas in the Khandesh districts.

M.P. Government has requested the Maharashtra government to send them the project report when it is ready. It is, however, considered that the M.P. engineers should be appraised of the details collected so far, so that if they have any suggestions to offer these can be considered, discussed given effect to.

The requirements of the M.P. in so far as the Upper Tapi project is concerned, are that the maximum possible irrigation to areas in M.P. should be provided from the Nawtha canals. M.P. engineers have indicated the future requirement of irrigation project upstream of Gutighat as 0.5 m.c.ft. They have agreed to send the details of this requirement to Maharashtra. The precise figure will be arrived at after mutual discussions.

The Government of the two States will communicate to each other, as early as possible, the ratification of the above agreed proposals.

Sd/-

(S.B. CHAVAN)

Minister of Irrigation, Power, Maharashtra.

Sd/-

(R.P. SHARMA)

Minister of State for Irrigation, Madhya Pradesh.

## **AGREEMENT REACHED REGARDING CERTAIN INTER-STATE IRRIGATION AND HYDEL PROJECTS BETWEEN MADHYA PRADESH AND MAHARASHTRA**

The Chief Minister of Maharashtra, Shri V.P. Naik, and the Chief Minister of Madhya Pradesh, Shri Shyam Charan Shukla met and discussed certain interstatal irrigation and hydel projects on the 16<sup>th</sup> May, 1969, in Bombay. They were assisted by other Ministers and Officers as mentioned below:-

| <u>MAHARASHTRA</u>  | <u>MADHYA PRADESH</u>  |
|---|--|
| 1. Shri S.B. Chavan,<br>Minister Irrigation and Power.  | 1. Shri V.R. Uikey,<br>Minister for Industries.  |
| 2. Shri D.R. Pradhan<br>Chairman, Maharashtra State Electricity<br>Board                              | 2. Kum. Vimla Verma,<br>Minister of State for Irrigation &<br>Electricity.                 |
| 3. Shri N.S. Pardasani,<br>Secretary, Irrigation and Power  | 3. Shri J.K. Bajaj,<br>Minister of State for Industries                                    |
| 4. Shri V.B. Manerikar,<br>Chief Engineer and Joint Secretary,<br>Irrigation and Power                | 4. Shri Nand Ram Das Balkavi Bairagi,<br>Minister of State for Publicity.                  |
| 5. Shri E.C. Saldanha,<br>Chief Engineer (Water Resources) & Joint<br>Secretary, Irrigation and Power | 5. Shri B.P. Pathak<br>Development Commissioner  |
|   | 6. Shri S.B. Lal<br>Secretary, Irrigation and Electricity                                  |
|   | 7. Shri K.L. Handa<br>Irrigation Adviser and Chief Engineer<br>(Major Irrigation Projects) |
|   | 8. Shri D.S. Sinha,<br>Chief Engineer (Irrigation)   |

2. The progress made so far in the implementation of the agreement dated 18<sup>th</sup> December, 1968 was generally reviewed. After detailed discussions, the Chief Minister reached the following agreements<sup>19</sup>:-

### 3. UPPER TAPI (STAGE II)

(i) The Government of Maharashtra may proceed with the preparation of the detailed project report regarding the main storage at Kharia-Gutighat with power generation at the foot of the dam.

(ii) The Government of Madhya Pradesh will conduct further investigations to be completed by March, 1970, regarding the utilization of water in the Madhya Pradesh territory. If necessary, the scheme will be modified to provide for increased irrigation in Madhya Pradesh.

- 4. SUKHI }
- 5. ANER }

---

<sup>19</sup> Agreements about projects in Godavari basin is omitted from this page and mentioned under agreements in Godavari basin.

The Government of Madhya Pradesh agreed to the utilization by the Government of Maharashtra of 60% of the run-off from the Madhya Pradesh catchment in the case of Sukhi Project and 30% in the case of Aner Project. Similar concessions will be given by the Maharashtra Government in respect of Sukhi Nala Scheme and Khokri Nala Scheme in Burhanpur Tehsil of Madhya Pradesh, on a reciprocal basis.

6. WAI:

The Government of Madhya Pradesh agree to the submergence of about 50 acres of their lands instead of 10 acres agreed to earlier with a view to extending the scope of the scheme.

7. CONSTITUTION OF INTERSTATAL CONTROL BOARD FOR JOINT IRRIGATION AND HYDRO-ELECTRICAL PROJECTS.

With a view to ensuring efficient, speedy and economical investigation and execution of Joint Projects, the Government of Maharashtra and Madhya Pradesh agree, in principle to constitute an Interstatal Control Board. The details of the composition, functions and powers of the Board will be settled in due course.

8. The Governments of the two States will communicate to each other, as early as possible, the ratification of this agreement.

Sd/-  
(SHYAMA CHARAN SHUKLA)  
Chief Minister  
Madhya Pradesh

Sd/-  
(V.P. NAIK)  
Chief Minister  
Maharashtra

BOMBAY, THE 16<sup>TH</sup> May, 1969.

Government of Maharashtra

No.LSQ 1086/(1330)/ND Desk  
Irrigation Department,  
Mantralaya, Bombay 400 032  
Dated: 30.4.86

From

B.N. Masur,  
Under Secretary to the  
Government of Maharashtra.

To

The Deputy Director (TE-II),  
Central Water Commission,  
Government of India,  
Sewa Bhavan, R.K.Puram,  
New Delhi 110 066.

Subject: Inter-State agreement for sharing of Tapi Water between Maharashtra and  
Madhya Pradesh.

...

Sir,

I am directed to refer to your letter No.8/83/85 dated the 8<sup>th</sup> April 1986, on the above subject and to send herewith a copy of Supplementary Note on sharing of water of Tapi Basin. The details of the agreement reached are mentioned in this Supplementary Note.

D.A.: Supplementary Note.

Yours faithfully,

Sd/-

(B.N. Masur)

Under Secretary to the Government of Maharashtra,  
Irrigation Department.

NOTE: AWARD FOLLOWS IN THE NEXT PAGE.

## **AGREEMENT DATED 12<sup>th</sup> JANUARY, 1986 FOR SHARING OF TAPI WATERS BETWEEN MADHYA PRADESH AND MAHARASHTRA**

### Sharing of water of Tapi Basin<sup>20</sup>

Ukai Project in Gujarat has been cleared by the Government of India subject to upstream reservation of 6 MAF (261.4 TMC) at 75% dependability for Maharashtra and Madhya Pradesh. The sharing of this water (261.4 TMC) was under consideration with the States of Maharashtra and Madhya Pradesh.

In the 21<sup>st</sup> meeting of Maharashtra – Madhya Pradesh Inter State Control Board held on 12<sup>th</sup> January 1986 at Nagpur, sharing of this quantum of water (261.4 TMC) at 75% dependability was decided by the Board as below:-

|     |                |   |                  |
|-----|----------------|---|------------------|
| i)  | Madhya Pradesh | - | 70 TMC           |
| ii) | Maharashtra    | - | <u>191.4 TMC</u> |
|     | Total          |   | <u>261.4 TMC</u> |

As this quantum of water (261.4 TMC) has been exclusively reserved upstream of Ukai project which is near the border of Maharashtra and Gujarat, it is not necessary to consult the State of Gujarat for sharing of this water. Most of the catchment area upstream of Ukai project of Gujarat lies in Maharashtra and Madhya Pradesh only. The sharing of water which clearly does not belong to Gujarat as mentioned above cannot be said to be damaging the interest of Gujarat.

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<sup>20</sup> Technical Committee Report on Ukai Project (Iyengar Committee) estimated yield of Tapi basin as 9.18 MAF at 75% dependability. It allocated 3.18MAF of water for the area below Ukai including Narmada area and 6.0 MAF (261.4 TMC) for the basin above Ukai .

# **MEMORANDUM OF UNDERSTANDING FOR UTILISATION OF 140.00 M.C.M. (5 TMC) OF WATER FROM UKAI RESERVOIR (GUJARAT) BY GOVERNMENT OF MAHARASHTRA**

This Memorandum of Understanding is made at Mumbai on 7<sup>th</sup> Day of January in the year of Two Thousand Fifteen between the Governor, State of Maharashtra exercising executive powers of the Government of State of Maharashtra herein after referred to as the “Government of Maharashtra” (which expression unless repugnant to the context be deem to include his successor in office or permitted assigns) of the First Part and the Governor, State of Gujarat exercising executive powers of the Government of Gujarat hereinafter referred to as the “Government of Gujarat” (which expression unless be repugnant to the context be deem to include his successor in office or permitted assigns) of the other part.

## **1.0 Preamble**

Ukai Dam has been constructed by Government of Gujarat on Tapi River and commissioned in 1973. It has a live storage of 7080 MCM (Million Cubic Meter) (250 Thousand Million Cubic Feet).

It is agreed in principle to allocate upto 140.00 M.C.M. (5 TMC) water from the Ukai Reservoir to Maharashtra for the project affected persons of Sardar Sarovar rehabilitated in Maharashtra State. The above allocation will be subject to availability of storage at Ukai reservoir and shall be in proportion to the available live storage at the end of each monsoon. Government of Maharashtra shall be permitted to draw water upto 82.30 m (270 feet) water surface elevation so as to meet the allocation so decided.

## **2.0 Proposal**

- 2.1 The 140.00 M.C.M. (5 TMC) water from the Ukai Reservoir is to be made available as mentioned in above para 1.0 to the Government of Maharashtra by the Government of Gujarat every year from the date of signing of this Memorandum of Understanding.
- 2.2 The water so obtained from Government of Gujarat from Ukai Reservoir is to be utilized by the Government of Maharashtra for the purpose of drinking water and irrigation.
- 2.3 Schemes for Lifting of water from Ukai Reservoir are to be constructed by the Government of Maharashtra at village Hatoda, Taluka Nizar, district Tapi, Gujarat State and village Panbare, Taluka Nizar, District Tapi, Gujarat State and/or at the places found suitable for this purpose in the submergence area of reservoir for which necessary survey and investigation is to be carried out by the Government of Maharashtra. Government of Gujarat will assist to obtain power supply for such Lift Irrigation Scheme if located in Gujarat & necessary prevailing energy charges will be borne by Government of Maharashtra.
- 2.4 Location, type of intake structures, measuring devices etc. shall have to be finalized in consultation with Superintending Engineer, Ukai Circle (Civil), Ukai. The foot valves of lifting schemes shall be at a safe level, just below the MDDL @ RL 82.30 m (270 feet).
- 2.5 The quantity of water shall be measured at the intake points and the total quantity for each year shall not exceed 140 MCM (5 TMC).
- 2.6 The quantity of water allotted from the Sardar Sarovar Project to Maharashtra is 309.00 MCM (10.914 TMC). The allotment of 140 MCM (5 TMC) to Government of Maharashtra from Ukai reservoir by Gujarat will reduce the water to be made available from Sardar Sarovar Project to (309-140) 169.00 MCM (5.914 TMC).

### **3.0 Sharing of cost**

Cost of water made available to the Government of Maharashtra within the limit prescribed in Clause No.1.0 and 2.1 or cost towards maintenance of Ukai Dam or any other cost towards of water in Ukai reservoir is to be borne entirely by the Government of Gujarat.

Cost of construction, surveys, investigation, maintenance and operation of Lift Schemes along with cost for approach channel and the cost of energy charges required for running and maintenance of such schemes is to be borne entirely by the Government of Maharashtra.

### **4.0 Monitoring**

The monitoring of the construction activities will be carried out by the designated Superintending Engineers of Government of Maharashtra and Government of Gujarat simultaneously.

- 4.1 The records of such daily/hourly intake shall be maintained by the officials of Government of Maharashtra in such form as is mutually acceptable to the S.E., Ukai Civil Circle, Ukai and S.E., Tapi Irrigation Development Corporation, Jalgaon.
- 4.2 The representative of the Government of Gujarat shall have full right to check the intake structures, measuring devices etc. and the records maintained at any time, and shall have right to enter any such property of Government of Maharashtra for the above purpose.
- 4.3 Weekly report of each intake shall be separately submitted to the Superintending Engineer, Ukai Circle (Civil), as agreeable to him.

### **5.0 Adjudication in case of Disputes and Differences**

In the event of any disputes or differences arising out of any of or part of the clauses of or interpretation of any of the part of this MOU between the parties hereto, the same shall be referred to the Chief Secretary of Government of Maharashtra and Chief Secretary, Government of Gujarat for resolution. In the event of non resolution of any dispute by the Chief Secretaries of two states the same shall be referred for adjudication to person as Arbitrator or panel of Arbitrators as mutually agreed upon by both the parties whose decision shall be final and binding on Government of Maharashtra and Government of Gujarat. The provision of Indian Arbitration and Conciliation Act, 1996 shall be applicable to such disputes.

The Arbitration proceeding shall be held at Mumbai only.

Principal Secretary (WR)  
Water Resources Department  
Government of Maharashtra.

Special Secretary (WR)  
Narmada, Water Resources, Water  
Supply & Kalpsar Department  
Government of Gujarat

For and on behalf of  
Government of Maharashtra

For and on behalf of  
Government of Gujarat

In the presence of  
V.M.Kulkarni  
Chief Engineer & Joint Secretary  
Mumbai

In the Presence of  
S.R.Mahakal  
Superintending Engineer  
Valsad

**AGREEMENT DATED 29<sup>th</sup> SEPTEMBER, 1992 BETWEEN STATE OF GUJARAT, UNION TERRITORIES OF DADRA & NAGAR HAVELI AND DAMAN & DIU**

**AGREEMENT**

This agreement made at Madhuban Dam Damanganga Project on the 29<sup>th</sup> day of September, one Thousand Nine hundred ninety two between the President of India acting through the Administrator, Union Territory of Dadra and Nagar Haveli (hereinafter called the "Administration of Dadra and Nagar Haveli") of the first part and the President of India acting through the Administrator, Union Territory of Daman and Diu (hereinafter called the "Administration of Daman & Diu") of the second part and the Governor Gujarat (hereinafter called the "Government of Gujarat") of the third part, parties of the first, second the third part sometimes hereinafter called the 'Beneficiaries'.

WHEREAS the Planning Commission, Government of India, has by its letter No.II-10(i) (25)-72 A&T dated 23.12.1972 appended hereto as Annexure-I to the Government of Gujarat accepted the execution of Daman Ganga Reservoir project, hereinafter called project and the latest salient features whereof are as described in Annexure-II.

AND WHEREAS the Planning Commission, Government of India, has allowed the execution of the Project in accordance with the financial provisions approved by the Planning Commission in State Plans.

AND WHEREAS the Administration of Dadra and Nagar Haveli and Daman and Diu and the Government of Gujarat have agreed to execute the Project by the Government of Gujarat and to share the cost and benefits of the same on the terms and conditions appearing hereinafter.

NOW THEREFORE THIS DEED WITNESSETH and the parties hereto hereby agree as follows:

**1.0 DAMANGANGA RESERVOIR PROJECT**

It is mutually understood that the Project envisages construction of a composite dam (earth-cum-masonry dam) across the river Damanganga near village Madhuban in Dharampur Taluka of Valsad District in Gujarat State with full reservoir level at 79.86 m. (seventy nine point eighty six) to irrigate 51138 hectare through construction of canals and distribution system. The storage in the reservoir also provide for water supply of 58 Mgd for industrial and domestic use. The project also envisages generation of incidental hydro-power in the river bed powerhouse for which purpose 2 Units; each of 1000 KW will be installed for which only civil works have been proposed to be completed at present.

1.1 The benefits of irrigation from the project shall be the supply of 420.50 Mm<sup>3</sup> of water out of which 332.74 (three hundred thirty two point seventy four)Mm<sup>3</sup> (*ie.* 162.93 Mm<sup>3</sup> for Kharif and 169.81 Mm<sup>3</sup> for Rabi) shall be for Gujarat State, 62.16 (sixty two point sixteen) Mm<sup>3</sup> (*ie.*30.43 Mm<sup>3</sup> for Kharif and 31.73 Mm<sup>3</sup> for Rabi) for Union Territory of Dadra and Nagar Haveli and 25.60 (twenty five point sixty) Mm<sup>3</sup> (*ie.* 12.54 Mm<sup>3</sup> for Kharif and 13.06 Mm<sup>3</sup> for Rabi) for Union Territory of Daman and Diu.

If one or more of the beneficiaries does not utilise fully, its share of irrigation water (on the basis of Physical area benefited till volumetric measurement come in force as stated hitherto) the surplus water shall be offered to state of Gujarat for sale and the state of Gujarat on behalf of all beneficiaries, shall arrange to sell such surplus water to the extent possible to the desiring



beneficiary/beneficiaries for use on any of the purpose envisaged in the Project. The Government of Gujarat shall recover the cost on the basis of interest on capital for such surplus water and shall be credited to the account of the party offering the surplus. In case the surplus is offered by one or more than one party and the entire surplus cannot be sold the cost on the basis of interest on capital shall be credited among the parties in proportion to quantities of surplus water offered by them.

Until the volumetric measurement of water available from the Project is started, the quantum of water as utilised for irrigation shall be decided on the basis of crop-pattern, and water requirement for each crop as approved by the World Bank for this project (as per Annexure-III, attached hereto) and the actual area irrigated in case of each of the beneficiaries.

1.2 A regulated supply of water at the rate of 0.2399 Mm<sup>3</sup> per day [52.75 (fifty two point seven five) million gallons per day] shall be released from the dam into the river for uses other than irrigation. In that, state of Gujarat shall use 0.1818 Mm<sup>3</sup> per day (40 (forty) million gallons per day), the Union Territory of Dadra and Nagar Haveli shall use 0.058 Mm<sup>3</sup> per day (12.75 (twelve point seven five) million gallons per day). In the river each beneficiary shall have to make its own arrangement for conveyance and use of its water as available in the river, immediately at the downstream of the dam. For the Union Territory of Daman and Diu, 0.0238 Mm<sup>3</sup> per day ( 5.25 (five point two five) million gallons per day) of water from the dam shall be conveyed through the canal.

1.3 The Hydro power in the river bed power house will be generated after the *units are* installed and commissioned by Gujarat Electricity Board at the instance of state of Gujarat. The beneficiaries will review this item before hydro-power generation is entrusted to Gujarat Electricity Board. The revenue realised through GEB for generation of power shall be shared between state of Gujarat, the *Union* Territory of Dadra and Nagar Haveli and Union Territory of Daman and Diu in the ratio of 91 (ninty one): 17 (seventeen) : 7 (seven) respectively.

## 2.0 CONSTRUCTION OF THE PROJECT

The project including head-work, canal system upto outlet block and Hydro Electric Plant shall be executed by the Government of Gujarat.

### 2.1 COST OF THE PROJECT

#### (a) SHARING OF COST

Complete cost of Unit-I, viz head-work and its all works appurtenant thereto shall first be apportioned between irrigation and water supply functions in the ratio of 85 (eighty five) : 15 (fifteen) and thereafter the beneficiary-wise allocations shall be worked out as under:

Actual cost of completion of unit-I chargeable to Irrigation shall be distributed in the ratio of 91 (ninety one) for Gujarat State, 17 (seventeen) for Union Territory of Dadra and Nagar Haveli and 7 (seven) for Union Territory of Daman and Diu.

Actual cost on completion of Unit-I chargeable to water supply shall be shared between the State of Gujarat, the Union Territory of Dadra and Nagar Haveli and the Union Territory of Daman and Diu in the ratio of 40 (forty) : 12.75 (twelve point seven five) : 5.25 (five point two five).

Actual cost on completion Unit-II viz.the Canal System shall be shared between the beneficiaries in the ratio of 91 (ninty one) for the State of Gujarat, 17 (Seventeen) for the Union Territory of Dadra and Nagar Haveli and 7 (seven) for the Union Territory of Daman and Diu.

Actual cost of completion of Unit-HI viz. Hydro-power shall be shared between the beneficiaries in the ratio 91 (ninety one): 17 (seventeen). : 7 (seven) by the State of Gujarat, the Union Territory of Dadra and Nagar Haveli and Union Territory of Daman and Diu respectively.

Proportion of benefits claimable by each of the beneficiaries namely the state of Gujarat, the Union Territory of Dadra and Nagar Haveli and the Union Territory of Daman and Diu shall be in proportion of 91:17:7 respectively for irrigation and hydro-power and 40:12.75:5.25 respectively for water supply other than irrigation and Hydro-power.

(b) ACQUISITION OF LAND

Lands required for submergence due to reservoir created by construction of dam, preliminary works, canals, distribution systems, buildings, roads, quarries etc. shall be acquired by the respective state or Union Territory as the case may be and made available to State of Gujarat as may be required. Forest land or any other Government land required in connection with the project activities of any kind shall be immediately transferred by the respective State or Union Territories as the case may be. The cost of acquisition of land and rehabilitation of displaced persons shall be debited to the Project. All the participating Governments shall permit, subject to their rules, regulations etc. as in force from time to time, the quarrying of all types of construction materials such as rubble, lime, sand, gravel, earth etc. that may be required for the purpose of construction of the project in their territories.

(c) REHABILITATION

The persons displaced from the State of Gujarat and Dadra and Nagar Haveli shall be rehabilitated in their respective territories unless otherwise agreed to between the beneficiaries. Land required for rehabilitation of the displaced persons shall be provided by the respective beneficiaries.

Uniform norms shall be adopted by the beneficiaries for rehabilitation of people displaced due to acquisition of land area submerged by Damanganga Reservoir. The cost of rehabilitation shall be debited to the Project.

### 3.0 OPERATION AND MAINTENANCE OF THE PROJECT

The dam shall be operated and maintained by the State of Gujarat and the cost of operation and maintenance shall be shared by the three beneficiaries in the same ratio as the sharing of capital cost of the project. Similarly, operation and maintenance of civil works of hydro-power project shall be carried out by the State of Gujarat and the cost on that account shall be shared by the three beneficiaries in the same ratio as laid down in respect of the sharing of capital cost of hydropower project. The canal system including distribution system upto outlet shall be completed and tested as per the detailed guidelines of the Government of Gujarat (1985) and be maintained and operated by the Government of Gujarat till any or all of the beneficiaries decide to separate out and undertake to do it itself/themselves for the area falling within their territories. The cost of operation and maintenance of the canal system including distribution system upto outlet (when maintained entirely by the State of Gujarat) shall be shared by the beneficiaries in the same ratio as laid down in respect of sharing of capital cost of the project. The period during which the work of operation and maintenance of the distribution system falling within the jurisdiction of the beneficiaries remains under the complete charge of the State of Gujarat, the personnel from the Union Territories will be employed on deputation basis by the State of Gujarat with a view that these personnel are adequately trained for operation and maintenance works of the distribution system.

After the maintenance and operation of Canal system is taken over by the individual beneficiary, the works which actually lie within the jurisdiction of the beneficiary and are wholly meant for him/them shall be handed over by the State of Gujarat to respective beneficiary who shall run and maintain the same thereafter. The main canal and the branches serving more than one party shall, however, be operated and maintained by the State of Gujarat and the cost of operation and maintenance of the same shall be shared by the beneficiaries in the same ratio as laid down in respect of sharing of capital cost of the project.

In case of a distributary/minor/sub-minor passing through more than one territory, each of the beneficiaries shall ensure that the portion of such canal passing through its territory is satisfactorily maintained so, as not to adversely affect the derivation of benefits by the other beneficiary.

3.1 The administration of both the Union Territories shall permit and give facilities to the authorised staff of the state of Gujarat to maintain and oversee the dam and works appurtenant thereto including reservoir, canals, canal system, buildings, roads etc.. lying within their territories as may be necessary.

3.2 There shall be a Committee constituted by Government of Gujarat comprising of the representative from State of Gujarat, the Union Territory of Dadra and Nagar Haveli and the Union Territory of Daman and Diu to lay down guidelines/directives for and to solve the disputes arising out of operation and maintenance of the project, who shall meet as and when required. Any dispute which cannot be resolved by the Committee, shall be referred to Member (P&P), Central Water Commission whose decision shall be final and binding on the beneficiaries.

#### 4.0 SHARING BENEFITS IN A LEAN YEAR

In a lean year when the availability of water is less, 100% (hundred percent) reservation for drinking and industrial use shall be made and on the balance water available, the benefits of irrigation and hydro-electric power shall be reduced on corresponding pro-rata basis for each beneficiary unless otherwise mutually agreed by the parties in writing.

#### 5.0 PROVISION OF FUNDS

Each of the three beneficiaries shall provide adequate funds in the ratio of sharing of capital cost of the project from year to year in accordance with the requirement of budget for the project to ensure that the work of construction of the project is completed-within the stipulated period. The funds shall also be provided by each of the three beneficiaries for operation and maintenance of dam and canal system from year to year in accordance with the requirement of project for operation and maintenance and in the ratio of the shares of the capital cost of the project.

#### 6.0 FISHING RIGHTS

The residents of the Union Territory of Dadra and Nagar Haveli and Gujarat who are actually affected by the Damanganga Project Reservoir submergence shall be granted fishing rights. In addition, all those who are traditionally dependent on fishing and who stand affected by the Project shall also be given the fishing rights.

IN WITNESS WHEREOF the Administrator, Union Territory of Dadra and Nagar Haveli, Silvassa for and on behalf of The President of India and the Administrator, Union Territory of Daman and Diu for and on behalf of the President of India and the Chief Engineer (Damanganga) and Joint

Secretary to Government of Gujarat for and on behalf of Governor of Gujarat have hereinto set their respective hands and the seal of their offices of the day and year first above written.

sd/- 29.9.92

1. ( K. S. BAIDWAN )

Administrator

Union Territory of Dadra and Nagar Haveli

for and on behalf of. the President of India in the presence of

Witness: 2. sd/-

Witness: 1. Sd/-

( J.N. NANDA )

Dy. Adviser

Planning Commission

S.E., PWD, Darnan.

2. Sd/

( K. S. BAIDWAN )

Administrator.

Union Territory of Daman and Diu

For and on behalf of the President of India in the presence of:

Witness: 1. Sd/  
( S.C.HIREMATAN )  
E. E., PWD, Daman

witness: 2. Sd/  
( P.R. Chopra )  
Dy. Director, CWC

3. sd/-

( G.D.Patel )

Chief Engineer (Damanganga

Joint Secretary, Government of Gujarat.

For and on behalf of the Governor of State of Gujarat in. the presence of:

witness:1. sd/  
( R.T. DALAL )  
ADC, Surat

Witness: .2. Sd/-  
( S.J. DESAI )  
S.E , D.F.C.

No.II-10(I) (25)/72-A&T  
Bharat Sarkar,  
(Government of India)  
Yojna Ayog  
(Planning Commission)

Yojana Bhavan  
Parliament Street  
New Delhi  
Dated the 23<sup>rd</sup> Dec., 1971

To

The Secretary, P.W.D.,  
Government of Gujarat  
Gandhinagar

**Sub:** Fourth Plan - Irrigation Programme Damanganga Reservoir  
Project (Gujarat) - Acceptance of.

Sir,

I am directed to convey that the Damanganga Reservoir Project estimated cost Rs.2440 lakhs the salient features of which are given in the enclosed annexure, has been found acceptable.

2. The Project may be executed in accordance with Financial provisions approved by the Planning Commission in the State plans.

Yours faithfully,

Sd/  
( P.W. PARWANI )  
For Secretary, Planning Commission

Encl: Salient Features.

## SALIENT FEATURES OF DAMANGANGA RESERVOIR PROJECT ( GUJARAT )

The Scheme envisages construction of a composite dam, 3018 metre long, on Damanganga River near village Madhuban of Dharampur taluka in Bulsar District and a Right Bank Canal to irrigate an area of 46,540 Ha. (36827 hectares in Gujarat State, 6880 hectares in Dadra and Nagar Haveli and 2833 hectares in Daman). Besides irrigation, the scheme will also cater to water supply requirement to the extent of 58 mgd (40 mgd for Gujarat, 12.75 mgd for Dadra Nagar Haveli and 5.25 mgd for Daman). The Project also proposes to generate power of about 1000 KW.

|    |   |           |                        |          |               |
|----|---|-----------|------------------------|----------|---------------|
| 1. | Estimated cost Rs.2440 lakhs to be shared as below: |           |                        |          | (Rs. Lakhs..) |
|    | Item  | Gujarat   | Dadra and Nagar Haveli | Daman    | Total         |
|    | 1. Irrigation                                       | 1694.60   | 316.64                 | 130.44   | 2141.68       |
|    | 2. Water supply                                     | 190.64    | 60.76                  | 25.02    | 276.42        |
|    | 3. Power  | 16.86     | 3.15                   | 1.29     | 21.30         |
|    | Total. . . .  | 1902.10   | 380.55                 | 156.75   | 2439.40       |
|    | Say. . . . .  | 1902.00   | 381.00                 | 157.00   | 2440.00       |
| 2. | Benefits.   | 36827     | 6880                   | 2833     | 46540         |
|    |   | (Hacts. ) | (Hacts. )              | (Hacts.) | (Hacts. )     |

## (a) Irrigation

|    |              |        |          |
|----|--------------|--------|----------|
| a) | Kharif       | 12331  | Hactares |
| b) | Rabi         | 1 7353 | Hactares |
| c) | Hot Weather  | 5606   | Hactares |
| d) | perennials   | 11251  | Hactares |
|    | Total. . . . | 46540  | Hactares |

## (b) Water Supply

|    |                      |       |      |
|----|----------------------|-------|------|
|    |                      | 58    | Mgd. |
| a) | Gujarat              | 40    | Mgd. |
| b) | Dadra & Nagar Haveli | 12.75 | Mgd. |
| c) | Daman                | 5.25  | Mgd. |

## (c) Power

1 MW Installed Capacity.

3. Cost per hectares of irrigated area      Rs.4650  
 4. Benefits cost ratio      1.60  
 5. Financial return      1.64% (At end of six years after completion)  
 6. Water rates betterment, levy and Irrigation cess.  
 A.

|    |                   |                      |
|----|-------------------|----------------------|
| A. | Water Rates Crop. | Rate per Hectare Rs. |
| i) | Paddy             | 59/-                 |

|       |                        |          |
|-------|------------------------|----------|
| ii)   | Oil seeds              | 49/-     |
| iii)  | Wheat                  | 81/-     |
| iv)   | Vegetable (R.Seasonal) | 59/-     |
| v)    | Vegetable (8 monthly)  | 157/-    |
| vi)   | Green Manure           | 12/-     |
| vii)  | Vegetable H.W          | 98/-     |
| viii) | Light perennials       | 328/-    |
| ix)   | Heavy perennials       | 505/-    |
| B     | Betterment levy        | Rs.494/- |
| C.    | Irrigation Cess        | Rs.6/-   |

**DAMANGANGA RESERVOIR PROJECT**  
Salient Features: (As under Construction)

1. Name of Reservoir : Damanganga Reservoir
  
2. Location:
  - a) River : Damanganga
  - b) Village : Madhuban
  - c) District/State : Valsad/Gujarat
  - d) Location of Dam : Lat 20° 10' N  
: Long 73° 5' E
  
3. Hydrology:
  - a) C.A. i) Maharashtra : 1318 sq. Km. (509 sq. miles)
  - ii) Gujarat : 376 sq. Km. (145 sq. miles)
  - iii) U.T. : 119 sq. Km. (46 sq. miles)
  - Total : 1813 sq. Km. (700 sq. miles)
  - b) Average rainfall : 2382 mm. (93.77 inch.)
  - c) Maximum rainfall : 3780 mm (148.80 inch)
  - d) 75% dependable run-off : 3150.4 Mm<sup>3</sup> (111.23 TMC)
  - from entire catchment  
(700 sq. miles)
  - e) –do- from Gujarat and : 639.7 Mm<sup>3</sup> (22.58 TMC)
  - UT (191 sq. miles)
  - f) Max routed flood : 22040 cumec (7.78 lac cusec)
  - g) Design flood : 26850 cumec (9.48 cusec)
  
4. Reservoir:
  - a) Gross Capacity : 567 Mm<sup>3</sup> (20.0 TMC)
  - b) Dead Storage : 65 Mm<sup>3</sup> (2.29 TMC)
  - c) Live Storage : 502 Mm<sup>3</sup> (17.71 TMC)
  - d) Gross Utilisation : 529 Mm<sup>3</sup> (18.67 TMC)
  - e) Net utilisation : 472.12 Mm<sup>3</sup> (16.67 TMC)
  - f) Crest level of spillway : 65.83 m. (216 ft.)
  - g) FRL : 79.86 m. (262 ft.)
  - h) HFL : 82.40 m. (270.27 ft.)
  - i) Top of dam : 85.60 m. (280.76 ft.) + 1.0 parapet wall
  
5. Dam



|    |   |   |
|----|---|---|
|    | a) Type   | : Composite   |
|    | b) Length                                       | : 2870 m (9414 ft)  |
|    | c) Maximum height from deepest foundation level |   |
|    | Masonry dam                                     | : 49.84 m (163.48 ft)                                     |
|    | Earth dam                                       | : 58.6 m (192.2 ft)                                       |
| 6. | Flood disposal                                  |   |
|    | a) Type   | : Gated spillway  |
|    | b) Location                                     | : Main Gorge  |
|    | c) Length of spillway                           | : 191.11 m  |
|    | d) Maximum head over crest                      | : 16.57 m (54.35 ft)                                      |
|    | e) shape of crest                               | : Ogee  |
|    | f) No and size of gates                         | : 10 Radial gates, each of size 15.55 m.14.02 m (51'X46') |
| 7. | canals  |   |
|    | a) Capacity                                     | : 34.76 cumec (1227 cusec)                                |
|    | b) Type   | : Lined   |
| 8. | Benefits  |   |
|    | A. Irrigation                                   |   |
|    | a) Culturable Command area(CCA)                 | Hects. acres  |
|    | Gujarat   | 41,023 1,01,327   |
|    | Dadra& Nagar Haveli                             | 7,044 17,399  |
|    | Daman   | 3,071 7,585   |
|    | Total   | 51,138 1,26,311   |
|    | b) Intensity of Irrigation                      | 101% of CCA i.e. 51,649 Ha (1,27,573 acres)               |
|    | B. Water Supply                                 |   |
|    | Gujarat   | 40 mgd  |
|    | Dadra& Nagar Haveli                             | 12.75 mgd   |
|    | Daman   | 5.25 mgd  |
|    | Total   | 58 mgd  |
|    | C. Power  | 2.0 MW( To be shared by beneficiaries)                    |
| 9  | Submergence Details                             |   |
|    | a) Submergence at FRL                           | 4368 ha (10,789 Acres)                                    |
|    | b) Villages coming under submergence            | 12 fully and 24 partly                                    |
|    | c) Families affected                            | 2361 Nos  |

## DAMANGANGA RESERVOIR PROJECT

Statement showing cropping pattern (percentage of CCA)

Planting dates and growing season

(Finalised in consultation with World Bank experts and  
Agronomist PPM Cell) June—July, 1979

CCA - 51138 Ha.

| Sr.<br>No. | Cropping Pattern  | Percentage<br>% | Area<br>(ha.) | Period of first<br>planting (FN) | Growing Season<br>(FN) |
|------------|-------------------|-----------------|---------------|----------------------------------|------------------------|
| I.         | KHARIF            |                 |               |                                  |                        |
| 1.         | Paddy -1          | 15              | 7671          | 13-19                            | 7                      |
| 2.         | Paddy -2          | 35              | <u>17898</u>  | 20-20                            | 8                      |
|            |                   |                 | 25569         |                                  |                        |
| II.        | TWO SEASONAL      |                 |               |                                  |                        |
| 3.         | Vegetables – 2    | 3               | 1534          | 13-4                             | 16                     |
| III.       | PERINNIALS        |                 |               |                                  |                        |
| 4.         | Sugarcane         | 5               | 2557          | 22-21                            | 24                     |
| 5.         | Orchards          | 10              | 5114          | 13-12                            | 24                     |
|            | Total for Kharif. | 68              | 34774         |                                  |                        |
| IV.        | RABI              |                 |               |                                  |                        |
| 6.         | Wheat             | 10              | 5114          | 21-4                             | 8                      |
| 7.         | Rape Mustard      | 3               | 1534          | 22-4                             | 7                      |
| 8.         | Pulses            | 12              | 6136          | 21-4                             | 8                      |
| 9.         | Sorghum           | 3               | 1534          | 19-1                             | 7                      |
| 10.        | Lucerne           | 2               | 1023          | 19-8                             | 14                     |
| 11.        | Vegetables – 1    | 3               | 1534          | 19                               | 8                      |
|            | Total for Rabi    | 33%             | 16875         |                                  |                        |
|            | Total intensity   | 101%            | 51649         |                                  |                        |

# **MEMORANDUM OF UNDERSTANDING AMONGST THE STATE OF GUJARAT, THE STATE OF MAHARASHTRA AND THE UNION GOVERNMENT ON DAMANGANGA – PINJAL LINK PROJECT AND PAR-TAPI-NARMADA LINK PROJECT**

## **Name & Address of Parties**

1. Government of Gujarat, Narmada, Water Resources, Water Supply Department & Kalpsar Department, Sardar Bhawan, Sachivalaya, Gandhinagar (Gujarat).
2. Government of Maharashtra, Irrigation & Flood Control Department, Mantralaya, Mumbai.
3. Union Government, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi.

## **Introduction**

- (a) WHEREAS the Union Government considers the programme for interlinking of rivers as of national importance and will workout ways and means for project funding mechanism including share of the States, etc., so as to be able to template the project within the stipulated time frame.
- (b) AND WHEREAS the Union Government, in consultation with the States, intends to create appropriate institutional arrangements involving State/ Union Government for operation and control of waters in accordance with Agreements reached.
- (c) AND WHEREAS full cooperation of the States towards the task of linking of rivers in the overall interest of the Nation is required:

## **NOW, THEREFORE, IT IS HEREBY MUTUALLY UNDERSTOOD BY THE PARTIES AS FOLLOWS:**

1. Union Government shall identify and decide the organizational framework necessary for preparation and completion of the 'Detailed Project Report' (hereinafter referred as DPR) of Damanganga- Pinjal link and Par - Tapi- Narmada link.
2. Specific MOUs as required will be entered into amongst the States of Gujarat, Maharashtra and Union Government based on the DPR of Damanganga-Pinjal link and Par -Tapi - Narmada link. Agreements reached on scope of each of the links, sharing of costs and benefits and arrangements for management and control of water etc.
3. The Maharashtra State Government will get the benefits through the Damanganga - Pinjal Link Project by way of augmentation of water supply to meet the domestic water requirement of Mumbai city, while Government of Gujarat will be free to utilize remaining water spilled from Bhugad & Khargihill dams. In pursuance of the said objective, broad consensus and 'in principle' understanding was arrived at through consensus building efforts of the Union Government and the States of Gujarat and Maharashtra to ensure optimum and integrated planning, successful implementation and effective monitoring and operation of Damanganga - Pinjal Link Project under National Perspective Plan. The issue of water sharing, quantum of diversion in link canal, exploring the possibilities of hydropower generation in Damanganga basin, extending the link to Tansa reservoir etc., raised by States will be addressed and resolved before the finalisation of the DPR.
4. It is proposed that the Gujarat State will get the benefits of Par -Tapi - Narmada link Project through en-route irrigation from the link canal and also in the drought prone Saurashtra and Kutch region by way of substitution. The sharing of hydro power produced in the power house located in this link project will also be studied during the preparation of DPR. In pursuance of the said objective, broad consensus and 'in principle' understanding was arrived at through consensus building efforts of the Union Government and the States to ensure optimum and integrated

planning, successful implementation and effective monitoring and operation of Par - Tapi- Narmada Link Project under National Perspective Plan.

5. The feasibility of utilization of water by Maharashtra State in their territory by lifting water over the western divide will also be examined during preparation of DPR. The issue of compensating the quantity of water contributed from Maharashtra catchments raised by Maharashtra State will be decided by States mutually after preparation of DPR when diversion quantity through this link is firmed up.
6. At DPR stage, the size of canal from Ukai Dam to Narmada canal will be decided based on simulation studies, keeping in view the request of Government of Gujarat about retaining the size of canal as designed in Feasibility Report of Par - Tapi - Narmada link considering the diversion of water from Tapi Basin.
7. The preparation of DPR of both the links, i.e. Par - Tapi- Narmada and Damanganga - Pinjal link will be taken up together by National Water Development Agency, an autonomous body under the Ministry of Water Resources on behalf of Union Government.
8. Both the States shall enter into and abide by Agreements with the Union Government and amongst themselves in the larger interest of combating natural calamities of floods and droughts in different regions of the country.
9. Any review / amendment of the MOU shall be done if the same is agreeable to by all the parties.
10. This is being executed amongst the State of Gujarat, State of Maharashtra and Union Government for preparation of the DPRs of Damanganga –Pinjal Link Project and Par - Tapi- Narmada Link Project.

Signed at New Delhi on this day 3<sup>rd</sup> May, 2010.

(Narendra Modi)  
Chief Minister of Gujarat  
FOR STATE OF GUJARAT

(Ashok Shankarrao Chavan)  
Chief Minister of Maharashtra  
FOR STATE OF MAHARASHTRA

(Pawan Kumar Bansal)  
Minister of Water Resources  
FOR UNION GOVERNMENT

**AGREEMENT DATED 6<sup>th</sup> APRIL, 1990 EXECUTED BETWEEN THE GOVERNMENTS OF GOA AND MAHARASHTRA FOR EXECUTION AND MANAGEMENT OF TILLARI IRRIGATION PROJECT**

This Agreement made at Bombay this SIXTH day of APRIL in the year One thousand Nine Hundred and Ninety between the Governor of Goa exercising the executive power of the Government of the State of Goa (hereinafter called the “Government of Goa” which expression shall unless the context does not so admit include his successors in office representing the State of Goa and assigns) of the one part and the Governor of Maharashtra exercising the executive power of the Government of the State of Maharashtra (hereinafter called the “Government of Maharashtra” which expression shall unless the context does not so admit, include his successors in office representing the State of Maharashtra and assigns) of the other part.

WHEREAS Government of Goa and Government of Maharashtra have agreed that an Irrigation Project on the river Tillari, short particulars whereof are set out in Annexure-I hereto (hereinafter referred to as “the said project) shall be executed as herein set out as a joint project of the said two Governments.

AND WHEREAS the total estimated cost as per the administratively approved estimates in March 1979 of the said Project is Rs.4520 lakhs (Rupees four thousand five hundred twenty lakhs only) as shown in the detailed statement of estimated cost hereto annexed as Annexure-II.

AND WHEREAS it has been agreed between the parties hereto that the said project is to be executed and maintained after completion and the total cost thereof is to be shared and paid by the parties in the manner hereinafter set out and the rights, duties and liabilities of parties in connection therewith shall be as thereinafter specified.

AND WHEREAS the Planning Commission, Government of India has allowed the execution of the said Project in accordance with the financial provisions therefore made in the State Plans as have been approved by the Planning Commission.

Now this agreement witnesseth and it is hereby agreed and declared by and between the parties hereto in connection with the said irrigation project as follows:

1. The said project envisages the execution of the following work viz.
  - (a) Construction of a composite dam (earth-cum-masonry dam) across the River Tillari, near village Tillariwadi in Sawantwadi Taluka of Sindhudurg District in the State of Maharashtra with full reservoir level/high flood level at RL 113.20 metre/RL 113.70 metre to impound 462.17 M.Cum. (16.32 TMC) of water.
  - (b) Construction of pick up weir near village Terwanmedhe to utilize the tail race water of Tillari Hydro Electric Project; and
  - (c) Construction of canals to irrigate about 23,654 (Twenty three thousand six hundred fifty four) hectares, that is 6676 (six thousand six hundred seventy six) hectares in the territories of the State of Maharashtra and 16,978 (Sixteen thousand nine hundred and seventy eight) hectares will be in the territories of the State of Goa.
- 2(a) The construction of the Head works i.e. Tillariwadi dam and pick up weir near Terwanmedhe will be carried out by the Government of Maharashtra and construction of common length of canals and branches will be carried out by the respective State in whose territory they lie.
- (b) The construction of the portions of the canals, branches and distributaries lying in Maharashtra

territory and serving Maharashtra area exclusively will be carried out by the Government of Maharashtra and those lying in Goa territory and serving Goa area exclusively will be carried out by the Government of Goa.

- 3(i) The actual cost of the Head works of the said project, together with the proportionate cost of the work to be executed for the utilization of the Tail race discharge of the Tillari Hydro Electric Project, which proportionate cost, it has been agreed, is to be included in the cost of the said project and which aggregate cost is estimated at present Rs.3257 lakhs, is to be borne and paid by the Government of Goa, and the Government of Maharashtra in the same proportion as the projected gross utilization of water in the respective territories of the said two States.
  - (ii) The proportion of projected utilization of water between the Government of Maharashtra and the Government of Goa as now worked out is in the ratio of 26.70:27.30 subject to final adjustment as per the project cleared by the Planning Commission.
  - (iii) The cost of any other items such as catchment area treatment etc. which would be included in the estimates later on, shall also be shared by the Government of Maharashtra and Government of Goa in the same proportion as the proposed gross utilization of water in the respective territories of the said two States i.e. 26.70:73.3 as worked out at present.
  - (iv) The cost of common portions of the main canals, which is estimated at Rs.627.43 lakhs, shall be shared by the Government of Goa and Government of Maharashtra on the basis of cumec kilometers apportionable for the requirement of each State.
  - (v) The cost of the rest of the main canal, branches and distributaries serving exclusively the territories of one State only shall be borne by that State along.
  - (vi) The sharing of cost in respect of Head Works and common canal shall be tentative and subject to adjustments depending upon the actual benefit derived by the State of Maharashtra and the State of Goa.
  - (vii) All these conditions are also applicable mutatis mutandis to the estimated cost of the project after compliance of remarks of Central Water Commission and also revision of the project in subsequent years according to which the share of cost of each State would be finally worked out. The tentative estimated cost of the project in December, 1989 after compliance of Central Water Commission remarks is about Rs.21722 lakhs.
- 4.(a) Land required for the said project namely for construction of dam, preliminary works, canals, distribution systems, buildings, roads, quarries, etc. shall be forthwith acquired by the Government in whose territory the same is situated and the Government of Goa shall hand over possession of land required for work of the said project to the Government of Maharashtra as and when required by the Government of Maharashtra. The cost of acquisition of land and rehabilitation of displaced persons shall be debited to the said project. Also, the cost of land situated outside the command area, if required, for the purpose of rehabilitation, shall be included in the cost of the said project. The cost of acquisition of such land situated outside the command area including the cost of lift irrigation, if any, shall be borne by the Government of Goa and the Government of Maharashtra in the ratio of 73.3 : 26.7.
  - (b) Both the participating Government shall permit the other Government to quarry all types of construction materials such as rubble, lime, sand, gravel, earth etc. required for the purpose of construction of work on the said project and lying in its territory.
  - (a) For coordinating execution of the said project, any operation and maintenance thereof after completion, there shall be a Standing Committee comprising of officers from the two States as mentioned below viz.

- |     |   |                  |
|-----|---|------------------|
| (1) | Chief Engineer,<br>Irrigation Department, Konkan Region,<br>Government of Maharashtra,<br>Bombay. | Chairman         |
| (2) | Chief Engineer,<br>Irrigation Department,<br>Government of Goa                                    | Vice-Chairman    |
| (3) | Superintending Engineer<br>Government of Maharashtra,<br>(Connected with Tillari Project)         | Member           |
| (4) | Superintending Engineer,<br>Government of Goa,<br>(Connected with Tillari Project)                | Member           |
| (5) | Collector, Sindhudurg,<br>Government of Maharashtra   | Member           |
| (6) | Collector of North Goa<br>Government of Goa.  | Member           |
| (7) | Executive Engineer,<br>Government of Goa,<br>(Incharge of Tillari Project)                        | Member           |
| (8) | Executive Engineer,<br>Government of Maharashtra,<br>(Incharge of Tillari Project)                | Member Secretary |

(b) The Standing Committee shall meet, not less than once in three months. The minutes of the meeting of the Standing Committee incorporating the decisions taken by the Standing Committee shall be placed before the next meeting of the Control Board referred to in clause 6 thereof.

6. For the overall supervision of the detailed investigation, design, and construction of the said project and operation and maintenance thereof after completion, a Control Board shall be constituted.

The composition of the Control Board shall be as under:-

|    |  |          |
|----|--|----------|
| 1. | Minister for Irrigation,<br>Government of Maharashtra,<br>(If the Chief Minister of Goa is holding the<br>portion of Irrigation then he will be the<br>Chairman of Control Board | Chairman |
| 2. | Minister for Irrigation<br>Government of Goa.  | Member   |
| 3. | Minister of State for Irrigation<br>Government of Maharashtra  | Member   |
| 4. | Secretary to Government of<br>Maharashtra, Irrigation Department   | Member   |
| 5. | Secretary to Government of Goa,<br>Irrigation Department.  | Member   |

|     |   |        |
|-----|---|--------|
| 6.  | Secretary to Government of Maharashtra<br>Finance Department.                           | Member |
| 7.  | Secretary to Government of Goa,<br>Finance Department                                   | Member |
| 8.  | Secretary to Government of Maharashtra<br>Revenue Department                            | Member |
| 9.  | Secretary to Government of Goa,<br>Revenue Department                                   | Member |
| 10. | Chief Engineer,<br>Irrigation Department<br>Konkan Region,<br>Government of Maharashtra | Member |
| 11. | Chief Engineer,<br>Irrigation Department,<br>Government of Goa                          | Member |

The Superintending Engineer, Government of Maharashtra in charge of the said project shall act as the non-Member Secretary of the Board. The Superintending Engineer, Government of Goa, dealing with the said project shall be nominated by the Government of Goa, to work as a Joint Secretary of the Board.

- (b) Normally at least one meeting of the Board shall be held in a year to sort out the problems concerning various aspects of the said project. Additional meetings may be called with the permission of the Chairman to discuss and solve urgent problems concerning the said project.
- (c) The Control Board shall frame its own rules for the conduct of its business and the procedure to be followed by it.
- (d) The location of the office of the Secretary of the Board will be decided by the Board.

7. The programme of construction of the Head works and the portion of the canal and distributaries in the territories of the State of Maharashtra shall be prepared by the Government of Maharashtra and that for the portion of the canal and distributaries in Goa territory shall be prepared by the Government of Goa, and thereafter, the same shall be got approved by the Standing Committee and finally shall be put up before the Control Board. This being a joint project, the designs, plans and estimates of the said project elements common to both the States i.e. Head works at Tillarwadi and pick-up weir at Terwanmedhe and common length of canals and distributaries, etc. shall be available to the Engineers of the Government of Goa for their suggestions. Designs of the canals and canal structures in Goa territory shall be prepared by the Government of Goa.

8. From year to year, both the parties shall provide adequate funds as per their respective shares, in accordance with the requirement of the budget for the said project, to ensure that the said project is executed as per prescribed time schedule and completed within the stipulated period. The Government of Goa shall pay to the Government of Maharashtra in the first week of every quarter beginning from April of every financial year, according to the annual schedule of payment that may be mutually agreed to, its share of cost which is to be incurred during the year for the construction of head works, common length of canal and other common works and services. In the event of two consecutive defaults in payment of quarterly deposits by Government of Goa, interest at 12% per annum will be charged from Government of Goa from the 1<sup>st</sup> day of next quarter. As the provision in the budget of the Government of Goa is required to be cleared by the Planning Commission in advance the Government of Maharashtra shall inform the Government of Goa about the yearly budget requirement for this work by October of the previous year.



9. The submergence area on account of the said project lies entirely in Maharashtra. The project displaced persons from the submerged area shall be rehabilitated as may be mutually agreed to by both the Governments and the necessary facilities shall be given to the project displaced persons in accordance with the Maharashtra Resettlement of Project Displaced Persons Act, 1976. Government of Goa and Government of Maharashtra will give preference in employment to project affected persons in public employment in their respective states.

10. The operation and maintenance of the Head Works and common length of canal in Maharashtra shall be looked after and carried out by the Government of Maharashtra while the operation and maintenance of common length of canal in Goa shall be looked after and carried out by the Government of Goa. The cost of operation and maintenance of the Head works and common length of canal shall be shared by the Government of Maharashtra and Government of Goa in the ratio of 26.7:73.3. The operation and maintenance of canals, branches and distributaries lying in and serving exclusively one State shall be done by the respective State at its cost.

11. Water rates for irrigation by lift to the project affected persons shall be the same as those for flow irrigation. The less recovery which may occur due to difference in charging water rates of flow irrigation to lift irrigation of project affected persons shall be shared in the proportion of 26.7:73.3 by Government of Maharashtra and Government of Goa. This facility will be given for first 10 years after which period it may be reviewed.

12. If in a lean year, it is not possible to meet the full requirements of irrigation and water supply, the requirements of water supply shall be met in full first and the resultant shortage shall be shared in the same proportion as the proportion in which the irrigation benefits acquired by each party are shared.

13. In the event of any dispute or difference arising out of this agreement between the parties hereto, the same will be referred to adjudication to such person(s) as may be mutually agreed by both the parties whose decision thereon shall be final and binding. The provisions of the arbitration Act, 1940 shall apply to such disputes.

14. The Government of Maharashtra shall bear and pay the stamp duty on this agreement and duplicate thereof.

IN WITNESS WHEREOF THE Governor of Goa has caused the Chief Secretary to the Government of Goa to set his hand and affix his official Seal hereto for and on his behalf and the Governor of Maharashtra has caused The Chief Secretary to the Government of Maharashtra to set his hand and affix his official seal hereto for and on his behalf the day, month and year first herein above written.

Signed, Sealed and Delivered by  
Shri P.V. JAYAKRISHNAN  
Chief Secretary to the Government of  
Goa for and on behalf of the Governor of  
Goa in the Presence of:

Sd/-  
Chief Secretary  
Govt. of Goa  
Secretariat-Panaji

Witnesses:

1. \_\_\_\_\_ Sd/-\_\_\_\_\_  
R.C. DHARWAD, C.E.

2.       Sd/-  
B.M. NADKARNI, S.E.

Signed Sealed and Delivered by  
Shri D.M. SUKTHANKAR  
Chief Secretary to the Government of  
Maharashtra for and on behalf of the  
Governor of Maharashtra in the  
presence of:

Sd/-  
Chief Secretary to the  
Government of Maharashtra  
General Administration Department  
Mantralaya, Bombay 400 032

Witness

1.       Sd/-  
S.T. DEOKULE
2.       Sd/-  
R.G. KULKARNI, Chief Engineer I.D.  
Konkan Region,  
Bombay.

**TILLARI IRRIGATION PROJECT****Short particulars**

|      |  |                          |  |
|------|--|--------------------------|--|
| 1)   | Scope of Project   | i)                       | Construction of Storage Dam at Tillariwadi, Taluka Sawantwadi, Dist. Sindhudurg.       |
|      |  | ii)                      | Construction of pick-up weir at Terwanmedhe, Taluka Sawantwadi, District – Sindhudurg. |
|      |  | iii)                     | Construction of left and right bank canals.  |
| 2.   | <u>Salient details</u>                                   | <u>Main Dam</u>          | <u>Pickup Weir</u>   |
| i)   | Gross Utilisation  | 500.07                   | 26.45 Mcum   |
| ii)  | Gross storage  | 462.17 Mcum              | 0.416 Mcum   |
| iii) | Full Reservoir Level                                     | 113.20 m.                | 63.50 m.   |
| iv)  | High Flood Level   | 113.70 m.                | 64.00 m.   |
| v)   | Top of dam   | 118.30 m                 | 66.40 m  |
| vi)  | Canal Bed level  | 61.50 m                  | 60.50 m  |
| 3.   | <u>Irrigation</u>  |                          |  |
| i)   | Gross Command  | 28336 ha.                |  |
| ii)  | Irrigation command                                       | 23654 ha.                |  |
|      |  | (6676 ha. in Maharashtra |  |
|      |  | 16978 ha. in Goa)        |  |
| 4.   | Cost of project as Administratively approved In March'79 | Rs.4520.48 lakhs         |  |

**ANNEXURE-II****Statement showing estimated cost of Tillari Irrigation Project as per Administrative Approval of December 1979 and proportionate share of Government of Maharashtra and Government of Goa**

Rs. In lakhs

| Sl.No | Item  | Estimated Cost | Share of Government of Maharashtra | Share of Government of Goa |
|-------|---|----------------|------------------------------------|----------------------------|
| 1.    | Head works of Main Dam and Pick-up weir   | 3023.92        |                                    |                            |
|       | Add proportionate cost of utilizing tail race discharge of Tillari Hydro Electric Project | +233.35        |                                    |                            |
|       | Total for Head Works  | 3257.27        | 869.69<br>(26.7%)                  | 2387.58<br>(73.3%)         |
| 2.    | Common length of canal  | 627.43         | 247.24                             | 380.19                     |
| 3.    | Main Canal, Branches and distributaries in respective areas                               | 635.78         | 211.52                             | 424.26                     |
|       | <u>Total for canals</u>   | 1263.21        | 458.76                             | 804.45                     |
|       | GRAND TOTAL   | 4520.48        | 1328.45<br>(29.40%)                | 3192.03<br>(70.60%)        |

**SUMMARY RECORD OF DECISION TAKEN AT THE INTER-STATE MEETING HELD ON 14<sup>th</sup> OCTOBER, 1965 BETWEEN THE GOVERNMENT OF MADRAS<sup>21</sup> AND KERALA REGARDING CERTAIN INTER-STATE IRRIGATION AND HYDEL PROJECTS (i) PANDIAR-PUNNAPUZHA AND (ii) CHALIPUZHA-CHOLATTIPUZHA SCHEMES**

PRESENT:

Shri. R. Venkataraman,  
Minister for Industries, Madras.

Prof. M.S. Thacker,  
Member, Planning Commission.

Shri N.E.S. Raghavachari,  
Adviser to the Government of Kerala.

Shri R. Prasad,  
Adviser to the Governor of Kerala.

Shri B.S. Nag,  
Adviser, Planning Commission, New Delhi.

Shri R. Thirumalai,  
Secretary,  
Public Works Department, Madras.

Shri S. Ananthakrishnan, Secretary,  
Public Works Department, Kerala.

Shri V.P. Appadurai, Chairman,  
Madras State Electricity Board.

Shri R.P. Nair, Chief Engineer (Civil),  
Kerala State Electricity Board.

Shri A.M. Mani, Chief Engineer (Electrical),  
Kerala State Electricity Board.

Shri T.P. Kuttiammu, Chief Engineer,  
(General and Irrigation), Trivandrum.

The following subject discussed:

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<sup>21</sup> Government Madras is now known as Government of Tamil Nadu.

1. Pandiar-Punnapuzha<sup>22</sup> scheme formulated by the Madras Government.
2. The basis of Chalipuzha-Cholattipuzha scheme.

It was agreed that the Pandiar-Punnapuzha scheme<sup>23</sup> as formulated by the Madras State Electricity Board can be implemented subject to the following.

1. No changes should be made in the levels proposed in the Scheme Report without prior concurrence of Kerala.
2. The Power generation and discharge should be such as to allow a regular flow throughout the year subject to the availability of water and not on a seasonal basis.
3. The entire cost of this Project will be borne by Madras. Kerala will be free to utilise the tail-race flowing into their territory from this Project, without any liability for payment on this account.

## 2. CHALIPUZHA<sup>24</sup>-CHOLATTIPUZHA SCHEME:

The original scheme of Kerala was to have a combined scheme for ChalipuzhaCholattipuzha. Instead it was agreed that Kerala can implement its own scheme on the Chalipuzha river. The scheme formulated by the Madras State Electricity Board on the Cholattipuzha was agreed to be-investigated and executed by the Madras State Electricity Board subject to the conditions that the actual cost of the project and the cost of operation and maintenance of the Project and the Power generated shall all be shared equally between the Kerala and Madras States. The Madras State Electricity Board will furnish the scheme report for the Cholattipuzha scheme when ready to the Kerala State Electricity Board for their concurrence.

Sd/

(R.Thirumalai), 14-10-65  
Secretary, P.W.D., Madras

Sd/

(S.Ananthakrishnan), 14-10-65  
Secretary, P.W.D., Kerala

Sd/

(V.P. Appadurai), 14-10-65  
Secretary, M.S.E.B.

Sd/

(B.S. Nag), 14-10-65  
Adviser, P.C.

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<sup>22</sup> Pandiar and Punnapuzha rivers are tributaries of Chaliyar river, a west flowing short length river of Kerala joining Arabian sea south of Kozhikode town. Pandiar and Punnapuzha rivers originate in Tamil Nadu and flow to Kerala.

<sup>23</sup> In an inter-State meeting held on 8/3/1974, both states agreed to implement the scheme as per this agreement.

<sup>24</sup> Chalipuzha river is another tributaries of Chaliyar river.

**THE AGREEMENT REACHED BETWEEN THE CHIEF MINISTERS OF KERALA AND TAMIL NADU AND THE UNION MINISTER OF IRRIGATION AND POWER DURING DISCUSSIONS HELD ON 10.5.1969 AT TRIVANDRUM REGARDING THE PARAMBIKULAM ALIYAR PROJECT AND OTHER RIVER WATER QUESTIONS OF KERALA AND TAMIL NADU.**

The Chief Ministers of Kerala and Tamil Nadu and the Union Minister of Irrigation and Power held discussions on 10.5.69 at Trivandrum regarding the Parambikulam Aliyar project and other river waters questions of Kerala and Tamil Nadu.

The following decisions were taken:

**I. Parambikulam Aliyar project:**

It is agreed to proceed with the construction of the Parambikulam Aliyar project with the following modifications to the earlier agreed decisions on the subject between Kerala and Tamil Nadu States.

1. As Tekkadi dam will be omitted, water will be permitted to be drawn by Tamil Nadu from the Nirar river as already agreed to earlier in 1958. The total quantum of water that will be drawn and utilised by Tamil Nadu from Parambikulam, Peruvairipallam and Tunakadavu and proposed Nirar reservoirs will not exceed 16.5 T.M.C. This is exclusive of water to be drawn from the Nirar weir.

Peruvairipallam and Tunakadavu dams will be constructed by Tamil Nadu and water will be used in Parambikulam Aliyar system.

2. 2.5 T.M.C. of water may be diverted by Tamil Nadu from Anamaliar for use in parambikulam Aliyar system. This, however, will be done after the construction of Edamalayar reservoir is completed by Kerala Government. Kerala Government will undertake projects in the Periyar system without further reference to Tamil Nadu.

3. a) No joint gauging of all the rivers concerning the project have been done so far. As per the earlier decisions the actual flows available in the rivers and the surplus that will be diverted to Kerala areas have to be ascertained by gauging to be done by both Tamil Nadu and Kerala states for period of 10 years. This joint gaugings will be taken up immediately.

b) For water regulation, a joint Board consisting of Chief Engineers in charge of Irrigation and representatives each of the Electricity Boards of both the States will be set up.

4. It had been agreed earlier in 1958 that excess over 16.5 TMC upto a maximum of 2.5 TMC may be used in Kerala. For this purpose, Kerala has requested a high level canal branching off from Sethumadai canal or from Sirkarpathy Power House. The cost of this canal in Tamil Nadu area will be borne by Kerala Government. Waters in excess of 19 TMC, if any, will be let down into the Chalakudy basin, as agreed to earlier.

5. The quantum of 7.25 TMC agreed to earlier may be made available every year at the Kerala border. This is exclusive of the flood waters which cannot be used for irrigation. Forthightly accounts of

the water will be reported by Tamil Nadu to Kerala.

## II. BHAVANI BASIN:

Kerala will utilise 2.5 TMC of water in the Bhavani basin for irrigating Attapadi valley lands after the construction of Siruvani Reservoir.

## III. PAMBAR BASIN:

Kerala will utilise 0.6 TMC of water in Pambar valley to irrigate lands in Kerala.

## IV. COIMBATORE WATER SUPPLY

A reservoir of suitable capacity will be constructed on the Siruvani river to enable reliable drinking water supply of 1.3 TMC to Coimbatore. The cost of the Siruvani dam project in Kerala limits will be borne by the Tamil Nadu Government. The construction of the Siruvani dam will be done by Kerala Government according to the designs and specifications of Tamil Nadu Government and as approved by Kerala. The operation of the reservoir for supplying drinking water will be done by a joint Board of Engineers of both the States.

## V. COMMENCEMENT OF WORK

Tamil Nadu and Kerala Governments may proceed with the construction of the projects after the details in regard to Parambikulam Aliyar and Siruvani Projects in terms of the agreed decisions taken at the present meeting are worked out in a month time.

## VI. KABINI AND ALLIED MATTERS

The question of Kabini and allied matters will be further discussed between Kerala and Tamil Nadu.

Sd/  
(E.M.S. Nambudiripad)  
Chief Minister, Kerala

Sd/  
(M. Karunanithi)  
10.5.69  
Chief Minister,  
Tamil Nadu

Sd/-  
(Dr.K.L. Rao)  
10.5.69  
Union Minister for  
Irrigation and Power



## **KERALA-TAMIL NADU AGREEMENT ON PARAMBIKULAM ALIYAR PROJECT-1970**

### **TAMIL NADU-KERALA INTER-STATE AGREEMENT ON THE DEMISING OR SHARING OF WATERS OF THE RIVERS IN THE BHARATHAPUZHA, CHALAKUDI AND PERIYAR BASINS**

1. AGREEMENT made this twenty-ninth day of May of one thousand nine hundred and seventy between the Governor of Tamil Nadu (hereinafter called "the Government of Tamil Nadu" which expression shall, where the context so admits, include his successors in office and assigns) of the ONE PART and the Governor of Kerala (hereinafter called "the Government of Kerala" which expression shall, where the context so admits, include his successor in office and assigns) of the OTHER PART.
2. WHEREAS, the Government of Tamil Nadu proposed to construct dams, weirs and reservoirs across and on the Sholayar, the Parambikulam Ar, the Thunacadavu Ar, the Thekkady Ar and the Peruvapallam Ar, all tributaries of Chalakudi River, Aliyar and Palar tributaries of Bharathapuzha and also across and on the Nirar which is tributary of the Periyar river, for the diversion of the waters of the said rivers and of Anamalayar, a tributary of the Periyar river for the benefit of the State of Tamil Nadu.
3. WHEREAS the Government of Kerala also proposed to construct dams, reservoirs and weirs on and across some of the said rivers and Anamalayar, a tributary of the Periyar river for the benefit of the State of Kerala.
4. WHEREAS with a view to arriving at a settlement on the question of utilisation of waters of the aforesaid rivers, the Chief Ministers/Ministers of both Governments have met in conferences and entered into agreements on 9-11-1958, 4-7-1960 and 10-5-1969 and the representatives and technical officials of both the Governments have also met in conferences and after examining the details have come to an agreement.
5. NOW THESE, presents witness and the parties hereto agree:- (a) (i) to the construction of storage and/or division works on the rivers as specified in Schedule-I appended,  
  
ii) to the demising or sharing as the case may be of waters of these rivers in the manner and subject to the conditions and limitations specified in Schedule-II,  
  
iii) to the sharing of the expenditure consequent on the construction and maintenance of the works referred to in sub-clause (i) above in the manner specified in Schedule-III,  
  
iv) to the establishment of a Joint Water Regulation Board for the purpose of regulating the flow of waters in accordance with the terms of this agreement as specified in Schedule-V.  
  
b) Rights, liabilities and obligations other than those mentioned above shall be as specified in Schedule-IV.
- c) The Government of Tamil Nadu and the Government of Kerala agree that that the arrangements embodied in the agreement be open to review in the light of the experience gained and to such modifications as may be mutually agreed upon, as a result of such review at the expiry of thirty years from the ninth day of November of one thousand nine hundred and fifty-eight and once in every thirty

years thereafter.

d) This agreement shall be deemed to have come into force on the ninth day of November of one thousand nine hundred and fifty-eight.

c) The schedules and annexures shall form part of the agreement.

f) Every dispute, doubt, difference or question which may, at any time arise between the parties hereto touching on or arising out of or in respect of this agreement or the subject matters thereof shall be referred to the Arbitration of an Arbitrator to be agreed upon between the parties or failing agreement, to two arbitrators one to be appointed by each party hereto and in case of difference of opinion between the two arbitrators, to an Umpire appointed by the said two arbitrators, not later than one month from the date of such difference of opinion and the decision of the arbitrator or such arbitrators or Umpire, as the case may be shall be final and binding on the parties.

SCHEDULE - 1  
(SEE PARAGRAPH 5(a) (i) OF THE AGREEMENT)

RIVERS AND WORKS

RIVERS

This Agreement deals with the utilisation of the flows in the following rivers and streams flowing into them, for the production of hydro electric power and irrigation, for drinking water supply, industrial use and for any other purpose for the benefit of the States of Kerala and Tamil Nadu:

- i) Anamalayar and Nirar, both of which are tributaries of the Periyar river;
- ii) Sholayar, Parambikulam Ar, Thunacadavu Ar, Perivaripallam Ar and Thekkady Ar, all of which are tributaries of the Chalakudy river and
- iii) Palar and Aliyar which are tributaries of the Bharathapuzha.

The above mentioned rivers which flow partly or wholly through Tamil Nadu/ Kerala and the works covered by this Agreement are indicated in the map appended<sup>25</sup>.

WORKS:

The Government of Tamil Nadu shall be at liberty to carry out the following works (hereinafter called the Parambikulam Aliyar Project).

- i) Construction of a weir across Nirar at latitude  $10^{\circ}17-1/2'$  N, longitude  $77^{\circ}1'$  E with a diversion tunnel leading to the Tamil Nadu Sholayar Reservoir mentioned in item (ii) below. The weir shall have two river sluices of not less than 5'x6' whose sill level shall be 5' below the sill level of the diversion tunnel leading to the Tamil Nadu Sholayar Reservoir.
- ii) Construction of a dam across Sholayar (hereinafter called the Tamil Nadu Sholayar Reservoir) at a latitude  $10^{\circ}18'$  N, longitude  $76^{\circ}53'$  E with F.R.L. at R.L. + 3290 for storing the natural flows in the Sholayar and also the flows diverted from Nirar and Anamalayar, the waters being for use in the States of both Tamil Nadu and Kerala as in Schedule-II. From this reservoir a tunnel may be constructed to divert water to the Parambikulam Valley. A saddle spillway with crest level at R.L.+ 3290 and M.W.L at R.L. + 3295 may be provided to surplus the waters into the Parambikulam valley, this being of the free overflow type with no shutters provided. Adequate outlets shall be provided in the dam or through a tunnel in the flanking hill so as to enable Kerala to get the supplies of water as provided in Schedule-II at all stages of effective storage in the reservoir.
- iii) Construction of a dam across Parambikulam Ar, at Paulikamudi latitude  $10^{\circ}23'$  N, longitude  $76^{\circ}46'$  E with F.R.L. at R.L.+1825 for storing the natural flows in the river and also the waters

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<sup>25</sup> Map not attached with the agreement.

diverted from Anamalayar and Nirar and Sholayar with a lead off channel and tunnel to divert the waters to the Tunacadavu reservoir. The capacity of the lead off channel and tunnel shall be adequate to convey the water requirements of both the States as provided for in Schedule II at all stages of effective storage in the reservoir.

- iv) Construction of a dam across Thunacadavu Ar at latitude  $10^{\circ} 25-3/4'$  N, longitude  $76^{\circ} 46'E$  with F.R.L. at R.L. +1770 to serve as a balance ing reservoir with lead off channels and tunnels for diverting water to Sarkarapathy Power House. It shall have a spillway at a level not higher than the exit tunnel sill level. The capacity of the lead off channels and tunnels shall be adequate to convey the water requirements of both the States as provided for in Schedule-II at all stages of effective storage in the reservoir.
- v) Construction of a dam across Peruvaripallam Ar at latitude  $10^{\circ} 26-1/2'$  N, longitude  $76^{\circ} 46'E$  with F.R.L. at +1770 for storing and diverting the natural flows.
- vi) Construction of a dam in the Nirar below the diversion weir specified in item (i) above to store and divert the water to the extent specified in Schedule-II in the catchment between the Nirar Weir and the Nirar dam<sup>26</sup> (hereinafter referred to as the lower Nirar catchment) to the Tamil Nadu Sholayar Reservoir. This is in lieu of the Thekkadi dam and Reservoir originally proposed as part of Parambikulam Aliyar project and subsequently given up. The Nirar reservoir as proposed here will also serve to conduct water diverted from the Anamalayar. A tunnel of suitable size may be constructed to divert the water from this reservoir to the Tamil Nadu Sholayar Reservoir. The location, design and other details of the dam and the diversion tunnel will be as per specifications proposed by the Government of Tamil Nadu and approved by the Government of Kerala.
- vii) Construction of lead off canals to take the tail race waters from the Sarkarapathy Power House.
- viii) Construction of a dam across Aliyar at latitude  $10^{\circ} 29'N$ , longitude  $76^{\circ} 58'E$  with F.R.L. at +1050. The Reservoir is intended to impound the natural flows of the Aliyar catchment above the reservoir and also part of the tail race waters from Sarkarapathy Power House mentioned above.
- ix) Construction of storage and diversion works across Aliyar above the Aliyar Dam mentioned in item (viii) for generation of power before the water is let down into the said dam.
- x) Construction of a dam across Palar known as Tirumurthi dam at latitude  $10^{\circ} 29'N$ , longitude  $77^{\circ} 9-1/2'E$  with F.R.L. at R.L. +1337.
- xi) Other works incidental to the above works including protective works trash, regulators etc.

II. The Government of Kerala shall be at liberty to carry out the following works:

- i) Construction of a dam across Sholayar (hereinafter called the Kerala Sholayar reservoir) within

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<sup>26</sup> In an inter -State meeting held on 8/3/1974, both States agreed that the lower Nirar Dam be located across Nirar at about Latitude  $10^{\circ} 16' 20''$  N, and Longitude  $76^{\circ} 59' 10''$  East with FRL at +3350 ft and that tunnel of 22'-6" diameter horse shoe with entry sill at 3310 and exit sill at 3290 be mined.

the State of Kerala at latitude  $10^{\circ}17'N$  and longitude  $76^{\circ}45'E$  with F.R.L. +2663 with necessary diversion and other works.

- ii) Construction of projects in the Periyar system without reference to Tamil Nadu without affecting in any manner the irrigation rights of Tamil Nadu in respect of Periyar reservoir covered by the Periyar Lease Deed of 1886.
- iii) Construction of storage and diversion works within the State of Kerala in Chalakudy and Bharathapuzha rivers and their tributaries but below the works covered by this agreement and without physical damage or obstruction to the works covered by this agreement.
- iv) Other connected works incidental to the above works including protective works, trash tracks, regulators etc.
- v) All R.Ls. referring to Parambikulam Aliyar Project are based on the Project B.M. of that Project. All R.Ls. referring to Kerala Sholayar are based on the project B.M. of that Project. The B.M.s in turn are related to M.S.L. and give mean sea level values.

SCHEDULE-II  
(See PARAGRAPH 5 (a) (ii) OF THE AGREEMENT)

UTILISATION OF WATERS

The actual use of the waters of these rivers shall be governed by the conditions and limitations mentioned hereunder.

1. PERIYAR BASIN

- i) ANAMALAYAR: 2.5 TMC ft. of water may be diverted every year by Tamil Nadu from Anamalayar for use in the Parambikulam Aliyar Project System. This, however, will be done after the construction of the Idamalayar project is completed by the Government of Kerala. Details regarding the diversion of water by Tamil Nadu will be settled separately between the two Governments and a supplementary agreement executed. Kerala will undertake Projects in the Periyar system without reference to Tamil Nadu without affecting in any manner the irrigation rights of Tamil Nadu, in respect of Periyar Reservoir covered by the Periyar Lease Deed of 1886.
- ii) NIRAR: a) The Government of Tamil Nadu shall be entitled to divert all waters of the river Nirar at the site of the weir mentioned in paragraph 2(i) in Schedule-I and utilise the waters for the benefit of the State of Tamil Nadu provided the entire natural flows in the river during the period from 1<sup>st</sup> October to 31<sup>st</sup> January every year are let down the river for benefit of the State of Kerala. For this purpose, the river sluices will be fully left open during 1<sup>st</sup> October to 31<sup>st</sup> January. During this period the tunnel leading to Tamil Nadu Sholayar Reservoir will be kept fully closed. When the storage reservoirs contemplated by the Government of Kerala in Periyar valley begin to function, the entire natural flows of Nirar river can be diverted in full every year at the weir site by the Government of Tamil Nadu.
- b) Subject to the provision of sub clause (a) above, the entire yield of the lower Nirar catchment (referred to in paragraph 2 (vi) of Schedule-I) shall be diverted into the Parambikulam system. The Government of Tamil Nadu will be entitled to draw and utilise a quantity not exceeding 16.5 TMC ft. every year (including evaporation losses) from the yield of the Parambikulam Ar, Peruvaripallam Ar, Tunacadavu Ar and the water diverted from the yield of the lower Nirar catchment. The quantity in excess of 16.5 TMC ft. (including evaporation losses) to be utilized by Tamil Nadu shall belong to Kerala and shall be made available for use by Kerala as specified in paragraph 3 below, provided however that until the Nirar reservoir is constructed and commissioned the figures and letters 16.5 TMC ft. wherever they occur in this clause shall be read and construed as 14 TMC ft.

2. CHALAKUDI BASIN: SHOLAYAR

The Government of Kerala shall be entitled to utilise a total volume of 12.3 TMC ft. of water every year amounting to the utilisation of 390 c/s average discharge from the Kerala Sholayar Reservoir delivered, and measured at the Kerala Sholayar Power House, and this quantity shall be drawn by Kerala without allowing any spill over the spillway in Kerala Sholayar dam excepting under emergency conditions. The Kerala State shall be entitled to regulate this water from the Kerala Reservoir which has an effective capacity of 5.3 TMC ft. to provide for an average discharge of 390 c/s for power or for irrigation purposes, as the case may be, subject to the total utilisation of 12.3

TMC ft. of water annually and subject to the condition that water shall be drawn only through the power tunnel except under emergency conditions with due intimation to the Government of Tamil Nadu. After ensuring this flow and the total volume referred to above, the Government of Tamil Nadu shall be entitled to store, regulate and divert from Tamil Nadu Sholayar Reservoir, into the Parambikulam Aliyar Project system all the surplus flows of Sholayar and also the waters diverted from Nirar and Anamalai rivers as specified in paragraph 1 above. The Government of Tamil Nadu shall be entitled to use the waters let down to Kerala for generation of hydro Electric Power within the limits of the State of Tamil Nadu for the benefit of the State of Tamil Nadu.

Subject to the total quantity delivered and measured at Kerala Sholayar Power House being 12.3 TMC ft. every year, the requirements of Kerala shall be supplied in the following manner:

i) The Government of Tamil Nadu shall let down from their reservoir in the Sholayar river such quantities of water as together with the yield from the intermediate catchment between Tamil Nadu Sholayar Reservoir and Kerala Sholayar Reservoir will ensure the following:

July 1<sup>st</sup> : Tamil Nadu shall commence filling Kerala Sholayar Reservoir from 1<sup>st</sup> July and fill it upto 5/ below the F.R.L. that is plus 2658 as soon as possible.

September 1<sup>st</sup> : Kerala Sholayar Reservoir shall be kept at the full reservoir level of plus 2663.

September 2<sup>nd</sup> to January 31<sup>st</sup> : The level in Kerala Sholayar Reservoir shall be maintained at about 5ft. below F.R.L. i.e. plus 2658.

February 1<sup>st</sup> : The Kerala Sholayar shall be kept at full reservoir level of plus 2663.

February to June: No releases need be made from Tamil Nadu reservoir during these months provided that 12.3 TMC ft. of water had been delivered at the Kerala Sholayar Power House by 1st February.

Subject to the above, the actual regulation at Kerala Sholayar Power House shall be as decided by the Government of Kerala.

ii) The Government of Kerala shall not ordinarily operate the undersluices or river outlets in the Kerala Sholayar Reservoir except under emergency conditions and during flood seasons, and when they are so operated due intimation should be given to the authorised officers of the Government of Tamil Nadu.

### 3. PARAMBIKULAM GROUP OF RIVERS

As already stated in paragraph 1 (ii) of this Schedule and subject to the proviso thereto out of the total annual yield of the Parambikulam Ar, Thunacadavu Ar, and Peruvuripallam Ar, hereinafter referred to as the Parambikulam system at the respective dam sites and the lower Nirar catchment at the Nirar Dam site, the Government of Tamil Nadu shall be entitled to store and divert every year, a total quantity not exceeding 16.5 TMC ft. including the Tamil Nadu share of evaporation losses.

NOTE: Out of the evaporation losses of Parambikulam waters 0.150 TMC ft. should be met from

the share of 16.5 TMC ft. of Tamil Nadu and the formula  $X - 0.186 \text{ TMC ft.} + 16.350 \text{ TMC ft.}$  adopted to measure the quantum of water at the Sarkarpathy Power House where  $x$ =quantum of water coming out of the first power house. 0.186 TMC ft. =evaporation losses of Sholayar and Nirar waters in Parambikulam Reservoir. 16.350 TMC ft.= Parambikulam water after allowing for evaporation losses.

- b) i) Subject to the provisions of the proviso to paragraph 1(ii) (b) of this schedule any surplus over 16.5 TMC ft. or 14 TMC ft as the case may be, including concerned evaporation losses available from the yield at Parambikulam, Tunacadavu and Peruvaripallam dam sites and the Lower Nirar catchment at the Nirar Dam site shall belong to the Government of Kerala. The quantity available shall be determined by gauging in the rivers carried out jointly by the technical officers of the two Governments for a period of ten years from July 1970 under the supervision of the Joint Water Regulation Board. But as an interim measure, average of the gaugings for the year 1970-71 shall be used for the first year of operation under the Joint Water Regulation Board and gradually corrected on the basis of the observations of each succeeding year till the 10<sup>th</sup> year when the final figures shall be determined and accepted.
- ii) Out of the surplus so determined, the Government of Kerala shall be entitled to a quantity upto 2.5 TMC ft. for the exclusive use of Kerala for irrigating lands in Chittur taluk. This quantity to which the Government of Kerala is entitled shall be stored and diverted to the east of the ghats through the tunnels of the State of Tamil Nadu and made available to the state of Kerala through the high level canal to be constructed exclusively for the use of Kerala at the cost of the Government of Kerala branching off from Sirkarpathy power house or Sethumadai canal for irrigating lands for Chittur Taluk in the state of Kerala. Until the high level canal is constructed, Kerala will have the right to use this quantity of water in the Chitturpuzha system water in excess of 19 TMC ft. or 16.5 TMC ft. after setting off 16.5 TMC ft. or 14 TMC ft. as the case may be to be drawn by Tamil Nadu and 2.5 TMC ft. to be drawn through Parambikulam conductor system for use in Kerala, if any shall be let down into the Chalakudi basin through the spillway, and outlet arrangements in the dams across the Parambikulam group of rivers.
- iii) If the surplus available for diversion for use in the Chitturpuzha valley is short of 2.5 TMC ft. the Government of Kerala may make up the shortfall by diversion from other Kerala sources, if they do desire.

#### 4. ALIYAR

- a) At present an extent of 20,000 acres of double crop wet lands in Chitturpuzha Valley in Kerala State (including an extent of 5,000 acres of land raising Varthu Vitha crop) and an extent of 6400 acres of double crop wet lands in Tamil Nadu are being irrigated from the waters of Palar and Aliyar rivers. The Government of Tamil Nadu shall apply annually at Manacadavu Weir near Kerala border 7.250 TMC ft. of water exclusive of unutilisable flood waters for assured irrigation of 20,000 acres in Kerala (including 5,000 acres of Varthu Vitha).

Explanation: Any flow at Manacadavu Weir during any fortnight, exceeding the quantum which has to be regulated and supplied as shown in Annexure-I will be deemed unutilisable

- b) The actual regulation for the supply of water for the Kerala Ayacut below Manacadavu Weir shall be as



specified in Annexure-I and such supplies shall be ensured by the Government of Tamil Nadu.

c) The Joint Water Regulation Board may make any variation to suit local conditions in requirements specified in Annexure-I subject to the total quantum being 7.250 TMC ft. annually.

d) The Joint Water Regulation Board will fix points for gaugings of the flows of Palar below Thirumurthi Dam and the Aliyar and also at the different anicuts in two rivers above Manacadavu Weir.

## 5. THEKKADI Ar

Tamil Nadu will have no claim for the waters of Thekkadi Ar.

## 6. JOINT WATER REGULATION BOARD

As the flows from one river into another and from one reservoir/weir into another are interconnected, there shall be a Joint Water Regulation Board referred to in paragraph 5(a) (iv) the constitution, functions, powers and duties of which are defined in Schedule V.

7. In all calculations of yield, transfer, discharge, delivery and utilisation, year by year, of waters in the rivers, Reservoirs, Power Houses and Canals, initial and final storages and intermediate flows will be taken into account to the extent they are necessary and relevant.

SCHEDULE -III  
(SEE PARAGRAPH 5 (a) (iii) OF THE AGREEMENT)

FINANCIAL TERMS

PARAMBIKUIAM ALIYAR PROJECT

1. i) The Government of Kerala shall contribute to the cost of construction of the works of the Parambikulam Aliyar project that are beneficial to them in proportion to the benefit derived as mentioned in paragraph 2 to 4.
- ii) The following works of Parambikulam Aliyar Project will benefit the State of Kerala:
- a) Aliyar Reservoir.
  - b) Nirar Reservoir.
  - c) Tunnel from Nirar Reservoir to Tamil Nadu Sholayar Reservoir.
  - d) Parambikulam Reservoir
  - e) Tunnel from Parambikulam Reservoir to Tunacadavu Reservoir.
  - f) Tunacadavu Reservoir.
  - g) Peruvaripallam Reservoir.
  - h) Water conductor system from the Tunacadavu Reservoir to Sarkarpathi Power House.
  - i) High Level Canal branching off from Sethumadai canal or from Sarkarpathy Power House, for irrigating lands in Kerala.

The works (a) to (h) will be executed by the Government of Tamil Nadu at their cost in the first instance. The proportionate cost of the works beneficial to Kerala will be borne by the Government of Kerala. Work (i) will be executed as a deposit work by the Government of Tamil Nadu at the cost of the Government of Kerala.

2. The benefit to Tamil Nadu from Aliyar Reservoir is computable at a quantity of 5.5 TMC ft. of water per year while the benefit to Kerala is by way of stabilisation of the existing wet ayacut assessable at 1 TMC ft. per year. The capital and maintenance cost of the Aliyar Dam shall, therefore, be shared between Tamil Nadu and Kerala in the ratio of 11: 2.

3. The total quantity of water impounded and utilised in the Parambikulam Aliyar project system in an average year can be computed as 33 TMC ft. as detailed below:

|  |    |           |               |
|--|----|-----------|---------------|
| Diverted from the Anamalayar   | .. | ..        | 2.5 TMC ft    |
| Diverted from the Nirar Weir   | .. | ..        | 9 TMC ft      |
| Diverted from the Tamil Nadu Sholayar  | .. | ..        | 2.5 TMC ft    |
| Diverted from the Nirar Reservoir, Parambikulam Dam, Tunacadavu Dam and Peruvaripallam Dam | .. | <u>19</u> | <u>TMC ft</u> |
|  |    | Total..   | <u>33</u>     |

The capital and maintenance costs of all works mentioned in (b) to (h) in paragraph 1 (ii) shall first be allocated in the ratio of 50:50 between power and irrigation and the cost allocated to power shall be met entirely by Tamil Nadu. The portion of the capital and maintenance cost of these works allocated to

irrigation shall be shared between the Governments of Tamil Nadu and Kerala in the ratio of 305:25 or 61:5.

4. The entire capital, maintenance and operation costs of the High Level Channel mentioned as item (i) in paragraph 1 (ii) shall be borne by the Government of Kerala.

5. The operation cost in respect of joint gauging by both the Governments will be borne by the respective Governments.

SCHEDULE-IV  
(See PARAGRAPH 5(b) OF THE AGREEMENT)  
MISCELLANEOUS PROVISIONS

1. The operation of spillway control gates and other surplusing and outlet arrangements of works covered by this agreement shall be judiciously managed so as to ensure the safety of the downstream structures. Timely flood warning should be given to avert flood disasters. If there should be failure in taking adequate precautionary measures and giving timely intimation, the Joint Water Regulation Board shall immediately conduct an enquiry and make a report to the two Governments.
2. Free access shall be given by either state to the officers authorized by the Government of the other State to all dams and appurtenant structures covered by this agreement constructed and maintained by them and also to all the records relating to the maintenance and operation of such dams and structures, constructed, under construction and to be constructed.
3. The right of the Government of Tamil Nadu to utilise the lands covered by the licence and lying within the Kerala State for the construction, maintenance and operation of the Parambikulam Aliyar Project shall in no way affect the rights of the Government of Kerala in the said lands and the Government of Kerala shall continue to have full rights in respect of the said lands (subject to the terms and conditions of this agreement) .
4. All activities connected with the promotion and developments of tourism in the lands converted by the licence lying within the state of Kerala shall be under the control of the Government of Kerala.
5. The Government of Kerala shall have the exclusive right, authority and liberty of fishing and breeding of fish in the following reservoirs, namely, Parambikulam, Tunacadavu, Peruvairipallam and Kerala Sholayar.
6. The navigation rights in all the rivers and reservoirs lying within the State of Kerala shall vest in the Government of Kerala. The Government of Kerala shall be the sole authority to issue licences to boats and other vessels plying in these waters. Subject to these provisions the officers of Tamil Nadu are permitted to ply their inspection boats in these rivers and reservoirs.
7. The Government of Kerala shall be the sole authority for the maintenance of law and order in the area covered by the Parambikulam Aliyar Project lying within the State of Kerala.
8. All residual rights not specifically mentioned in this agreement in respect of the lands and rivers used for the Parambikulam Aliyar project shall vest with the Government in whose territory they are situated.
9. The Government of Kerala shall grant to the Government of Tamil Nadu, licence for the use of all the lands required permanently by the reservoirs and the construction of dams and the appurtenant structures relating to Parambikulam Aliyar Project. The rent for the use of the land, compensation for the trees to be cut and removed from the sites and the terms and conditions of the licence shall be as detailed in Annexure-II appended.

10. Compensation for the Kerala Government forests made available to the Government of Tamil Nadu for the use of the Parambikulam Aliyar Project shall be paid in accordance with the terms and conditions of this agreement and the recommendations made by the Joint team of officers of the Government of Tamil Nadu and Kerala on 12<sup>th</sup> August, 1965 and agreed to by both the Governments.

11. The Government of Kerala shall also grant to the Government of Tamil Nadu licence for the use of all lands required temporarily by the Government of Tamil Nadu for the works connected with the Parambikulam Aliyar Project. The period of this licence shall be limited to the actual period of construction of the Parambikulam Aliyar Project and no compensation of any kind shall be payable to the Government of Tamil Nadu on the termination of the licence. For the buildings constructed by Tamil Nadu and taken over by the Government of Kerala compensation will be paid. The rent for the use of the land covered by the licence, the compensation for trees to be cut and removed from the sites and the terms and conditions of the licence shall be as mentioned in Annexure-II.

12. The Government of Tamil Nadu shall be given free use of all the existing roads within the project area for the plying of vehicles and other normal use in connection with the execution, operation and maintenance of the Parambikulam Aliyar Project and the entire responsibility for upkeep and maintenance of these roads, as prescribed by the Chief Engineer, Public Works Department, Kerala shall be that of the Government of Tamil Nadu, no contribution being made for this purpose by the Government of Kerala. The Officers and nominees of the Government of Kerala shall have free use of all these roads for any departmental or other vehicles authorised by them, no rent or toll being payable for such use. The travelling public shall also have free use of all these roads subject to security restrictions in the project area.

13. Notwithstanding anything herein contained the Government of Tamil Nadu shall have the right for use of the land situated within the state of Kerala and given on licence to them only for the purpose of execution and maintenance and operation of the Parambikulam Aliyar Project and for no other purpose.

14. On completion of the construction phase of each component of the project, all roads in the concerned project area situated within the Kerala State shall be taken over for control and maintenance by the Government of Kerala. No compensation is payable to the Government of Tamil Nadu for the construction of these roads or their maintenance till then. The Officers and nominees of the Government of Tamil Nadu shall have free use of all roads in Kerala territory in Parambikulam Aliyar Project for their departmental or other vehicles authorised by them no rent or toll being payable for such use.

15. The Government of Kerala shall be permitted free use of all existing roads in the Anamalayar and Nirar catchments in Tamil Nadu for the plying of vehicles and other normal use in connection with the investigation, execution, maintenance and operation of projects in the Periyar system, no rent or toll being payable for such use.

16. The Officers and nominees of the Government of Kerala of all the roads in the Parambikulam Aliyar Project in Tamil Nadu territory for their departmental or for other vehicles authorised by them, being payable for such use.

17. The Government of Tamil Nadu shall be liable to pay compensation to the Government of Kerala for the use and enjoyment of land and other amenities within the State of Kerala and for the damages that might be caused to the improvements in the land so used and enjoyed, such as roads, forests,

buildings, Hillmen settlement etc., in connection with the execution of the works.

SCHEDULE-V  
(See PARAGRAPH 5(a) (iv) OF THE AGREEMENT)  
CONSTITUTION, FUNCTIONS AND POWERS OF THE JOINT WATER REGULATION  
BOARD FOR THE PARAMBIKULAM ALIYAR PROJECT  
SYSTEM

Constitution

1. 1) The Joint Water Regulation Board (hereinafter referred to as the Board) referred to in paragraph 5(a) (iv) of the Agreement will be constituted with effect from the 1<sup>st</sup> June, 1970.

2) The Board shall consist of:

- i) The Chief Engineer (Irrigation), Kerala.
- ii) The Chief Engineer in charge of Parambikulam Aliyar Project, Tamil Nadu.
- iii) A representative of the Kerala State Electricity Board, not below the rank of a Chief Engineer.
- iv) A representative of the Tamil Nadu Electricity Board, not below the rank of a Chief Engineer.

3) The Chief Engineer (Irrigation) Kerala and the Chief Engineer in charge of Parambikulam Aliyar Project, Tamil Nadu shall function as the Chairman of the Board every alternate year. The Chief Engineer (Irrigation), Kerala will be the first Chairman of the Board. He will hold office for one year from the date of formation of the Board. Thereafter, the Chief Engineer in charge of Parambikulam Aliyar Project, Tamil Nadu and the Chief Engineer (Irrigation), Kerala will function as Chairman alternately each year.

Powers and Functions

2. (a) The Board shall be responsible for the proper regulation of waters collected and distributed through the Anamalayar, the Nirar Weir, the lower Nirar Reservoir, the Tamil Nadu Sholayar and the Kerala Sholayar, the Parambikulam, the Tunacadavu, the Peruvaripallam, the Aliyar reservoirs and the Manakadavu weir, in accordance with this agreement.

(b) The Board will also arrange to measure the discharges from the Aliyar catchment intercepted by the contour Canal leading to the Tirumurthi Reservoir.

3. THE BOARD WILL:

- a) Arrange with immediate effect joint gauging of all the rivers concerned and ascertain in detail and separately the yield and run off.
- b) Decide on the manner and details of withdrawals of water from the abovementioned reservoirs/weirs, in accordance with the terms of the agreement.
- c) Implement the decisions so arrived at through the Chief Engineer concerned.

- d) Determine the actual quantum of water withdrawn from each of the above mentioned sites at periodical intervals.
- e) Receive fortnightly accounts of water Regulation from the officers concerned.
- f) Frame suitable regulations for the operation of surplus gates wherever they are installed in a manner which will ensure the safety of the structure and at the same time prevent damages and danger to structures located downstream and also arrange to frame suitable rules for flood warnings. If there should be failure in taking adequate precautionary measures and giving timely intimation, the Board shall immediately conduct an enquiry and make a report to the two Governments.
- g) Any other matter incidental to the above as may be referred to the Board by the two Governments.

#### 4. Meetings of the Board

The Board shall meet each year as often as possible and decide on a judicious management of waters in accordance with the provisions of this agreement.

Provided, however, it shall meet (a) one month prior to the commencement of each irrigation season in the areas benefited by the project in the respective states to decide upon the pattern of regulation of waters, and (b) two weeks after the closure of the season, and review the availability of water in the entire group of reservoirs to decide on the manner of operation of the entire system for the next irrigation season, taking into account carry over storages.

#### 5. Communication of Decisions and their Implementation

It shall be the duty of the Chairman to communicate the decisions of the Board to the Chief Engineers concerned. The Chief Engineers concerned shall implement the same without delay.

#### 6. Disagreement to be Reported to Governments

- a) If there is any disagreement between the members of the Board on any matter within the purview of the Board, the Chairman of the Board shall report the matter to the Governments of Tamil Nadu and Kerala at the earliest, and in any case within a week, with a detailed note explaining the facts of the case the view points expressed by the representatives of both the States and the points of disagreement. He shall also be at liberty to record his recommendations in the matter.
- b) Upon receiving such a report, the two Government shall, as soon as may be, discuss the matter and arrive at a settlement.

## STATEMENT OF FORTNIGHTLY WATER REQUIREMENT IN MILLION CUBIC FEET FOR CHITTURPUZHA LANDS IN KERALA

| S. No | Particulars                                  | January         |                 | February        |                 | March           |                 | April           |                 | May             |                 | June            |                 |
|-------|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|       |  | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> |
| 1     | Varathuvitha                                 | 60              | 60              | 90              | 90              | 240             | 240             | -               | -               | -               | 120             | 100             | -               |
| 2     | 1 <sup>st</sup> crop                         | -               | -               | -               | -               | -               | -               | -               | -               | -               | 290             | 217             | 176             |
| 3     | 2 <sup>nd</sup> crop                         | 606             | 404             | -               | -               | -               | -               | -               | -               | -               | -               | -               | -               |
|       | Total  | 670             | 470             | 100             | 100             | 240             | 240             |                 |                 |                 | 400             | 320             | 180             |
|       | rounded                                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|       | Average discharge in cusecs during fortnight | 500             | 350             | 80              | 80              | 180             | 180             | -               | -               | -               | 300             | 250             | 140             |
| S. No | Particulars                                  | July            |                 | August          |                 | September       |                 | October         |                 | November        |                 | December        |                 |
|       |  | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 2 <sup>nd</sup> |
| 1     | Varathuvitha                                 | -               | -               | -               | -               | -               | -               | -               | -               |                 |                 |                 |                 |
| 2     | 1 <sup>st</sup> crop                         | 126             | 122             | 150             | 50              | -               | -               | -               | -               |                 |                 |                 |                 |
| 3     | 2 <sup>nd</sup> crop                         | -               | -               | 101             | 101             | 505             | 707             | 707             | 404             | 202             | 203             | 404             | 606             |
|       | Total  | 130             | 130             | 250             | 160             | 510             | 700             | 700             | 410             | 210             | 310             | 410             | 610             |
|       | rounded                                      |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|       | Average discharge in cusecs during fortnight | 100             | 100             | 200             | 120             | 400             | 540             | 540             | 300             | 160             | 240             | 320             | 440             |
|       | Total  |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 | 7250            | MCft            |



## ANNEXURE-II

### TERMS AND CONDITIONS ON WHICH THE KERALA LANDS ARE TO BE MADE AVAILABLE FOR THE PARAMBIKULAM ALIYAR PROJECT OF TAMIL NADU

1. The Government of Tamil Nadu shall be treated as licensee, in respect of all the lands made available to them for the use of the Parambikulam Aliyar project, the lands vesting in the Government of Kerala.
2. The terms of the licence shall cover the uses which are specifically agreed to in this Agreement between the Governments of Tamil Nadu and Kerala in respect of the Parambikulam Aliyar Project.
3. The Government of Tamil Nadu shall pay the full compensation for the lands to be acquired by the Government of Kerala and also the value of the lands at the disposal of the Government of Kerala which are made available to the Government of Tamil Nadu. Where the compensation awarded under the Land Acquisition Act includes the value of trees, the Government of Tamil Nadu shall be allowed the use of those trees.
4. The Government of Tamil Nadu shall, in respect of all the lands made available to them, pay as licence fees, lands revenue at the rate prevailing in Kerala State from time to time subject to a minimum of Rupees two per acre.
5. The compensation for the Kerala Government Forests made available to the Government of Tamil Nadu for the use of the Parambikulam Aliyar project shall be *in* accordance with the terms and conditions of this agreement and the recommendations made by the Joint Team of Officers of the Government of Kerala and Tamil Nadu, on 12<sup>th</sup> August 1965 and agreed to by both the Governments.
6. The Government of Tamil Nadu shall hold on payment of a licence fee at the rate specified in paragraph 4 above those lands made available by the Government of Kerala for the permanent use of reservoirs, dams and appurtenant structures relating to Parambikulam Aliyar project.
7. The Government of Tamil Nadu shall hold temporarily and on payment to the Government of Kerala the licence fee at the rate specified in paragraph 4 above, such of those lands acquired at the cost of the Government of Tamil Nadu and made available for temporary use to them and also other forest lands made available for temporary use in connection with the construction of the Parambikulam Aliyar project. As soon as the actual construction of each component of the Project is completed, the Government of Tamil Nadu shall hand over to the Government of Kerala those lands with the buildings thereon and the Government of Kerala will be entitled to take possession of them and deal with them in such manner as they deem fit and no compensation of any kind shall be payable to the Government of Tamil Nadu by the Government of Kerala for those lands. Compensation will be paid by the Government of Kerala for the buildings constructed by the Government of Tamil Nadu and taken over by the Government of Kerala. Buildings not required by the Government of Kerala may be disposed off by the Government of Tamil Nadu and the land handed over.

In witness whereof Thiru K.S. Sivasubrahmanyam, Secretary to Government of Tamil Nadu,

Public Works Department acting for and on behalf of and by order and direction of the Governor of Tamil Nadu and Sri K.P. Viswanathan Nair, Secretary to the Government of Kerala, Water and Power Department acting for and on behalf of and by order and direction of the Governor of Kerala hereunto set their hands.

K.S. Sivasubrahmanyam,  
Signed by the abovenamed  
in the presence of

K.P. viswanathan Nair  
Signed by the abovenamed  
in the presence of

1) Thiru R. RAMASUBRAMANIAM  
Secretary to the Government of  
Tamil Nadu, Law Department

1) Sri R. GOPALASWAMY,  
Secretary to the Government  
of Kerala, Public Works Department.

2) Thiru G. Jas  
Joint Secretary to the  
Government of Tamil Nadu  
Public Works Department.

2) Sri P. SANKUNNI MENON  
Secretary to the Government  
of Kerala, Law Department

**INDENTURE MADE BETWEEN THE SECRETARY OF STATE FOR INDIA AND THE MAHARAJAH OF TRAVANCORE IN RESPECT OF THE LEASE OF CERTAIN TERRITORY IN THE TRAVANCORE STATE IN CONNECTION WITH THE PERIYAR IRRIGATION PROJECT 1886**

This indenture made the twenty-ninth day of October one thousand eight hundred and eighty-six (corresponding with the fourteenth day of Tulam 1062 of the Malabar (hereafter era) between the Government of His Highness the Maharajah of Travancore<sup>27</sup> (hereinafter called the Lessor) of the one part and the Right Honourable the Secretary of State for India in Council of the other part witnesseth that in consideration of the rents hereinafter reserved and of the covenants by the said Secretary of State for India in Council hereinafter contained the lessor in both hereby demise and grant unto the said Secretary of State for India in Council his successors and assigns (all of whom are intended to be included in and to be referred to by the expression “the Lessee” hereinafter used).

FIRST All that tract of land part of the territory of Travancore situated on or near the Periyar river bounded on all sides by a contour line one hundred and fifty-five feet above the deepest point of the bed of the said Periyar river at the site of the dam to be constructed there and shown in the map or plan hereunto annexed<sup>28</sup> and which said tract of land is delineated in the said map or plan hereunto annexed and therein coloured blue and contains 8000 acres or thereabouts.

SECONDLY All such land in the immediate vicinity of the tract of land above mentioned and not exceeding in the whole in extent one hundred acres as may be required by the lessee for the execution and preservation of the, irrigation works to be executed by the lessee within the said tract of land first above mentioned and which said works are commonly called or known as the ‘Periyar Project’

THIRDLY Full right power and liberty to construct, make and carry out on any part of the said land hereinbefore demised and to use exclusively when constructed, made and carried out by the lessee all such irrigation works and other work ancillary thereto as the lessee shall think fit for all purpose or any purpose connected with the said Periyar project or with the use, exercise or enjoyment of the lands, rights, liberties and powers hereby demised and granted or any of them.

FOURTHLY All waters flowing into through over or from the said tract of land firstly hereinbefore demised.

FIFTHLY All timber and other trees, woods, underwoods and saplings which now are or shall during the continuance of this demise be growing or standing upon any of the said demised lands with liberty to the lessee to fell, grub up and use free of all charge for the same all such of the said timber and other trees, woods, underwoods and saplings as shall be required in or about the construction or maintenance of or otherwise for all or any of the purposes of the said work or any of them or in connection therewith provided always that the lessee shall not be responsible for the destruction of or for any damage done to any others of the said timber or other trees woods, underwoods or saplings for the time being growing or standing upon any of the said demised lands by or through the construction or maintenance of the said works or any of them.

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<sup>27</sup> Travancore is now part of state of Kerala and therefore Kerala is now the Lessor.

<sup>28</sup> The map not annexed.

SIXTHLY The right of fishing in over and upon such waters tank; and ponds as now are or shall during the term hereby granted be upon or within any of the said demised lands.

SEVENTHLY<sup>29</sup> Free way leave and right and liberty of way and passage in manner hereinafter mentioned through and over the lands of the lessor and liberty for the lessee, his officers agents and servants and workmen to enter upon and to make, lay and repair such one and not more than one main or wagon way from any point on the boundary line between British territory in India and the Territory of Travancore to any part of the said demised lands in the usual manner by digging the soil and levelling the ground and making gutters through and over the lands of the lessor between such points and the said demised lands for loading and carrying with horses and other cattle wagons carts and other carriages over and along the said wagon way unto and towards the said demised lands all materials required for all or any of the said works and other materials matters and things what so ever to and from any of the said demised lands and liberty for the lessee, his officers, agents, servants and workmen as occasion shall require to lay and fix wood timber earth, stones gravel and other materials in and upon the lands of the lessor and to cut, dig and make trenches and water-courses for the purpose of keeping the said wagon way free from water and to do all other things necessary or convenient as well for making and laying the said wagon way as for repairing and upholding the same whenever there shall be occasion and liberty for the lessee, his officers, agents, servants and workmen to go, pass and repass along the said wagon way either on foot or with horses and cattle wagons carts of other carriages unto and from the said demised lands and all other liberties and appurtenances necessary or convenient for making, laying, altering repairing, using or removing the said wagon way or any part thereof the lessee making reasonable compensation unto the lessor and the tenants or occupiers for all damage occasioned by or in the exercise of the said liberties to the lands belonging to him or them except those actually taken and used for the line of the said wagon way except nevertheless out of this demise all sovereign rights of the lessor in and to the said demised lands or any of them other than the rights, liberties and powers hereinbefore particularly mentioned and expressed to be hereby demised, and except all minerals and precious stones whatsoever in and under the said lands hereby demised or any of them other than earth, rubble, stone and lime required for the said works or any of them together with liberty for the lessee to erect, build and set up, alter, maintain and use upon or within the lands hereby demised such houses and other buildings and to take free of all charge for the same all such earth, rubble, stone and lime therefrom as shall be necessary or proper for effectually or conveniently making and maintaining the said several works and generally to do all such things whatsoever in or upon the hereby demised lands as shall be necessary or expedient for the construction and repair of the said irrigation and accommodation works and for any of these presents to have and to hold the premises hereinbefore expressed to be hereby demised and granted unto lessee from the first day of January, one thousand eight hundred and eighty-six for the term of nine hundred and ninety-nine years yielding and paying therefore by the same being deducted from the tribute from time to time payable by the lessor to the Government of India or Madras the yearly rent of forty thousand rupees of British India commencing from the day on which the waters of the said Periyar river now flowing into the said territory of Travancore shall by means of the said works be diverted and shall flow into British territory, the first of such payments to be made at the expiration of twelve calendar months from such last mentioned date and yielding and paying from the date from which the said yearly rent of forty thousand rupees of British India shall become payable and over and above the same the further yearly rent(hereinafter called acreage rent) after the rate of five rupees of British India currency for every acre and so in proportion for a less quantity of the lands hereby demised and granted which on the completion of the said works shall be found on

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<sup>29</sup> Clause 6 and 7 have been modified by supplemental agreement of 1970 between Kerala and Tamil Nadu.

measurement to be included within the said contour line in excess of the said area of eight thousand acres the first of such payment of acreage rent to be made at the time and place when and where the said yearly rent shall become payable as hereinbefore provided and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the several rents hereinbefore reserved at the times hereinbefore appointed by allowing the same to be deducted from the tribute from time to time payable by the lessor as aforesaid, and will at the expiration or sooner determination of the said term peaceably deliver unto the lessor all the said premises hereby demised in such state and condition as shall be consistent with a due regard to the provisions of this lease and in particular will within two years after the expiration or determination of the said term clear from the said lands hereby demised all machinery and plant in or about the same or any part thereof or shall at the option of the lessee abandon all claim to such machinery and plant or to such part or parts thereof as the lessee shall think fit provided always and it is hereby agreed and declared that it shall be lawful for the lessee at any time before the expiration of the said term to surrender and yield up all the demised premises to the lessor in which case and immediately upon such surrender the rents hereby reserved shall cease. Provided always and these presents are on this express condition that if and whenever there shall be a breach of any of the covenants and agreements by the lessee herein contained the lessor may reenter upon any part of the said premises in the name of the whole and thereupon the said term of nine hundred and ninety-nine years shall absolutely determine without prejudice nevertheless to the recovery of any rent or money then payable or to the liability of the lessee to perform and to the right of the lessor to enforce the performance and observance of every or any covenant or stipulation here in contained and which ought to be performed or observed after the expiration of the said term in case the same had expired by effluxion of time. And the lessor doth hereby covenant with the lessee that the lessee paying the rents herein before reserved in manner aforesaid and performing and observing all the covenant and agreements by the lessee herein contained may quietly hold and enjoy all the lands rights and premises hereinbefore demised and granted during the said term and also free of rent so much of the said-lands as shall then be required for any machinery or plant for two years after the expiration or determination of the said term without any interruption or disturbance by the lessor or any person claiming through or in trust for the lessor and that if the lessee shall be desirous of taking a renewed lease of the said premises for the further term of nine hundred and ninety-nine years from the expiration of the term hereby granted and of such desire shall prior to the expiration of the said last mentioned term give to the lessor six calendar months previous notice in writing signed by any Secretary to the Government of Madras<sup>30</sup> and shall pay the rents hereby reserved and perform and observe the several covenants and agreements herein contained and in the part of the lessee to be observed and performed up to the expiration of the said term hereby granted the lessor will upon the request and at the expense of the lessee forthwith execute and deliver to the lessee a renewed lease of the said premises for the further terms of nine hundred and ninety-nine years at the same yearly and acreage rents and under and subjects to the same covenants provisions and agreements including this present covenant as are herein contained. If and whenever any dispute or question shall arise between the lessor and lessee touching these presents or anything herein contained or the construction hereof or the rights, duties or liabilities of either party in relation to the premises the matter in difference shall be referred to two arbitrators or their umpire pursuant to and so as with regard to the mode and consequence of the reference and in all other respects to conform to the provisions in that behalf of the Code of Civil Procedure 1882 of the Legislative Council of India or any then subsisting statutory modification thereof. In witness whereof Vembaukan Ramiengar, Esq. C.S.I., Diwan of His Highness the Maharajah of Travancore by order and direction of the Government of His Highness the said Maharajah and John Child Hannington, Esq., Resident of Travancore and Cochin by order and direction of the Right Honourable, the Governor in Council of Fort

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<sup>30</sup> For the purpose of this agreement Madras is succeeded by Tamil Nadu.

St. George acting for and on behalf of the Right Honourable, the Secretary of State for India in Council have hereunto set their respective hands and seals the day and year first above written.

Signed, sealed and delivered by the abovenamed Vembaukam Remiengar in the presence of:

(K.K. KARUNLA)

Maramut Secretary, Travancore Sircar.

(V. RAMIENGAR)

(J.H PRINCE)

Ag. Head Sircar Vakil,  
Travancore Government

Signed sealed and delivered by the above named John Child Hannyngton in presence of :

(K.K. KARUNIA)

Maramut Secretray, Travancore Sircar

(J.C. HANNYNGTON)

(J. H PRINCE)

Ag. Head Sircar Vakil,  
Travancore Government

## **AGREEMENT DATED 29.5.1970 BETWEEN THE GOVERNMENTS OF KERALA AND TAMIL NADU ON PERIYAR IRRIGATION PROJECT**

This Agreement is executed on this the twenty ninth day of May One thousand nine hundred and seventy between the Governor of Kerala (hereinafter referred to as "the Government of Kerala" which expression shall, where the context so admits, include his successors in Office and assigns) of the one part and the Governor of Tamil Nadu (hereinafter referred to as "the Government of Tamil Nadu" which expression shall, where the context so admits, include his successors in Office and assigns) of the other part.

WHEREAS by the lease deed executed on the twenty-ninth day of October One thousand eight hundred and eighty six (hereinafter referred to as "the Principal Deed") certain properties in the erstwhile state of Travancore were leased out to the Government of the erstwhile province of Madras in connection with the Periyar Irrigation project subject to the terms, conditions and covenants therein contained:

WHEREAS the rights, liabilities and obligations of the parties under the Principal Deed have devolved on the Government of Kerala and the Government of Tamil Nadu they being successors in interest.

WHEREAS THE Government of Tamil Nadu have agreed to surrender to the Government of Kerala their rights of fishing in, over and upon the water, and tanks, and ponds in the land comprised in the said lease hold and also to revise the conditions in the Principal Deed regarding the rate of acreage rent in the manner herein mentioned;

WHEREAS the parties hereto are desirous to amend the Principal Deed in order to give effect to this agreement;

AND WHEREAS these presents are supplemental to the Principal Deed;

NOW THESE PRESENTS WITNESS and the parties hereto mutually agree as follows:

1. The principal Deed shall be read and construed as if:

a) Clause 6 therein, nearly;

"Sixthly the right of fishing in, over and upon such waters, tanks and ponds as now are or shall during the term hereby granted be upon or within any of the demised lands" is deleted;

b) In clause 7, for the word "Seventhly" occurring at the beginning of the clause the word "Sixthly" is substituted.

c) In clause 7, the words "yielding and paying therefor by the same being deducted from the tribute from time to time payable by the lessor to the Government of India or Madras the yearly rent of forty thousand rupees of British India commencing from the day on which the waters of the said Periyar river now flowing into the said territory of Travancore shall by means of the said works be diverted and shall flow into British territory, the first of such payments to be made at the expiration of twelve calendar months from such last mentioned date and yielding and paying from the date from which

the said yearly rent of forty thousand rupees of British India currency for every acre and so in proportion for a less quantity of the lands hereby demised and granted which on the completion of the said works shall be found on measurement to be included within, the said contour line in excess of the said area of eight thousand acres the first of such payments of acreage rent to be made at the time and place when and where the said yearly rent shall become payable as hereinbefore provided and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the several rents hereinbefore reserved at the times hereinbefore appointed by allowing the same to be deducted from that tribute from time to time payable by the lessor as aforesaid" shall be deleted and in their place the following words shall be substituted, namely "and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor yearly rent at the rate of Rs.30 (Rupees thirty only) for every acre of the said lands demised and granted within the said contour line including the 8,000 acres referred to in clause one and the first of such payment of yearly rent be made at the expiration of twelve calendar months from the due date of payment in the year one thousand nine hundred and sixty nine as per the Principal Deed and the lessee doth hereby covenant with the lessor that the rent alone herein mentioned shall be subject to revision once in every thirty years from the twenty ninth day of May One thousand nine hundred and seventy at such rate as may be mutually agreed upon and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the yearly rent hereinbefore reserved or at such revised rent as the case may be.

d) The words "at, the same yearly and acreage rent", occurring after the words "will upon the request and at the expenses of the lessee forthwith execute and deliver to the lessee a renewed lease of the said premises for the further term of 999 years"; and before the words "and under and subject to the same covenants provisions" shall be deleted.

2. The Government of Kerala agree to exercise the right of fishing in the lands demised under the Principal Deed without affecting in any way the irrigation and power rights of the Government of Tamil Nadu.

3. Same as varied as aforesaid the principal deed and all the conditions and covenants thereof shall remain in full force and effect.

In witness whereof Shri K.P. VISWANATHAN NAIR, Secretary to Government of Kerala, Water and Power Department for and on behalf of the Governor of Keral and Thiru K.S. SIVASUBRAHMANYAN, Secretary to Government of Tamil Nadu, Public Works Department for and on behalf of the Government of Tamil Nadu have hereunto set their hands the day and year first above written.

Signed by Shri K.P. Viswanathan Nair, Secretary to Government of Kerala, Water and Power Department.

In the presence of witness:

1) SHRI R. GOPALASWAMY,  
Secretary to Government of Kerala,  
Public Works Department.

2) SHRI P. SANKUNNI MENON,  
Secretary to the Government of Kerala,



Law Department.

Signed by Thiru K. S. SIVASUBRAHMANYAN, Secretary to Government of Tamil Nadu, Public Works Department.

In the presence of witnesses:

- 1) THIRD R. RAMASUBRAMANIAM,  
Secretary to the Government of Tamil Nadu,  
Law Department.
- 2) THIRD G. JAS,  
Joint Secretary to the Government of Tamil Nadu,  
Public Works Department.

**TAMIL NADU-KERALA AGREEMENT OF PERIYAR HYDRO ELECTRIC SCHEME DATED  
29<sup>th</sup> MAY 1970**

**TAMIL NADU-KERALA AGREEMENT ON PERIYAR HYDRO ELECTRIC SCHEME**

AGREEMENT made this the twenty-ninth day of May, one thousand nine hundred and seventy between the Governor of Kerala hereinafter referred to as "the Government of Kerala" which expression shall, where the context so admits" include his successors in office and assigns) of the one part and the Governor of Tamil Nadu (hereinafter referred to as the "Government of Tamil Nadu", which expression shall where the context so admits,. include his successors in office and assigns) of the other part.

WHEREAS an indenture was made on the twenty-ninth day of October one thousand eight hundred and eighty six (hereinafter referred to as "the principal deed") between the Maharaja of Travancore and the then Secretary of State for India in Council demising certain territory and waters of the erstwhile Travancore State to the Government of Madras in connection with the Periyar Irrigation project.

AND WHEREAS a dispute that arose between the erstwhile Government of Travancore and the then Government of Madras on the issue whether the Principal deed entitled the then Government of Madras to use the Periyar waters demised to them therein for generation of Hydro-Electric Power was referred to an arbitration tribunal consisting of Sir. David Devadoss an Ex-Judge of the Madras High Court, and M.R.R.Y. Dewan Bahadur V.S. Subramaniya Aliyar Avergal, an Ex Dewan of the Travancore State, and the arbitrators who could not agree, each gave a separate award and the case was in consequences, referred to an umpire, Sir Nalini Rajan Chatterjee, and the umpire in his award dated the twelfth May, one thousand nine hundred and forty one declared as follows:

- i) that, upon a construction of the principal deed, the lessee had the right to use the water for irrigation purposes only;
- ii) that the lessee had no right to use the water for any purpose other than irrigation: and
- iii) that supposing it was possible to use hydroelectric energy for carrying or distributing water or doing any other act in connection with irrigation, the lessee had the right to generate and use hydroelectric energy for such irrigation purposes only;

AND WHEREAS with a view to arriving at a settlement on the question of utilising the said Periyar waters for generation of hydro-electric power also, the representatives of the erstwhile Government of Travancore-Cochin and the then Government of Madras had discussed the subject and had come to an agreement.

AND WHEREAS this deed is supplemental to the principal deed:

NOW these presents witness that the parties hereto have agreed in the manner following that is to say;

1. The Government of Kerala hereby convey to the Government of Tamil Nadu the power rights in the said Periyar water which in the arbitration award of Sir Nalini Rajan Chatterjee dated the twelfth May, one thousand nine hundred forty one were declared to vest in erstwhile Government of Travancore and the

Government of Tamil Nadu shall be at liberty to develop, at their own cost and for their exclusive benefit hydro-electric power for any purpose at the Periyar power house from the water of the Periyar river demised to Government of Madras under the principal deed:

2. The Government of Kerala hereby convey to the Government of Tamil Nadu full right, power and liberty to construct any headworks, tunnels, pumping installation, waterways, transmission, distribution and telephone lines, and such other appurtenances or works and camps for staff and labour which the Government of Tamil Nadu decide upon as necessary to be constructed in the territory of the Government of Kerala in connection with the Generation of hydro-electric power house in the manner aforesaid.

3. a) The Government of Kerala hereby convey and demise the land measuring 42.17 acres in the territory of the said Government more fully described in the Schedule hereunder to the Government of Tamil Nadu and the terms and conditions specified in the said schedule in connection with the construction of the works referred in clause-2.

b) The Government of Kerala hereby agree to convey to the Government of Tamil Nadu for purpose of alteration, maintenance, operation and repair of the works relating to the aforesaid scheme, such land or lands as may be required by them in future for such period and subject to such terms and conditions as may be agreed upon between the two Government.

4. The Government of Kerala hereby convey and demise into the Government of Tamil Nadu free way, leave and right and liberty of way and passage through and over the lands of the Kerala State for all officers, agents, servants and workmen and all vehicles as well as plant and machinery of the Government of Tamil Nadu or of the contractors engaged by them for the survey, construction, alteration, maintenance, operation or repair of the works mentioned in clause 2 for all or any other purpose or purpose connected with the use and exercise of the rights, powers and liberties under this agreement by the Government of Tamil Nadu.

5. The Government of Kerala agrees to afford all other reasonable facilities to the Government of Tamil Nadu for the construction, alteration, maintenance operation and repair of the works referred to in clause-2.

6. The Government of Kerala agrees not to levy, any tax on the Government of Tamil Nadu for all or any of the purposes connected with the powers, rights and liberties conveyed under this agreement or the use thereof by the Government of Tamil Nadu.

7. In consideration of the conveyance of the power rights clause-1 under the Government of Tamil Nadu shall pay annually to the Government of Kerala an amount calculated at the following rates:

1) When the electrical energy generated by the Government of Tamil Nadu at the Periyar Power House does not exceed 350 million units in a year, at Rs.12 (Rupees twelve) per K.W. year of electrical energy, and

2) When the electrical energy generated at the said Power House exceeds 350 million units in a year at Rs.12 (Rupees twelve) per K.W. year upto 350 million units of electrical energy so generated

and at Rs.18 (Rupees eighteen) per K.W. year for the electrical energy generated in excess of 350 million units.

NOTE: For the purpose of this clause K.W. year shall mean 8,760 units of electrical energy.

The first of such annual payments shall become due from the Government of Tamil Nadu to the Government of Kerala on the expiry of twelve months from the date on which the Government of Tamil Nadu begins to generate electrical energy from the Periyar waters at the periyar Power House, each subsequent payment shall become due on the completion of every twelve months from the date on which the first annual payment become due as aforesaid. The Government of Tamil Nadu shall make the said annual payments referred to above to the Government of Kerala within thirty days from the date which each such payment shall become due.

8. The Government of Tamil Nadu agrees to pay to the Government of Kerala reasonable compensation for any damage caused to any property adjoining the demised land by reasons of the exercise by the Government of Tamil Nadu of the powers and rights conferred on them by this agreement.

9. The procedure and other details connected with the implementation of the provisions of this agreement shall be agreed upon between the Tamil Nadu State Electricity Board and the Kerala State Electricity Board.

10. Any dispute or difference arising between the Government of Kerala and the Government of Tamil Nadu touching these presents or anything herein contained or the interpretation thereof or the rights, duties or, liabilities of either party in relation to the premises shall be referred to a single arbitrator to be mutually agreed upon by both the parties and the arbitrator's decision thereon shall be final and binding on both the parties.

11. Save as varied as herein before provided, the principal deed as amended on date by another agreement executed to-day and all terms and conditions thereof shall continue to be binding and in full force and effect.

12. This supplemental deed shall be deemed to have taken effect on thirteenth November, one thousand and nine hundred and fifty four.

## THE SCHEDULE

1. Description of land conveyed, all that piece and of land situated east of Kumily village within the Kumily Panchayat Area in Peerumedu taluk measuring 42.17 acres of land comprising of three lots bounded by the lands given below:

|    |  | North<br>S.No | East<br>S.No | South<br>S.No | West<br>S.No            | Area in<br>Acres |
|----|--|---------------|--------------|---------------|-------------------------|------------------|
| 1. | Plot No.1 by the side of old shaft near Travellers Bangalow  | 42/1          | 42/1         | 42/1          | 46/3                    | 21.72            |
| 2. | Plot No.2 by the side of new shaft   | 28/3&<br>29/1 | 28/1         | 27/2          | 46/25,<br>25/1&<br>26/3 | 18.37            |
| 3. | Plot No.3 of 100 feet width along the road connecting the plot no.2 and the Madras Kerala state Boundary |               |              | 29/1          |                         | 2.08             |
|    |  |               |              | Total         |                         | 42.17            |

## II. CONDITIONS

1. The Government of Tamil Nadu shall, at their own cost demarcate the land conveyed to them by the Government of Kerala.
2. The Government of Tamil Nadu shall vacate and hand over possession of lands, if any, not vacated as on twenty ninth of May, one thousand nine hundred and seventy to the Government of Kerala on or before the first July, one thousand nine hundred and seventy.
3. After the thirtieth June, one thousand nine hundred and seventy the Government of Tamil Nadu shall have no claim whatsoever either by way of ownership or otherwise on the buildings and other constructions already existing, or raised and left by them in the said land, that Government being free to clear the said land of all structures constructed for work, and excavated stones, dumped before the aforesaid date.
4. All rubbish dumped in the said lands shall become the property of the Government of Kerala after the first July one thousand nine hundred and seventy.
5. The Government of Tamil Nadu shall have no right for the trees felled by them in the said lands and as such trees shall, immediately after they are felled, be handed over to the Game Range Officer, Thekkady.
6. The Government of Tamil Nadu shall have no right for the free use of any produce from the said lands or any of the surrounding forests.
7. The officers of the Game Department of the Government of Kerala shall have full right and liberty to enter the said lands for purposes of inspection only.

8. All residuary rights not specifically conferred on the Government of Tamil Nadu shall vest in the Government of Kerala.

In witness where of Sri K.P. Viswanathan Nair, Secretary, to Government of Kerala, Water and Power Department acting for and on behalf of and by the order and direction of the Government of Kerala and Thiru K.S.Sivasubramanyan, Secretary to the Government of Tamil Nadu, Public Works Department, acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.

Signed by the above named  
Shri K.P. Viswanathan Nair  
in the presence of:

Signed by the above named  
Thiru K.S. Sivasubramanyan  
in the presence of:

witness

1. P. SANKUNNY MENON,  
Secretary to the Govt. of  
Kerala, Law Department  
Trivandrum

2. R. GOP ALASWAMY  
Secretary to the Govt  
of Kerala, Public Works  
Department , Trivandrum

witness

1. J. ABDUL RAZACK,  
Joint Secretary to the Govt.  
of Tamil Nadu, Public Works  
Department, Madras-9.

2. S. VADIVELU,  
Joint Secretary to Govt. of  
Tamil Nadu, Law Department,  
Madras- 9

Sd/  
SECTION OFFICER

**SUMMARY RECORD OF DECISION TAKEN AT THE INTE-STATE MEETING HELD ON 8<sup>th</sup> MARCH, 1974 BETWEEN THE GOVERNMENTS OF KERALA AND TAMILNADU REGARDING PARAMBIKULAM ALIYAR PROJECT.**

The Meeting was attended by the following:

Kerala  
Hon'ble Chief Minister  
of Kerala.

Thiru M.N. Govindan Nair,  
Minister of Electricity and Transport

Thiru T.K. Divakaran,  
Minister for Works

Chief Secretary to  
Govt. of Kerala

Secretary to Government of Kerala  
Water & Power Department

Chairman, Kerala  
State Electricity Board

Member, Kerala State  
Electricity Board

Addl.Chief Engineer,  
Kerala State Electricity Board

Chief Engineer, (General & project)  
& Additional Secretary  
Public Works Department

Tamil Nadu  
Thiru P.U. Shanmugham,  
Minister of Works.

Thiru O.P. Raman,  
Minister for Electricity

Chief Secretary to  
Govt. of Tamil Nadu

Secretary to Govt. of  
Tamil Nadu,  
Public Works Department

Chairman, Tamil Nadu  
Electricity Board

Joint Secretary to  
Govt.of Tamil Nadu,  
Public Works Department

Chief Engineer (Operation)  
Tamil Nadu Electricity Board

Chief Engineer(Distribution)  
Tamil Nadu Electricity Board

Chief Engineer, Parambikulam  
Aliyar Project  
Chief Engineer(Irrigation)

The following subjects were discussed and decisions taken:

I. Anamalayar Scheme

The Government of Tamil Nadu agree to permit the Government of Kerala to undertake investigation works in Tamil Nadu territory in connection with the diversion of Anamalayar waters to Parambikulam Aliyar Project system, subject to the usual conditions like furnishing the results of investigations etc., to Tamil Nadu Government, payment of rent for land occupied to Tamil Nadu

Government etc.

## II. Lower Nirar Dam

It is agreed,

1. that the lower Nirar Dam be located across Nirar at about Latitude  $10^{\circ} 16-20''$  North and Longitude  $76^{\circ} 59'-10''$  East with F.R.L. at +3350 ft;2.
2. t hat the tunnel of 22' -6" diameter horse shoe with entry sill at 3310 and exit sill at 3290 mined;
3. that the cost of items (1) and (2) is borne by Tamil Nadu Government. Kerala does not have to pay any part of the cost of these works, if it does not use them for diverting water to which they are eligible under paragraph 3 (i)and.(ii) of Schedule 11 of the Parambikulam-Aliyar Project Agreement of 1970; and
4. that the water from the Upasi stream shall not be diverted by the Government of Tamil Nadu.

## III. Pandiar Punnapuzha Scheme

It is agreed that the Pandiar Punnapuzha scheme be implemented in accordance with the understanding reached on 14<sup>th</sup> October, 1965 between the Government of Kerala and Tamil Nadu.

Sd/-  
(G. Gopalakrishna Pillai)  
8-3-74  
Secretary to Government of Kerala  
Water & Power Department

Sd/-  
(M.M. Rajendran)  
8-3-74  
Secretary to Government  
of Tamil Nadu  
Public Works Department



**AGREEMENT DATED 22<sup>nd</sup> JULY, 1972 BETWEEN THE GOVERNMENTS OF GUJARAT, MADHYA PRADESH, MAHARASHTRA AND RAJASTHAN ON NARMADA DEVELOPMENT**

1. Though Narmada is one of the best rivers of the country with a great potential, it has not been developed even after Independence. Government of India is requested to give priority to the development of this great river in this decade.
2. Narmada Development will result in irrigating million of acres, development of hydro power especially for peaking purpose in a region dominated by thermal and nuclear power, excellent waterways for navigation cutting across the country and accelerated development of rich mineral resources available in its basin and vicinity. The Chief Ministers of the States concerned feel that development of Narmada should no longer be delayed in the best regional and national interests and therefore agree to the settlement of disputes connected with this river by mutual agreement and with the assistance of the Prime Minister of India.
3. The quantity of water in Narmada available for 75 percent of the years is assessed at about 28 million acre ft. The requirements of Maharashtra and Rajasthan for use in their territories are 0.25 and 0.5 million acre ft. respectively. These are without prejudice to the level of the canal. Deducting this, the net available quantity of water for use in Madhya Pradesh and Gujarat is 27.25 million acre ft. Prime Minister of India is requested to allocate this balance of water between the States of Madhya Pradesh and Gujarat taking into account the various relevant features in both the States.
4. The various view points with regard to the height of Navagam dam would be gone into and a suitable height may also be fixed by the Prime Minister of India.
5. After the decisions on the above referred matters are given by the Prime Minister, Chief Ministers of the States concerned will meet and finalise the arrangements for the power generation and its distribution.
6. We earnestly hope the development of Narmada will be inaugurated by laying foundation stone for one or more of the major works on Narmada on the auspicious day of 15<sup>th</sup> August, 1972.

Sd/-  
(GHANSHYAMBHAI OZA)  
Chief Minister of Gujarat

Sd/-  
(P.C. SETHI)  
Chief Minister of Madhya Pradesh

Sd/-  
(V.P. NAIK)  
Chief Minister of Maharashtra

Sd/-  
(BARAKATULLAH KHAN)  
Chief Minister of Rajasthan

NEW DELHI  
July 22, 1972

**AGREEMENT DATED 12<sup>th</sup> JULY, 1974 BETWEEN THE GOVERNMENTS OF MADHYA PRADESH, MAHARASHTRA, GUJARAT AND RAJASTHAN ABOUT THE NARMADA WATER DISPUTE**

IT IS AGREED:-

(1) That the water dispute referred to the Narmada Water Disputes Tribunal be determined by the Tribunal on the basis of this agreement between the States of Madhya Pradesh, Maharashtra, Gujarat and Rajasthan (hereinafter referred to as Madhya Pradesh, Maharashtra, Gujarat and Rajasthan, respectively);

(2) That development of Narmada should no longer be delayed in the best regional and national interests;

(3) That the quantity of water in Narmada available for 75 percent of the years be assessed at 28 million acre feet and that the Tribunal in determining the disputes referred to it do proceed on the basis of that assessment;

(4) That the requirements of Maharashtra and Rajasthan for use in their territories are 0.25 and 0.5 million acre feet, respectively and that the Tribunal in determining the disputes referred to it do proceed on the basis that the requirements of Maharashtra for use in its territories are 0.25 million acre feet and that Rajasthan will get for use in its territories 0.5 million acre feet without prejudice to the level of the canal;

(5) That the net available quantity of water for use in Madhya Pradesh and Gujarat is 27.25 million feet and that the Tribunal in determining the disputes referred to it do proceed on the basis that the net available quantity of water for use in Madhya Pradesh and Gujarat is 27.25 million acre feet;

(6) That the Tribunal do allocate this balance of water namely 27.25 million acre feet, between Madhya Pradesh and Gujarat after taking into consideration various contentions and submissions of the parties hereto;

(7) That the height of Navagam Dam be fixed by the Tribunal after taking into consideration various contentions and submissions of the parties hereto;

(8) That the level of the canal be fixed by the Tribunal after taking into consideration various contentions and submissions of the parties hereto;

(9) That in the light of this agreement, issue Nos. 4,5,7,7(a), 7(d), 7(e) &(f), 8,10, 11,12 and 20 framed by the Tribunal on 28<sup>th</sup> January, 1971 may be deleted and that issue Nos. 6,7(b), 13 and 17 may be suitably modified as in the Annexure to this Agreement. All other issues may be determined by the Tribunal after taking into consideration the various contentions and submissions of the parties hereto;

(10) That for the limited purpose of effectuating the terms of this agreement, Madhya Pradesh do withdraw the proceedings filed by it before the Hon'ble the Supreme Court and arising out of the decision of the Tribunal dated 23<sup>rd</sup> February, 1972 on the preliminary issues of law;

(11) That for the limited purpose of effectuating the terms of this agreement, Rajasthan do withdraw the proceedings filed by it before the Hon'ble the Supreme Court and arising out of the decisions of the Tribunal dated 23<sup>rd</sup> February, 1972 on the preliminary issues of law; and

(12) That Rajasthan shall be a party to the further proceedings before the Tribunal, without prejudice to the legal position regarding the rights of a non-riparian State.

Dated this Twelfth day of July, 1974.

NEW DELHI

Sd/-  
Chief Minister of Madhya Pradesh  
For the State of Madhya Pradesh

Sd/-  
Chief Minister of Maharashtra  
For the State of Maharashtra

Sd/-  
Adviser to the Governor  
For the State of Gujarat

Sd/-  
(HARIDEO JOSHI)  
Chief Minister of Rajasthan  
for the State of Rajasthan

ANNEXURE TO THE AGREEMENT DATED JULY 12, 1974 REGARDING NARMADA  
WATER DISPUTE

Issue No.

6. What should be the height of the dam at Navagam across the Narmada water and what should be the level of the canal at its off-take with adequate discharge carrying capacity from the Navagam dam?
- 7(b) How and on what basis should equitable apportionment of the 27.25 million acre feet of water be made between the States of Madhya Pradesh and Gujarat? What should be the allocation to either States?
13. Should any directions be given:-
  - (a) for releases of adequate water by Madhya Pradesh below Narmada Sagar for the setting up and operation of Navagam dam.
  - (b) for specification of FRL and MWL of the storage at Navagam dam and the FSL of Navagam canal so as not to prejudicially affect the interest of Madhya Pradesh, Maharashtra or the other concerned States;
  - (c) for releases by the State of Madhya Pradesh below Narmada Sagar for the benefits of the States of Gujarat and Maharashtra, and
  - (d) for the releases by the State of Madhya Pradesh below Narmada Sagar for the benefits of the State of Rajasthan.
17. Whether the costs and benefits of the Navagam project of Gujarat are required to be shared amongst the concerned States? If so, in what manner and on what terms and conditions? If not, whether Gujarat is liable to pay any, and if so, what compensation to Maharashtra and /or Madhya Pradesh for loss of power? Whether Maharashtra and / or Madhya Pradesh are entitled to any share of power because of their proposed projects namely, Jalsindhi, Harinphal and Maheshwar.

**AGREEMENT DATED 8<sup>th</sup> MARCH, 1975 BETWEEN THE GOVERNMENTS OF GUJARAT,  
RAJASTHAN, MADHYA PRADESH AND MAHARASHTRA REGARDING  
DEVELOPMENT OF NARMADA WATERS**

It is agreed that the development of the Narmada waters should no longer be delayed in the best national interest. The party-States to the dispute, therefore, agree to cooperate with the Tribunal in giving the decision at the earliest.

2. Without prejudice to the decision of the Narmada Water Disputes Tribunal and also without prejudice to the claims of the four party-States, namely, Madhya Pradesh, Gujarat, Maharashtra and Rajasthan.

- (i) Gujarat may go ahead with the construction of Karjan, Heran, Rami and Sukhi projects subject to usual scrutiny and approval by the Government of India. Maharashtra has small catchment area in Karjan sub-basin. Maharashtra will be allowed to utilize Karjan waters from its catchment in Maharashtra.
- (ii) Madhya Pradesh may go ahead with Kolar, Bichia, Sukta and Bichhua-Latia projects subject to the usual scrutiny and approval of the Government of India.

New Delhi, the 8<sup>th</sup> March, 1975.

Sd/-  
(JAGJIVAN RAM)  
Union Minister of Agriculture and Irrigation

Sd/-  
(H.C. SARIN)  
Adviser to Governor of Gujarat

Sd/-  
(P.C. SETHI)  
Chief Minister of Madhya Pradesh

Sd/-  
(HARIDEO JOSHI)  
Chief Minister of Rajasthan

Sd/-  
(K.N. SINGH)  
Dy.Minister of Agriculture & Irrigation

Sd/-  
(VASANT RAO PATIL)  
Minister for Irrigation, Maharashtra

**AGREEMENT DATED 5<sup>th</sup> APRIL, 1978 BETWEEN THE GOVERNMENTS OF GUJARAT AND MADHYA PRADESH ABOUT THE MEDIUM SCHEMES IN NARMADA BASIN**

In the interest of speedy development of Narmada waters, the States of Madhya Pradesh and Gujarat agree to the following, without prejudice to the decision of the Narmada Water Disputes Tribunal and also without prejudice to the claims of the two States:

- (1) Gujarat may go ahead with the construction of Sankara, Dholi and Men projects subject to the usual scrutiny and approval by the Government of India;
- (2) Madhya Pradesh may go ahead with the construction of Sakhalda, Mehgaon Tola, Matiyari, Choral and Paras projects subject to the usual scrutiny and approval of the Government of India;
- (3) Madhya Pradesh agrees, in principle, to the construction of Orsang project by Gujarat. Gujarat would forward the project report to Madhya Pradesh as soon as the same is ready for necessary concurrence.

New Delhi,  
5<sup>th</sup> April, 1978.

Sd/-  
(KESHUBHAI PATEL)  
Minister for Agriculture & Irrigation,  
Gujarat.

Sd/-  
(VIRENDRA KUMAR SAKHLECHA)  
Chief Minister, Madhya Pradesh.

**AGREEMENT BETWEEN THE GOVERNMENT OF MADRAS AND THE GOVERNMENT OF ORISSA REGARDING THE DEVELOPMENT OF HYDRO-ELECTRIC POWER AT THE DUDUMA FALLS ON THE MACHKUND RIVER**

(Agreement of 1946)

I. The Government of Madras<sup>31</sup> and the Government of Orissa agree that the power resources at the Duduma Falls should be developed without delay to the fullest extent and for the maximum benefit of both Provinces.

II. (a) The Government of Madras shall have full right to the use of 50 percent of the ultimate power developed at the Duduma Falls as well as of that developed at each stage.

(b) The Government of Orissa shall have full right to the use of 50 percent of the ultimate power developed at the Duduma Falls as well as of that developed at each stage.

III. The two Governments agree that, based on present conditions and knowledge, the Government of Madras will be in a position to use power to a greater extent and at a much earlier date than the Government of Orissa. The two Governments accordingly agree to develop power jointly at the Duduma Falls on the terms and conditions laid down hereinafter.

IV. The Government of Orissa, shall transfer to the Government of Madras for a period of ninety nine years from the date of signing of this Agreement its right of use of 20 percent of the ultimate power developed as well as of that developed at each stage.

IV. In consideration of the transfer of the said 20 percent, the Government of Madras shall pay annually to the Government of Orissa for thirty years commencing from the date of operation of the power plant an amount calculated at the rate of Rs.20 per kilowatt on 20 percent of the actual maximum demand recorded at the power house during each financial year. After the expiry of 30 years the terms of payment shall be liable to revision in such manner as may be mutually agreed upon between the two Governments.

VI. On the expiry of the said period of 99 years, it shall be open to the Government of Orissa to take over the said 20 percent on payment to the Government of Madras of the proportionate share of the Capital cost as defined in the Schedule, less depreciation.

VII. The Government of Madras shall be responsible for the construction, maintenance and operation of all civil works including dam and appurtenant works and of hydro-electric installations including power plant and switchgear at the Duduma Falls whether situated in the Province of Madras or Orissa. Each Government shall be separately responsible for the construction, maintenance and operation of the power transmission lines and distribution system within their respective territories.

VIII. The general proposals of the Government of Madras for the construction and development of the scheme as contained in their printed Report of 1944 are hereby accepted by both Governments subject to such modification as may be made by the Government of Madras in the interest of economy. The Government of Orissa agree that the Government of Madras may proceed forthwith with the execution of

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<sup>31</sup> For Godavari basin, Government of AP and Telangana are successor states of Government of Madras.

the Scheme in a manner which is, in the opinion of the Government of Madras, best suited to meet the demand for power as and when it arises. Both Governments further agree to permit all engineers and employees to enter freely into all lands and property for the purposes of the Scheme and of the transmission system. Each Government shall grant free right of way for all transmission lines which may be necessary to transmit power from the Scheme to places within the territory of the other Government.

IX. (a) The Government of Madras shall provide 70 percent and the Government of Orissa shall provide 30 percent of the capital cost of the Scheme. Interest during construction of any part of the Scheme, till such time as that part comes into operation for generation of power shall be borne by the Governments of Madras and Orissa in the ratio of 70 : 30 respectively.

(b) The cost of maintenance and operation charges as specified in the Schedule shall be paid by the Governments every year in proportion to the maximum demand utilised by each Government in that year. That is to say each Government shall contribute to the maintenance and operation cost as specified in the Schedule every year in the ratio of the maximum demand utilised by it in that year and from such contribution shall be paid the interest due to each Government in respect of its capital investment.

X. The Government of Madras shall maintain accounts of capital expenditure and of maintenance and operation charges incurred by both the Governments and attributable to the Scheme. The Auditor-General of India will be requested to arrange for the audit of the accounts relating to the Scheme and prescribe the manner in which the accounts shall be kept. In respect of matters relating to accounts or the inclusion or the exclusion of any particular item of expenditure and of any dispute connected therewith the decision of the Auditor-General shall be final and binding on the two Governments.

XI. The Governments of Madras and Orissa shall be at liberty to fix or modify their tariff rates for power supplied within their respective territories without interference from the other Government.

XII. During construction as well as subsequent maintenance and operation, 30 percent of the executive and supervisory staff as well as contractors and labourers shall be drawn from Orissa, provided that suitable persons are available. The Government of Madras shall further afford full facilities for the training of Engineering and other personnel deputed by the Government of Orissa on construction, maintenance and operation of the scheme.

XIII. A Joint Board of Control shall be set up as soon as practicable and all matters of major policy shall be referred to that Board. Representation on the Board shall be in proportion to the capital contribution made by each Government.

XIV. Both Governments and the Joint Board of Control may at any time call for such information as may be required relating to the scheme direct from either Government, or from the Joint Board of Control and such information shall be furnished.

XV. An Advisory Committee may be formed to advise the two Governments in respect of the incidental matters connected with the resettlement of the dispossessed inhabitants, afforestation of the reserved areas in the catchment, construction of silt traps along the water course, terracing, podu-cultivation and formation of thick forest belts near the river margins and such other matters as may be referred to it for advice by either Government. The Committee shall consist of two representatives nominated by the Government of Orissa, two representatives nominated by the Government of Madras and one representative nominated by the Proprietor of Jeypore and Madgole Estates.



XVI. (a) The Government of Orissa consent to the development of power by the Government of Madras at the two power sites on the Sileru River at the expense and under the sole control of the Government of Madras and to its full utilisation by that Government for a period of 99 years.

(b) During this period the Government of Madras shall make power available from these two sites to the consumers in Orissa on the same terms and conditions as may be applicable from time to time to the consumers in Madras.

(c) Subject to the provisions of clause VIII, the Government of Madras undertake that the development at either of the two power sites on the Sileru river shall not affect adversely the Machkund Hydro Electric Scheme as generally outlined in their Report of 1944.

(d) The Government of Madras shall keep separate accounts for the two Sileru Schemes and shall furnish copies of accounts and progress reports to the Government of Orissa every year.

(e) At the expiry of the period of 99 years the Government of Orissa shall be entitled to claim up to 50 percent of the total output at these sites on payment of proportionate share of the capital cost. Thereafter the two Governments shall pay maintenance and operation charges in proportion to the power taken by them.

XVII. The Government of Madras and Orissa agree<sup>32</sup> that any dispute arising in respect of this Agreement, including the interpretation of any of its clauses shall be referred to the Governor General and his decision shall be final and binding on the two Governments.

## SCHEDULE

1. For purposes of this Agreement all works necessary for the generation of power at the Duduma Falls on the Machkund River and matters incidental thereto shall be known as the "Scheme".

2. The Capital expenditure relating to the Scheme shall consist of the following:

(a) Cost of acquisition of land and other rights, if any.

(b) Costs incidental to the Scheme in connection with the resettlement of the Hillman, afforestation of the reserved areas in the catchment, construction of silt traps along water courses, terracing, control of podu-cultivation and the formation of a thick forest belt near the river margins.

(c) Cost of constructing and improving communications for the Scheme.

(d) Cost of preliminary survey, construction camps, staff quarters colony as may be necessary to accommodate the personnel engaged in the construction and operation of the generating station.

(e) Cost of all hydraulic works, control dams, weirs, flumes, tunnels, pipe lines, power station buildings and any other civil works required to establish (and extend from time to time) the generating station.

(f) Cost of all plant and machinery required for generation and sale of power at the generating station excluding step up transformer and their associated switch gear and any equipment required for transmission purposes.

(g) All other incidental expenditure of a capital nature directly attributable to the Scheme.

The maintenance and operation charges shall consist of-

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<sup>32</sup> Use of water in Machkund –Sileru river by Orissa and erstwhile AP is subject to provision of Annexure D of GWDT decision.

- (i) All expenditure incurred on maintenance and operation of the Scheme;
- (ii) Interest on capital;
- (iii) Depreciation; and
- (iv) a margin not exceeding 1 percent on the total capital expenditure at the end of each financial year.

**SUMMARY RECORD OF DISCUSSIONS AT THE INTER-STATE CONFERENCE ON THE UTILISATION OF KRISHNA AND GODAVARI WATERS HELD IN THE COMMITTEE ROOM OF THE PLANNING COMMISSION, NEW DELHI, ON 27<sup>th</sup> AND 28<sup>th</sup> JULY, 1951.**

**PLANNING COMMISSION**

Shri V.T.Krishnamachari, Member-Chairman.  
Shri G.R.Garg, Chief of Natural Resources Division.  
Shri K.S.S. Murthy, Assistant Executive Engineer,  
Natural Resources Division.  
Hon'ble Shri N.V.Gadgil, Minister for Works, Production and Supply, attended by invitation.

**BOMBAY**

Hon'ble Dr. Jivaraj Mehta, Minister, PWD.  
Hon'ble Shri Naik Nimbalkar, Development Minister.  
Shri G.V.Bedekar, I.C.S., Secretary, P.W.D.  
Shri Mirchandani, Chief Engineer, Electricity.  
Shri Champhekar, I.S.E., Chief Engineer, Irrigation.

**MADRAS**

Hon'ble Shri M.Bhaktavatsalam, Minister, P.W.D.  
Shri T.M.S. Mani, I.C.S., Secretary, P.W.D.  
Shri A.R.Venkatacharya, I.S.E., Chief Engineer, Irrigation.  
Shri N.Padmanabha Iyer, I.S.E., Superintending Engineer.  
Shri M.D.Narsimhachari, Deputy Chief Engineer.

**HYDERABAD**

Hon'ble Shri M.K.Vellodi, Chief Minister.  
Hon'ble Nawab Zain Yar Jung, Minister P.W.D.  
Shri Papaiah, Chief Engineer.  
Mr. Jaffar Ali, Superintending Engineer.

**MADHYA PRADESH**

Hon'ble Shri R.Agnibhoj, Minister, P.W.D.

**MYSORE**

Hon'ble Shri K.C.Reddy, Chief Minister (attended on 27<sup>th</sup>)

**CENTRAL WATER AND POWER COMMISSION**

Shri A.N.Khosla, Chairman.  
Shri Gadkary, Member.  
Dr. K.L.Rao, Director.  
Shri C.S.Parthasarthy, Assistant Engineer.

Opening the discussion, Shri V.T.Krishnamachari stated the Broad principles on which schemes

for irrigation and power development should be selected for inclusion in the Plan. He mentioned that only projects, which had been thoroughly investigated and found technically, economically and financially justifiable, should be included in our Five Year Plan.

The object of the conference was to discuss the utilisation of supplies in the Krishna and Godavari river basins so that an assessment could be made of the relative merits of projects proposed for inclusion in the second part of the Five Year Plan. He referred to the technical paper already circulated showing the supplies available in these rivers. In considering the issues placed before the meeting, two points of view should be reconciled. The first was the need from an all-India point of view for increasing available food supplies within the shortest possible time and on the most economic basis. The Irrigation Commission reporting over 50 year ago emphasised the need regarding irrigation development as a national-all India-question. This was even more important now than it was in the past. India's food problem can be solved only on such a basis. The shortage of power in the Bombay City and surrounding areas should also be regarded as an urgent problem. On the other hand, regional development was important, especially the development of backward regions, and could not be ignored. He was confident that an agreement could be reached reconciling these two considerations in a practical manner which would be equitable to all areas concerned.

2. Shri G.R.Garg, Chief of Natural Resources Division, then gave a brief review of the existing utilization of supplies in these river basins and the contemplated utilization based on the technical note circulated by the Planning Commission.

Shri Venkatacharya, Chief Engineer, Madras, stated that the discharge figures of Krishna River, which had been worked out in the note, were under-estimated by about 8%. Shri Champhekar, Chief Engineer, Bombay, stated that the regeneration supplies in the river basin had not been taken into account. He thought that nearly 25% to 40% of the waters would perhaps be available as regeneration supplies. These points were noted.

3. Hon'ble Shri N.V.Gadgil drew attention to the extremely backward condition of certain districts of Bombay State, Poona, Sholapur, Bijapur etc. He specially stressed the needs of the Karnatic areas. The development of these regions depended on the availability of power and irrigation and should have high priority. Their needs should be provided for.

Shri M.K.Vellodi, Chief Minister of Hyderabad, desired that certain broad principles of priority should be laid down by the conference, so that details could be worked out later on.

4. Shri V.T.Krishnamachari mentioned that apart from power supply projects in the Plan to meet existing deficits, irrigation had been given priority over power projects. The Planning Commission in their draft Five Year Plan has suggested a Committee for selecting projects for inclusion in the second part of the Plan, and set out the principles which should regulate the inclusion of projects in the Plan. No doubt certain States had some initial advantages trained staffs and long experience of irrigation works-but the interests of other regions could not be neglected.

Hon'ble Shri K.C.Reddy, Chief Minister of Mysore stated that so far as the Krishna River basin was concerned, Mysore had certain agreement with Madras and Hyderabad and the new Agreement, that might be arrived at, should take note of the existing agreement.

5. Shri Rameswar Agnibhoj referred to the Wainganga Project of Madhya Pradesh. It was suggested to him that his Government should request the Central Water and Power Commission to complete the investigations so that negotiations might be undertaken with the adjoining States for utilising the power proposed to be generated.

6. Shri T.M.S.Mani of Madras suggested that the waters of the river basins should be distributed to the various States on a percentage basis so that everyone would be affected equally in good or bad year.

7. Thereupon, the Conference adjourned to enable the engineers to arrive at an agreement about of the waters of Krishna.

8. The Conference reassembled at 4 p.m. The engineers reported a tentative agreement regarding the waters of the Krishna. Hon'ble Shri N.V. Gadgil suggested that the percentage adopted by the engineers for Bombay should be increased. After discussions it was agreed that in the case of the Krishna waters, a different set of proportions should be assumed for discharges about 1,000 T.M.C. ft.

SATURDAY THE 28TH JULY, 1951.

9. The engineers met at 10 a.m. to discuss the distribution of waters in the Godavari Basin and arrived at a tentative set of proportions.

10. The conference assembled at 11.30 a.m. It considered proposals made by the engineers regarding the Godavari. The engineers were requested to prepare a memorandum of agreement and the conference adjourned till 3.30 p.m.

11. The Conference reassembled at 3.30 p.m. and proceeded to consider the draft memorandum sentence by sentence. As regards Section I, Hon'ble Shri N.V.Gadgil stated that the proportions for the Krishna waters worked out on the previous day were not equitable as they would prejudice the development of the economically backward areas he mentioned and these areas were entitled to a large share. After some discussion in which the representatives of Madras, Hyderabad and Bombay took part, the conference agreed to a modification of the proportions of contribution for the Krishna waters. Bombay's share being increased by 4%, 2% being surrendered by Hyderabad and 2% by Madras.

12. The basis of distribution for the Krishna and the Godavari waters agreed to at the conference is shown in the annexed memorandum of agreement<sup>33</sup> as finally agreed to by the conference.

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<sup>33</sup> KWDT-1 held that there was no concluded and binding agreement regarding the allocation of the waters of the river Krishna as alleged. The same holds true in respect of Godavari water also.

## MEMORANDUM OF AGREEMENT

### I. THE KRISHNA

The dependable annual flow in the Krishna basin based on the recorded gaugings at Vijayawada is accepted as 1715 T.M.C. ft. This figure may have to be increased to allow for any omissions in respect of existing utilizations in any State.

Shri Venkatachari's statement that the actual flow will be in excess of the recorded gauged-flow by 8% is noted.

2. The existing utilizations (subject to corrections mentioned in para 1) plus flows required for project under construction in the concerned States<sup>34</sup>, as stated below are hereby-allocated to the respective states:

|           | TMC ft       |
|-----------|--------------|
| Bombay    | 176          |
| Hyderabad | 180          |
| Mysore    | 98.5         |
| Madras    | <u>290</u>   |
|           | <u>744.5</u> |

3. The balance of flow for new projects, after meeting the above allocations works out to 970.5 T.M.C ft. For purposes of allocation, this has been taken as 1,000 T.M.C. ft. For this balance up to 1,000 T.M.C. ft., the allocation are made as hereunder:

|           | Percent | TMC ft          |
|-----------|---------|-----------------|
| Bombay    | 24      | 240             |
| Hyderabad | 28      | 280             |
| Mysore    | 1       | (Provisional)10 |
| Madras    | 47      | 470             |

For balance flow in excess of 1,000 T.M.C. ft. mentioned above, the allocations will be as follows:

|           | Percent        |
|-----------|----------------|
| Bombay    | 30             |
| Hyderabad | 30             |
| Mysore    | 1(Provisional) |
| Madras    | 39             |

The allocation to Mysore may have to be slightly adjusted to the extent of additional 1% as a result

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<sup>34</sup> As a result of reorganization of states from 1<sup>st</sup> November, 1956, the state of Hyderabad was merged into three new states namely Bombay, Mysore and Andhra Pradesh and ceased to exist. State of Mysore was later renamed as Karnataka and state of Bombay was bifurcated into States of Maharashtra and Gujarat.

of further engineering scrutiny. This addition will come out of the share of Madras.

4. The above allocations are subject to the condition that the diversion of supplies across the western ghats for the Koyna project will be limited to 67.5 T.M.C. ft.

## II. THE GODAVARI

The dependable annual flow in the Godavari basin based on the recorded gaugings at Dauleshwaram is taken as 2,500 T.M.C.ft.

2. The existing utilizations plus supplies required for projects under constructions in the concerned states as stated below are hereby allocated to the respective States:

|                | TMC ft     |
|----------------|------------|
| Bombay         | 57         |
| Hyderabad      | 208        |
| Madhya Pradesh | 30         |
| Madras         | <u>300</u> |
| Total          | <u>595</u> |

3. Of the balance flow of 1,905 T.M.C. ft.(say 1,900) which remains available after meeting the allocations *in* para 2, the allocations to the various States will be as below:

|                | Percent | T.M.C.ft.   |
|----------------|---------|-------------|
| Bombay         | 3       | 57          |
| Hyderabad      | 26      | 494         |
| Madhya Pradesh | 24      | 456         |
| Madras         | 47      | <u>893</u>  |
|                |         | <u>1900</u> |

These percentages will apply whether the supplies are in excess or short of the dependable flow assumed above.

## III. GENERAL

The allocations in the case of the Krishna and the Godavari have been made on an annual basis. The new utilizations have to be so adjusted as not to interfere with the existing daily utilization for existing works and agreed utilization for new works.

2. The use of water passed by one State for her use downstream, out of the share allocated to her and passing through the reservoir of another state may be used by the latter State, solely for power purposes, provided that such quantities are not impounded in their passage through the reservoir for more than the period agreed upon between the Government concerned, which agreement shall not be unreasonably withheld.

3. The allocations made under Parts I and II shall be reviewed after 25 years.

4. No major project shall be undertaken for construction by any State unless it has been fully investigated and necessary detailed estimates have been prepared, and duly examined.

#### REPLIES RECEIVED FROM STATE GOVERNMENTS

Copy of letter No. MS 3433, dated the. 17<sup>th</sup> August, 1951, from the Secretary to the Government of Madras, Public Works Department, to the Secretary, Planning Commission, New Delhi.

SUBJECT: Utilization of the supplies in Krishna and Godavari River Basins by the State Governments-Conclusions arrived at the Conference convened by the Planning Commission-ratification

With reference to your letter Wo.PC(V)/95/51 dated 31.7.51, I am directed to state that the Madras Government ratify the agreement arrived at on the above subject at the conference held at New Delhi on 27<sup>th</sup> and 28<sup>th</sup> July, 1951, a copy of which was forwarded with your letter cited.

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Copy of letter No.C.M.N.1051 J. dated 30<sup>th</sup> August, 1951, from the Deputy Secretary to the Government of Bombay, Public Works Department, to the Deputy Secretary, Planning Commission, New Delhi.

SUBJECT: Utilisation of supplies in the Krishna and Godavari river basins.

With reference to your letter No.PC(V) 95/51 dated the 31<sup>st</sup> July, 1951, forwarding (a) a summary record of discussions at the Inter-State Conference held in the Planning Commission, New Delhi, on the 27<sup>th</sup> and 28<sup>th</sup> July, 1951 on the above subject and (b) a copy of the agreement reached at the Conference regarding the allocation of the supplies in the Krishna and Godavari river basins, I am directed to convey the ratification of the agreement by this Government as requested therein.

.....

Copy of letter No.GVA-16/GV/51-3148 dated 23rd August, 1951, from the Secretary to the Government of Hyderabad, Public Works Department, to the Deputy Secretary, Planning Commission, New Delhi.

SUBJECT: Utilisation of supplies in the Krishna and Godavari river basins ratification of Agreement

REFERENCE: Your letter No.PC(V)95/51, dated the 31st July, 1951.

With reference to the above communication, I am directed to inform you that the Government of Hyderabad hereby ratifies the agreement arrived at in the Inter-State Conference held at Delhi on the 27<sup>th</sup> and 28<sup>th</sup> July, 1951.

.....

Copy of letter No. 429-F/W.251 dated 8<sup>th</sup> September, 1951 from the Secretary to the Government



of Madhya Pradesh, Public Works Department, Nagpur to Secretary, Planning Commission, New Delhi

Subject: Utilisation of supplies in the Krishna and Godavari River Basin

With reference to your letter No.PC(V) 95/51 dated the 31<sup>st</sup> July, 1951, I am directed to state that the State Government ratify the agreement arrived at the Interstate Conference on the utilisation of supplies in Godavari and Krishna River Basins, held on the 27<sup>th</sup> and 28<sup>th</sup> July, 1951.

**SUMMARY OF THE DECISION ARRIVED AT THE CONFERENCE IN NEW DELHI ON 7<sup>th</sup> SEPTEMBER, 1959.**

The following decisions were arrived at in a Meeting held at 3.00 P.M. on 7<sup>th</sup> September, 1959 in Udyog Bhavan, between Sri C.M.Trivedi, Member, Planning Commission, Shri Sanjiva Reddy, Chief Minister, Andhra Pradesh and Dr. H.K.Mahtab, Chief Minister, Orissa and Sri S.N.Bhanjdeo, Minister, Irrigation and Power, Orissa in connection with the development of Power on the Sileru River. Officials concerned of Andhra Pradesh and Orissa as also Chairman, C.W.& P.C. and Adviser (I&P) Planning Commission, were present.

1. Andhra Pradesh Government can proceed with Upper Sileru Stage I project subject to the condition that it will not interfere with the construction of Balimela Dam.
2. For storing the yield of the river at Guntawada or Balimela and economics of the alternative dams will be examined and the cheaper of the two will be undertaken.
3. The Storage to be created by either Guntawada Dam or Balimela Dam (roughly estimated to be of the order of 4,200 cusecs regulated flow) will be shared between Andhra Pradesh and Orissa in equal proportion.
4. Either State will be free to utilise its share of water for generating power.
5. Andhra Pradesh will submit upper Sileru Stage-I I scheme envisaging a dam at Guntawada and Orissa will submit its scheme for a Dam at Balimela as soon as possible, so that a choice can be made in good time for the Third Five Year Plan.
6. When either Andhra Pradesh or Orissa Government decide to proceed with the construction of the selected dam the other State will make appropriate provision in the Plan.

Sd/-7.9.1959  
(H. K. MAHATAB)

Sd/-7.9.1959  
(N.SANJIVA REDDY)

Sd/-7.9.1959  
(C.M. TRIVEDI)

**AGREEMENT DATED 18<sup>th</sup> JULY, 1961 BETWEEN THE STATE GOVERNMENTS OF ANDHRA -PRADESH AND ORISSA REGARDING UPPER SILERU, MACHKUND H.E. PROJECT AND VAMSADHARA PROJECT<sup>35</sup>**

At the Interstate Conference-held between the Chief Ministers of Andhra Pradesh<sup>36</sup> and Orissa at Hyderabad on 17<sup>th</sup> and 18<sup>th</sup> July, 1961 at which Ministers Finance and Public Works of Andhra Pradesh and the officials of the two state Governments were also present the following were taken:

1. Upper Sileru project

The Chief Engineers of the two State Governments would prepare revised estimate of the Balimela and Guntawada dams in the light of the discussions held between the officials of the two state Governments on the morning of 18<sup>th</sup> July, 1961. The Chief Engineer, Andhra Pradesh, would forward the revised estimates for Guntawada Dam to the Chief Engineer, Orissa, within one month from today i.e. 18<sup>th</sup> July, 1961. Similarly, the Chief Engineer, Orissa would forward the revised estimates for the Balimela Dam to the Chief Engineer, Andhra Pradesh within the same period. Thereafter, the two Chief Engineers would meet and discuss any outstanding points of difference emerging from the two estimates and submit their joint report-before the end of August, 1961. Immediately thereafter, a final decision would be taken regarding the location of the dam at a conference of the Chief Ministers of the two States.

2. Machkund Hydro Electric Project

The representative of the Government of Orissa claimed half the share of the additional power potential created at the Machkund Hydro Electric projects a result of raising the height of the Jalaput Dam. They also indicated that they would be prepared to pay half the additional cost of raising the height of the Jalaput Dam by 10 feet. It was decided that the Chief Engineers in charge of Electricity of the two States would examine and formulate proposals on the basis of additional power that may be generated as well as the additional power potential created and submit their recommendations before the end of August, 1961.

3. Generation of Power at Jalaput

It was decided that-the project report should be prepared immediately by the Chief Engineer (Electricity) Andhra Pradesh for generating power at Jalaput Dam. The cost of generating of power as well as the benefit would be shared equally by the two State Governments.

Sd/-18.7A1961  
( BIJOY ANAND PATNAIK )  
Chief Minister of Orissa

Sd/-18.7.1961  
( D. SANJIVAYYA )  
Chief Minister of Andhra Pradesh

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<sup>35</sup> Decision about Neradi barrage in Vansadhara basin is mentioned under Vansadhara basin, hence omitted under this page.

<sup>36</sup> Andhra Pradesh in this agreement covers territories of present day Andhra Pradesh and Telangana.

# **FINAL AGREEMENT BETWEEN THE GOVERNMENTS OF ORISSA AND ANDHRA PRADESH IN RELATION OF TO THE USE OF WATERS OF THE SILERU RIVER.**

**Dated 4<sup>th</sup> September, 1962**

The following were present during discussions held on "the final agreement between the Governments of Orissa and Andhra Pradesh<sup>37</sup> in relation to the use of waters of the Sileru river" on 4<sup>th</sup> September, 1962 at Hyderabad.

## **ORISSA STATE:**

1. Shri Biju Patnaik, Chief Minister
2. Shri B.Sivaraman, Chief Secretary to Government.
3. Shri Kartar Singh, Secretary to Government, P.W.D
4. Shri M.C.Pani, Addl. Chief Engineer, Irrigation.
5. Shri S.C.Tripathi, Superintending Engineer, P.W.D.

## **ANDHRA PRADESH**

1. Shri N.Sanjeeva Reddy, Chief Minister.
2. Shri A.C.Subba Reddy, Minister for Irrigation and Power.
3. Shri M.P.Pai, I.C.S., Chief Secretary to Government.
4. Shri S.A.Quader, I.A.S. Secretary to Government.
5. Shri L.Venkatakrishna Iyer, Irrigation Advisor and Consulting Engineer to Government and Additional Secretary, P.W.D.
6. Shri A.R.Venkataraman, Chief Engineer General and Irrigation
7. Shri G.A. Narsimha Rao, Chief Engineer (N.S.Canals).
8. Shri M.A.Rehman, Chief Engineer (Minor-Irrigation) .
9. Shri S.A.Quader, Chief Engineer, Ele. Projects & Board.
10. Shri M.C. Sampath Iyengar, Special Officer, Hydro-electric Projects.

1. A dam on Sileru with FRL 1516 shall be constructed at Balimela.
2. The weir at Guntwada, to be built entirely, at the cost of A.P. Government shall have specified heights as follows:

(a) The construction of weir at Guntawada will be as follows:

1<sup>st</sup> June, 1963 Spillway section 600 ft. at 1332  
and 400 ft. at 1320

15<sup>th</sup> April, 1964 Spillway section 800 ft. at 1332  
and 200 ft. at 1320

15<sup>th</sup> May, 1964 Spillway section 1000 ft. at 1332.

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<sup>37</sup> Andhra Pradesh in this agreement covers territories of present day Andhra Pradesh and Telangana.

Construction of sluices for 4000 cusecs discharge with water at 1320 will be provided.  
By December, 1964 Spillway section will be raised to crest level of 1340.

- (b) R.L.1340 ft. when this power plant is due to go into operation.
- (c) R.L.1360 ft. with 20 ft. gates over 1340 ft.  
R.L. crest when Balimela Dam has reached a height of at least 1400 ft. R. L.

Provided that in no case the height of water level at Guntawada, during floods or otherwise, shall exceed about 1360 ft. R.L. for maximum designed discharge of 2.5 lakh cusecs.

3. The cost of the Balimela Dam for common works shall be shared equally by Government of Andhra Pradesh and Government of Orissa.

4. Provided however that the share of Andhra Pradesh Government shall not exceed Rs.12.00 crores.  
As requested by the Andhra Pradesh Government, Orissa Government agreed to bear the Andhra Pradesh Government's share of expenditure over and above Rs.3.00 crores (as provided by Andhra Pradesh Government) during the third plan period.

Such amount as is advanced by Orissa Government on account of Andhra Pradesh Government will bear interest at the average rate of public loans floated by Orissa state during 1962-65, to be repaid to Orissa Government during the first year of the fourth Plan period.

Andhra Pradesh Government also undertake to place the balance of the funds required as their share during the Fourth plan period to the extent of the work actually done every year.

5. The design and specification of the Balimela Dam would be authorised by a Committee of three experts consisting of the following:

- (1) Dr. A.N. Khosla, Member, Planning Commission. (2) Dr. K.L.Rao, M.P.
- (3) Member, Designs, CW&PC.

When vacancies arise they shall be filled by the Control Board.

6. Half of the total inflow into Balimela Reservoir at Balimela Dam will be let down towards the Andhra Pradesh share and the other half into the Balimela High Head Power House of the Orissa Government. The flow to either power station will be as per the actual requirements. In any year from July 1<sup>st</sup> to June 30, the draw off by either party from storage shall not exceed half the allowed draw off for the year inclusive of evaporation losses but exclusive of surpluses due to filling of reservoir. Rules for regulations of the reservoir after it is in operation shall be drawn up by the Control Board.

7. Full facilities for investigation, construction and operation of weirs at Guntawada and Lower Sileru site as also Lower Sileru Dam at Donkarayi or nearby will be given by the Orissa Government to the Andhra Pradesh Government. Necessary land will be acquired in Orissa territories by the Orissa Government under the provisions of the land Acquisition Act. Similar assistance for the Balimela Reservoir will be given by the Andhra Pradesh Government to the Orissa Government for the areas in the Andhra Pradesh State.

8. The construction of Balimela Dam will be under a Joint Control Board on which Orissa and

Andhra Pradesh will have equal representation. The Chairman of the Board will be the Chief Minister of either state alternately for terms of a year, the first Chairman being the Chief Minister of Orissa. Works on the Balimela High Head Power House will be done by Orissa Government and on Guntawada Weir by Andhra Pradesh Government.

9. The power house at Balimela Dam utilising the Andhra share of water will be constructed by and at the cost of Andhra Pradesh Government and will be operated and be under full control of Andhra Pradesh authorities. This cost will include cost of Penstocks, Trash rack and intake structure. The High Head Balimela Power House will be operated and be under the full control of Orissa Government, which will bear all the relevant costs.

10. Below Balimela Dam, the entire flow of River Sileru and tributaries is left to the exclusive use of Andhra Pradesh State in such manner and at such times as they think fit. The Andhra Pradesh Government will construct the necessary works. Similarly below High Head Power House, the entire waters will be for the exclusive use of the Orissa State.

11. If and when any additional water is diverted into Machkund basins, from other basins, half the water will be given to Andhra Pradesh state and Andhra Pradesh should bear half the cost of diversion and storage works.

12. With the signing of this greement the Andhra Pradesh Government may proceed with the construction of the Guntawada weir and ancillary works as per the programme specified in Clause (2) in the Orissa portion of the River and territory. Similary works connected with the Balimela Dam may be taken up immediately.

13. Any alteration in the terms of this Agreement can be made only with mutual consent of both the parties.

Signed on behalf of the Government of Orissa.

(1) Biju Patnaik, Chief Minister.

(2) B.Sivaraman, Chief Secretary.

Signed on behalf of the Government of Andhra Pradesh.

(1) N.Sanjeeva Reddy, Chief Minister.

(2) M.P. Pai, Chief Secretary.

HYDERABAD (Dn.)

Dated 4<sup>th</sup> September, 1962

## **AGREEMENT OF CERTAIN INTER-STATE PROJECTS BETWEEN MAHARASHTRA AND MADHYA PRADESH**

The representatives of Maharashtra and Madhya Pradesh State, led respectively by their Minister of Irrigation and Power, Shri S.B. Chavan, and Minister of State for Irrigation, Shri R.P. Sharma, held discussions on the proposals regarding their irrigation projects<sup>38</sup> of inter-state interest namely,

- (1) Bagh Project,
- (2) Pench Hydel Project
- (3) Karwand Project, and
- (4) Tapi Project

on the 7<sup>th</sup> and 8<sup>th</sup> March, 1964 at Bhopal. As a result of discussions, the following agreed proposals were arrived at:-

### **1. BAGH PROJECT**

The net availability of water in Bagh Exclusive of loss by evaporation is as under:-

|                |              |
|----------------|--------------|
| Sirpur Storage | 6000 m.c.ft. |
| Lohara Storage | 4100 m.c.ft. |

These are the yields available at 75 percent dependability. Total availability upto Lohara is, thus 10,100 m.c.ft.

32,000 acres in the Lanji tract have to be irrigated in M.P. The water requirements of this area in accordance with the crop pattern envisaged by M.P. engineers is given as 2525 m.c.ft. at canal head. After satisfying this requirement, a balance of 7575 m.c.ft. is left for Maharashtra as against 8130 mc.ft. actually required for the crop pattern adopted by Maharashtra. The shortage is of the order of 500 m.c.ft. only and it is considered that it is not justifiable to construct another storage just to meet this shortage.

Accordingly the joint project for M.P. and Maharashtra will comprise:-

- (a) storage dam at Sirpur,
- (b) weir with some storage at Lohara,
- (c) a common canal on the left bank from Lohara upto the off-take of the branch taking off from the main canal for irrigation in the Lanji tract.

The cost of the above works will be shared by M.P. and Maharashtra in the proportion of their respective water utilizations, namely 1:3. The total utilization in a 75% dependable year would be 10,100 m.c.ft. at canal head. There will be years in which the actual supplies will be in excess or in deficit of this quantity. The M.P. and Maharashtra Governments recognize the principle that the excesses and deficits should also be shared by the States proportionately, namely in the ratio of 1:3.

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<sup>38</sup> First two projects namely Bagh and Pench projects are in Godavari basin and next two namely Karwand and Tapi projects are in Tapi basin in Maharashtra. The last two are omitted from this page and mentioned under agreements in Tapi basin.

This being a joint project, the designs, plans and estimates of the project elements common to both the States should be made available for the inspection of the M.P. engineers and their suggestions, if any, would be given full consideration.

The Governments of M.P. and Maharashtra, having reached an accord on the sharing of the waters of the Bagh river, the construction work on the project should be proceeded with, without any delay.

## II. PENCH HYDEL PROJECT

Pench Hydel Project site is almost at the border of Madhya Pradesh and Maharashtra States. It has a catchment area of 1657 sq.miles, of which 1640 sq.miles lies in M.P.

On the basis of available hydrological data, it has been roughly worked out that a total run-off of 60,000 m.c.ft. at 75% dependability would be available at the site.

Hitherto there is very little irrigation in this catchment. Topo-sheet studies have, however, shown the following potential for utilization of waters of this basin.

|     |   |                |
|-----|---|----------------|
| (a) | For medium and minor projects which have been pin-pointed on the maps   | 10,000 m.c.ft. |
| (b) | Diversion of waters for irrigation in Seoni, Balaghat and Chindwara districts of Waingana Basin                                       | 17,000 m.c.ft. |
| (c) | Potential for irrigation under small irrigation schemes which could not be located so far on the basis of maps (at 75% dependability) | 8,000 m.c.ft.  |
|     | Total   | 35,000 m.c.ft. |

This leaves a balance available at Pench Hydel Dam site as  $(60,000 - 35,000) = 25,000$  m.c.ft. There will however, be certain amount of return flow on account of regeneration from the irrigated area in this basin. Inclusive of this return flow about 30,000 m.c.ft. is, thus expected to be ultimately available at the site for power generation after meeting the irrigation requirements as envisaged above at present.

In these circumstances, M.P. Government has no objection to the investigation and construction of a hydro-electric project, jointly with Maharashtra, at the site mentioned above, utilizing the available supplies for power generation, subject to the condition that these supplies will be reduced progressively as irrigation in M.P. in the upper areas develops, the ultimate minimum use for power being limited to 30 TMC as indicated above.

This project will receive credit in respect of utilization of its tail waters for irrigation in Maharashtra State in due course.

Sd/-  
(S.B. CHAVAN)  
Minister of Irrigation, Power, Maharashtra.

Sd/-  
(R.P. SHARMA)  
Minister of State for Irrigation, Madhya Pradesh.



## **AGREEMENT REACHED REGARDING CERTAIN INTER-STATE IRRIGATION AND HYDEL PROJECTS BETWEEN MADHYA PRADESH AND MAHARASHTRA**

The Chief Minister of Maharashtra, Shri V.P. Naik, and the Chief Minister of Madhya Pradesh, Shri Shyam Charan Shukla met and discussed certain interstatal irrigation and hydel projects on the 16<sup>th</sup> May, 1969, in Bombay. They were assisted by other Ministers and Officers as mentioned below:-

| <u>MAHARASHTRA</u>  | <u>MADHYA PRADESH</u>  |
|---|--|
| 1. Shri S.B. Chavan,<br>Minister Irrigation and Power.  | 1. Shri V.R. Uikey,<br>Minister for Industries.  |
| 2. Shri D.R. Pradhan<br>Chairman, Maharashtra State Electricity<br>Board                              | 2. Kum. Vimla Verma,<br>Minister of State for Irrigation &<br>Electricity.                 |
| 3. Shri N.S. Pardasani,<br>Secretary, Irrigation and Power  | 3. Shri J.K. Bajaj,<br>Minister of State for Industries                                    |
| 4. Shri V.B. Manerikar,<br>Chief Engineer and Joint Secretary,<br>Irrigation and Power                | 4. Shri Nand Ram Das Balkavi Bairagi,<br>Minister of State for Publicity.                  |
| 5. Shri E.C. Saldanha,<br>Chief Engineer (Water Resources) & Joint<br>Secretary, Irrigation and Power | 5. Shri B.P. Pathak<br>Development Commissioner  |
|   | 6. Shri S.B. Lal<br>Secretary, Irrigation and Electricity                                  |
|   | 7. Shri K.L. Handa<br>Irrigation Adviser and Chief Engineer<br>(Major Irrigation Projects) |
|   | 8. Shri D.S. Sinha,<br>Chief Engineer (Irrigation)   |

2. The progress made so far in the implementation of the agreement dated 18<sup>th</sup> December, 1968 was generally reviewed. After detailed discussions, the Chief Minister reached the following agreements<sup>39</sup>:-

### 1. PENCH:

The Supplements Parts A and B of the Pench Project Report prepared by the Government of Maharashtra incorporating the extended tail race and the pumped storage scheme will be examined by the Government of Madhya Pradesh and their comments communicated to the Government of Maharashtra within a period of one month. Meanwhile, the supplements may be sent to the Central Water and Power Commission for clearance of the Project.

### 2. BAGH:

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<sup>39</sup> Agreements about projects of Tapi basin is omitted from this page and mentioned under agreements in Tapi basin

The alignment of the common carrier canal is to be finalized by both the Governments in a month's time; thereafter land for the canal will be acquired by the Government of Maharashtra expeditiously.

7. CONSTITUTION OF INTERSTATAL CONTROL BOARD FOR JOINT IRRIGATION AND HYDRO-ELECTRICAL PROJECTS.

With a view to ensuring efficient, speedy and economical investigation and execution of Joint Projects, the Government of Maharashtra and Madhya Pradesh agree, in principle to constitute an Interstatal Control Board. The details of the composition, functions and powers of the Board will be settled in due course.

8. The Governments of the two States will communicate to each other, as early as possible, the ratification of this agreement.

Sd/-  
(SHYAMA CHARAN SHUKLA)  
Chief Minister  
Madhya Pradesh

Sd/-  
(V.P. NAIK)  
Chief Minister  
Maharashtra

BOMBAY, THE 16<sup>TH</sup> May, 1969.

**AGREEMENT DATED 31<sup>st</sup> JANUARY 1975 BETWEEN THE GOVERNMENTS OF MAHARASHTRA AND ANDHRA PRADESH<sup>40</sup> REGARDING THE SWARNA PROJECT AND OTHER AGREEMENTS BETWEEN MADHYA PRADESH AND MAHARASHTRA REGARDING:**

- i) BAWANTHADI PROJECT.
- ii) BHOPALPATNAM PROJECT I & II.
- iii) KALISARAR PROJECT.
- iv) NUGUR 11 HYDRO-ELECTRIC PROJECT ON INDRAVATI RIVER
- v) KOTARI NIBRA HYDRO-ELECTRIC PROJECT.
- vi) BANDIA HYDRO-ELECTRIC PROJECT.

THIS AGREEMENT made this Thirty First day of January One Thousand Nine Hundred and Seventy Five between the Governor of Maharashtra (hereinafter referred to as "Government of Maharashtra") of the one part and the Governor of Andhra Pradesh (hereinafter referred to as "Government of Andhra Pradesh") of the other part.

WHEREAS the representatives of the Maharashtra Government led by the Secretary to the Government of Maharashtra, Irrigation and Power Department, Shri B.A. Kulkarni, and the representatives of the Government of Andhra Pradesh led by the Secretary to the Government of Andhra Pradesh, Public Works Department, Shri B.C. Gangopadhyay met in a conference at Bombay on the 17<sup>th</sup> June, 1972 to discuss proposals regarding the Swarna Irrigation Project of Andhra Pradesh (hereinafter referred to as "the said Project") .

AND WHEREAS, at the said conference certain proposals concerning the said project were formulated and agreed upon between the said representatives, subject to the same being confirmed by Government of Maharashtra and the Government of Andhra Pradesh.

AND WHEREAS, the proposals regarding the said project as now finally agreed upon between the Government of Maharashtra and Government of Andhra Pradesh are as set out in the schedule hereunder written.

AND WHEREAS the parties are desirous of entering into a formal agreement in connection therewith.

NOW THIS AGREEMENT WITNESSETH that the Government of Maharashtra and the Government of Andhra Pradesh hereby mutually confirm and agree to the proposals set out in the schedule hereunder written in connection with the said project, and the parties hereto covenant with each other that they shall duly observe and perform the conditions and provisions to be observed and performed respectively by them under or in the said proposals set out in the schedule hereunder;

**THE SCHEDULE**

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<sup>40</sup> Andhra Pradesh in this agreement covers territories of present day Andhra Pradesh and Telangana.

The Government of Andhra Pradesh and Maharashtra agreed to the completion of the Swarna Project of Andhra Pradesh subject to the following conditions:

(i) The availability of water at the Jawali Dam site of Swarna Project on the basis of 75% dependability is 2137 mcft., 70 mcft. which is existing user and 230 mcft. for future projects i.e. in all 300 mcft., should be reserved for the Upper state i.e. for use in Maharashtra catchment area. In respect of future projects for which 230 mcft should be reserved the Government of Maharashtra will intimate the Government of Andhra Pradesh about the particulars of acreage, cropping pattern and also the quantity of water required for each project, as and when a project is taken on hand.

(ii) The height of the Dam may have to be adjusted to the upstream use in Maharashtra as mentioned in clause no (i) above and subject to the reservation for upstream user mentioned in clause (i) above. The Government of Maharashtra has no objection to the decision of Government of Andhra Pradesh that the height of the Dam at the F.R.L. should be 1183. Acquisition for submergence area and rehabilitation of the affected people would be entirely at the cost of the Andhra Pradesh Government.

(iii) On the basis of F.R.L. 1183, the submergence in Maharashtra will be to the extent of 400 acres of which about 80 acres are Government lands and about 320 acres belong to private parties. The number of families of farmers who would be affected would be about 80. The number of families of farmers who would lose major portion of the holdings and hence need rehabilitation would be approximately 40. Each of the affected families which loses a major portion of its holdings has to be rehabilitated and should be given five acres of land out of which one half should be wet and one half should be dry, on payment of usual occupancy price for Government waste lands. The preference indicated by the affected persons is for allotment of lands in the following villages:

1. Koutla
2. Sarangpur
3. Jam Busrug
4. Chincholi
5. Borgaon
6. Jawali
7. Alur
8. Dheni.

The Government of Andhra Pradesh may consider giving preference to the lands available in these villages or as near to the original village as possible. It is not necessary that all the people needing rehabilitation should be rehabilitated in the same compact block.

(iv) The villagers from Maharashtra will be allowed to lift water by pumps from the Swarna Lake to irrigate their lands to the maximum extent of 150 acres. For this water supply the irrigators in Maharashtra will be charged the water rates by the Government of Andhra Pradesh in the same-manner and at the same rates as are applicable to the irrigators in Andhra Pradesh. Government of Maharashtra undertakes to restrict such lift irrigation within the agreed limit of 150 acres. The Government of Maharashtra also undertakes to recover and pay water charges to the Government of Andhra Pradesh in the event of the water rates not being paid by any of the irrigators in Maharashtra. The water so utilised by irrigators in Maharashtra will be accounted for against the upstream reservation being made for Maharashtra as in clause (i) above. The officials of the Government of Andhra Pradesh will be permitted and afforded all

facilities by the Government of Maharashtra for inspecting the pumping installations set up in, and the irrigation arrangements made for, the lands in Maharashtra State, to lift water by pumping from the part of the Swarna Reservoir located in the Maharashtra State.

(v) The project authorities will construct submersible bridge at the cost of the project in time to restore the communications from the village site of Apparaopeth to fields on the other side of the river. Further two or three suitable culvert crossings will be provided by the Government of Andhra Pradesh on Nallas. The existing cart track from Apparaopeth to Jawali from where there is a road to Nirmal, will get submerged by the Reservoir. The State of Andhra Pradesh will acquire lands and provide equivalent communication system between Apparaopeth and Jawali.

In witness whereof the Secretary to the Government of Maharashtra, Irrigation and Power Department has for and on behalf of the Governor of Maharashtra hereto set his hand and affixed the seal of his office and the Secretary to the Government of Andhra Pradesh, Public Works Department has for and on behalf of the Governor of Andhra Pradesh, hereto set his hand and affixed the seal of his office, to the day and year first herein above written.

Signed, Sealed, and Delivered by Shri Sd/- (V.R.Deuskar), Secretary to the Government of Maharashtra, Irrigation and Power Department for and on behalf of the Government of Maharashtra in the presence of:.

- (1) Sd/-  
( K. S. SHANKER RAO )  
Deputy Secretary to the Government of Maharashtra, and Irrigation and Power Department, Bombay, and
- (2) Sd/-  
(V.A. JOSHI)  
Under Secretary to the Government of Maharashtra, Irrigation and  
Power Department, Bombay.

Signed, Sealed and Delivered by Shri Sd/- (M.Gopalkrisnnan), Secretary to Government of Andhra Pradesh, Public Works Department for and on behalf of the Governor of Andhra Pradesh in the presence of:

- (1) Sd/  
( G.HANUMANTHA REDDY )  
Deputy Secretary to Government (Works), Public Works Department, and
- ( 2)Sd/  
( C.S. SAVAVANAM )  
Assistant Secretary to Government, Public Works Department.

## **AGREEMENT BETWEEN THE GOVERNMENTS OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED BAWANTHADI PROJECT**

The Governments of Madhya Pradesh<sup>41</sup> and Maharashtra agree to execute the Bawanthadi Project, across the Bawanthadi river a sub-tributary to Wainganga, in the Pranbita sub-basin of the Godavari river basin, as a joint project and for this purpose the two Governments further agree as follows:

The 75 percent dependable yield at the site is 21 TMC and the storage of Bawanthadi head works at Sitekasa site would be designed for a total utilisation of 16 TMC i.e. for a utilisation of 8 TMC in each of the two States of Maharashtra and Madhya Pradesh. Madhya Pradesh can also utilise additional water from Bawanthadi headworks from the run of the river till the upstream use in Madhya Pradesh fully develops and later on from the regeneration as and when it may develop.

2. Five TMC of water will be reserved at 75 percent dependability for the use upstream of the Bawanthadi Project within the State of Madhya Pradesh.
3. The storage will be constructed with FRL at RL 1135.5 ft. and MDDL RL 1104.8.
4. The headworks of the Bawanthadi Project i.e. the Sitekasa Dam and Bawanthadi Left Bank Canal will be constructed by Madhya Pradesh and the Right Bank Canal will be constructed by Maharashtra
5. The cost of headworks i.e. Sitekasa dam will be shared equally between the two States, while the cost of canals will be borne by each State as the canals are independent.
6. The cost of investigation, surveys and preparation of project report will be shared equally for the dam portion while for the canals it will be borne by the respective States.

Sd/  
( B.A. KULKARNI )  
Secretary to.Govt. of Maharashtra  
Irrigation and Power Department

Sd/-  
( MANOHAR KESHAV )  
Secretary to Government of Madhya  
Pradesh, Irrigation and Electricity Department

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<sup>41</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.

## AGREEMENT BETWEEN THE GOVERNMENT OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED BHOPALPATNAM PROJECT I AND II

An Hydro-Electric Part of a multipurpose project on the Indravati river with two storages and power houses at the foot of dams at Bhopalpatnam I and Bhopalpatnam II sites has been investigated and a project report prepared jointly by the States of Maharashtra and Madhya Pradesh<sup>42</sup> in January 1974. The report of Irrigation part of Bhopalpatnam II is in hand.

2. Upstream of this project, among others, a Bodhghat Hydel project is planned by Madhya Pradesh. Between this project and Bhopalpatnam I project the anticipated inflow and upstream use, as agreed by the two States are as below.:

|              | M.P.<br>MAF (TMC) | Maharashtra<br>MAF (TMC) | Total<br>MAF (TMC) |
|--------------|-------------------|--------------------------|--------------------|
| Inflow       | 8.15<br>(355.01)  | 2.07<br>(90.17)          | 10.22<br>(445.18)  |
| Upstream use | 5.00<br>(217.80)  | 0.51<br>(22.22)          | 5.51<br>(240.02)   |

3. The F.R.L. of Bhopalpatnam I storage is planned to be R.L.657 ft. and Bhopalpatnam II storage R.L.410 ft. The M.D.D.Ls. R.L.579 and R.L.408, respectively. The gross storages at F.R.L. are 335 TMC and 1.37 TMC respectively. The dead storages are 38 TMC and 1.29 TMC respectively.

4. The annual releases after power generation at 90 percent dependability from Bhopalpatnam I project will be 351 TMC and the estimated annual evaporation losses of the reservoir will be 22.65 TMC.

5. The annual releases after power generation at 90 percent dependability from Bhopalpatnam II project will be 331 TMC, the estimated annual irrigation withdrawals by Maharashtra will be 10 TMC and by Madhya Pradesh 10 TMC, the estimated annual evaporation losses in the reservoir will be 0.23 TMC.

6. The Governments of Madhya Pradesh and Maharashtra further agree as follows:

- (1) The above project will be planned, constructed and operated by the two States jointly.
- (2) The power benefits will be shared as will be mutually agreed upon by the two States
- (3) The cost of the common works (i.e. all works excluding the canals systems for irrigation in the two States from Bhopalpatnam II) will be shared on the basis of power benefits to the two States.
- (4) The evaporation losses of  $22.65 + 0.23 = 22.88$  TMC in the two storages will be shared equally by the two States.

Sd/-  
( B.A. KULKARNI )  
Secretary to Govt. of Maharashtra  
Irrigation and Power Department

Sd/-  
(MANOHAR KESHAV )  
Secretary to Govt. of Madhya Pradesh  
Irrigation and Elect. Department

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<sup>42</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.

## **AGREEMENT BETWEEN THE GOVERNMENTS OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED KALISARAR PROJECT**

The estimated total annual 75 percent dependable flow of the Kalisarar river of Kalisarar Project at Mahajantola dam site is 2.1 TMC. The reservation for irrigation upstream of Mahajantola dam site by Madhya Pradesh is 0.9 TMC. After allowing for the said 0.9 TMC upstream reservation, the net 75 percent dependable annual flow available at Mahajantola dam site is 1.2 TMC.

2. The Governments of Madhya Pradesh<sup>43</sup> and Maharashtra further agree as follows:
- (1) The Kalisarar project at Mahajantola will be joint venture of the two States namely Maharashtra and Madhya Pradesh and the gross storage capacity of Mahajantola dam will be 1145 M cft.
  - (2) The Mahajantola dam will be planned and constructed by Maharashtra Government. It shall be operated and maintained jointly by both the States in a manner to be determined later.
  - (3) The storage will be constructed to hold a gross storage of 1145 M.cft. with F.R.L. at RL. 345 m. (1131.60 ft.). The dead storage capacity will be 4.67 M.cm. (165 M.c.f.) and therefore MDDL will be at R.L. 336.60 m (1104.00 ft.).
  - (4) The storage will be used by Maharashtra and Madhya Pradesh from canals ex-Pujaritola pickup weir which form a part of the Bagh project, in the ratio of 3 : 1.
  - (5) There will be years in which the actual inflows will be in excess or in deficit. The Madhya Pradesh and Maharashtra State Governments recognise the principle that the excess and deficit should also be shared by the State proportionately, namely in the ratio of 1 : 3 respectively.
  - (6) The cost of constructing, maintaining and operating Mahajantola storage will be shared by the two States, Maharashtra and Madhya Pradesh, in the proportion of 3 : 1.

Sd/  
( B. A. KULKARNI )  
Secretary to Govt. of Maharashtra  
Irrigation and Power Department

Sd/-  
{ MANOHAR KESHAV }  
Secretary to Govt. of Madhya Pradesh  
Irrigation and Electricity Department

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<sup>43</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.



**AGREEMENT BETWEEN THE GOVERNMENTS OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED NUGUR-II HYDRO-ELECTRIC PROJECT ON THE INDRAVATI RIVER**

It is proposed to construct storage on the Indravati river near a place called Karkawada. The site investigations and studies have established that it is possible to generate about 25,000 KWs at 60 percent load factor at a power house at the foot of the dam utilising a head of about 58 feet.

2. The Governments of Madhya Pradesh<sup>44</sup> and Maharashtra agree as under:

- (1) The states of Maharashtra and Madhya Pradesh will plan, construct and operate the project as jointly agreed to.
- (2) The power generated will be shared on the basis to be mutually agreed upon by the two States.
- (3) The cost of project will be shared in the ratio of power benefits derived from this Project by the two States.
- (4) The evaporation losses in the storage estimated at 2 TMC will be shared equally by the two States.

Sd/  
( B . A. KULKARNI )  
Secretary to Government of Maharashtra  
Irrigation and Power Department

Sd/-  
( MANOHAR KESHAV )  
Secretary to Govt. of Madhya Pradesh  
Irrigation and Electricity Department

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<sup>44</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.

## **AGREEMENT BETWEEN THE GOVERNMENTS OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED KOTRI NIBRA HYDRO-ELECTRIC PROJECT**

It is proposed to construct storages on the rivers Kotri and Nibra tapping the run off from about 3,000 square miles catchment area. The site investigations and studies establish that it is possible to generate 25,000 KWs at 60 percent load factor from a power house located at the foot of Kotri dam, 6,700 KWs at 60 percent load factor from a power house located at the foot of Nibra dam and a further 67,500 KWs from a third powerhouse located downstream.

2. The Governments of Madhya Pradesh<sup>45</sup> and Maharashtra agree as under:

|     |   |
|-----|---|
| (1) | The States of Maharashtra and Madhya Pradesh will jointly plan, construct and operate the Project.                  |
| (2) | The power generated will be shared as will be mutually agreed upon by the two States.                               |
| (3) | "The cost of the project will be shared in the ratio of power benefits derived from this Project by the two States. |
| (4) | The evaporation losses in the storages estimated at 11 TMC will be shared equally by the two States.                |

Sd/  
(B. A. KULKARNI)  
Secretary to Govt. of Maharashtra  
Irrigation and Power Department

Sd/  
(MANOHAR KESHAV)  
Secretary to Govt. of Madhya Pradesh  
Irrigation and Electricity Department

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<sup>45</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.

## **AGREEMENT BETWEEN THE GOVERNMENTS OF MADHYA PRADESH AND MAHARASHTRA FOR THE PROPOSED BANDIA HYDRO-ELECTRIC PROJECT**

It is proposed to construct a storage of Bandia river in Sironcha taluka of Maharashtra tapping run off from about 640 square miles catchment area. The site investigations and studies have established that it is possible to generate about 6,350 KWs at 60 percent load factors.

The Governments of Madhya Pradesh<sup>46</sup> and Maharashtra agree as under:

|     |   |
|-----|---|
| (1) | The States of Maharashtra and Madhya Pradesh will jointly plan, construct and operate the project.                        |
| (2) | The power generated will be shared on the basis to be mutually agreed upon by the two States.                             |
| (3) | The cost of project will be shared in the ratio of sharing of power benefits derived from this project by the two States. |
| (4) | The evaporation losses in the storage estimated at 3.5 TMC will be shared equally by the two States.                      |

Sd/  
( B. A. KULKARNI )  
Secretary to Govt. of Maharashtra  
Irrigation and Power Department

Sd/-  
( MANOHAR KESHAV )  
Secretary to Govt. of Madhya Pradesh  
Irrigation and Electricity Department

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<sup>46</sup> Madhya Pradesh covers the territories of present day Madhya Pradesh and Chhattisgarh.

**PROCEEDINGS OF THE MEETING BETWEEN THE CHIEF MINISTERS OF ANDHRA PRADESH AND ORISSA AT HYDERABAD ON THE 15<sup>th</sup> DECEMBER, 1978**

The following were present:

| ANDHRA PRADESH   | ORISSA   |
|--|--|
| 1. Dr. M. Channa Reddi<br>Chief Minister   | 1. Sri Nilamani Routroy<br>Chief Minister                          |
| 2. Sri G. Raja Ram<br>Minister for Finance<br>and Power                          | 2. Sri Pratap Chandra Mohanty<br>Minister for Revenue and<br>Power |
| 3. Sri G.V.Sudhakar Rao<br>Minster for Major Irrigation and<br>Commercial Taxes  | 3. Sri Prahlad Mallik,<br>Minister for Irrigation                  |
| 4. Sri I.J. Naidu, I.A.S.<br>Chief Secretary                                     | 4. Sri B.M. Patnaik<br>Advocate General                            |
| 5. Sri S.R. Ramamurthy, IA.S.<br>Secy. To Chief Minister                         | 5. Sri B. Ramjadorai, I.A.S<br>Secy. Irrigation and Power          |
| 6. Sri P. Ramachandra Reddi<br>Advocate General                                  | 6. Sri A.K. Biswal<br>Secy to Chief Minister                       |
| 7. Sri C.N. Shastri, I.A.S.<br>Secretary, Irrigation and Power                   | 7. Sri S.C. Tripathy<br>Chief Engineer, Irrigation                 |
| 8. Sri M.Gopalakrishnan, LA. S.<br>Secretary, Primary and<br>Secondary Education | 8. Sri B. Misra<br>Chief Engineer<br>Electricity                   |
| 9. Dr. N.Tata Rao<br>Chairman<br>A.P.S.E. Board                                  | 9. Sri M.L. Lath<br>Executive Engineer<br>Irrigation               |
| 10. Sri Satnarayan Singh<br>Special Officer,<br>Water Resources                  |  |
| 11. Sri D.V. Sastry, Advocate  |  |

After full discussions, the following agreement was reached.

1. Andhra Pradesh<sup>47</sup> would sell from out of its share 20% of the total power being generated at

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<sup>47</sup> Andhra Pradesh in this agreement covers territories of present day Andhra Pradesh and Telangana.

Machkund from time to time to Orissa subject to a minimum of 20 MW along with the corresponding block of energy which would mean 20% of the energy that would be generated on a day to day basis subject however to adjustments being made on a monthly basis.

2. Under this agreement the total energy that could be spared by Andhra Pradesh to Orissa will be limited to 20% of the total energy generated during the course of the year. In case the total energy that could be drawn by Orissa shall exceed 50% of the total energy generated at Machkund during the year under review.

3. For the transfer of power envisaged, by this arrangement, Orissa shall compensate Andhra Pradesh at the rate of 8.0 paise (eight paise per unit.)

4. Any block of energy that may be exchanged between two electricity boards in excess of the provisions envisaged in this agreement shall be governed by such terms and conditions and rates of supply as may be separately agreed upon from time to time between the two state Electricity Boards.

5. The rate agreed upon as per para 3 of this agreement is exclusive central excise duties and any, such taxes and duties as may be levied from time to time by the Government of India and shall be payable by Orissa.

6. Orissa will be drawing the block of power which Andhra Pradesh will be sparing under this agreement in the same manner in which it is drawing its own share of power.

7. This agreement is co-terminus with the first review of the royalty as per the agreement of 14th January 1946 between Orissa and former Madras Government and is renewable thereafter for ten years on such terms and conditions as may be mutually agreed upon between the two state Governments.

8. This agreement will come into force from 1st April, 1979.

Sd/  
( DR. M. CHANNA REDDI )  
Chief Minister  
Andhra Pradesh

Sd/-  
( NILAMANI ROUTROY )  
Chief Minister  
Orissa

**PROCEEDINGS OF THE MEETING HELD ON 27.7.1980 AT 11 A.M. AT BHUBANESWAR BETWEEN THE OFFICERS OF THE GOVERNMENT OF ODISHA AND GOVERNMENT OF ANDHRA PRADESH<sup>48</sup> TO SETTLE OUTSTANDING MATTERS**

**1. Forest Growth : Upper Sileru Project:**

It was noted that for the Upper Sileru (Guntawada) project in Andhra Pradesh, a total extent of 2771.31 acres of surveyed land was submerged. Secretary, Forest Deptt. Odisha, observed that there could be other unsurveyed lands which were also submerged and that the exact extents would be known only after joint survey. After discussion, it was agreed that a joint survey of the unsurveyed area, if any, which had come under submersion would be taken up and completed by the end of March, 1981. If, after the joint survey, it appeared that any additional unsurveyed lands were also submerged an attempt would be made to ascertain if any of these lands supported any forest growth at the time they came under submersion.

Out of the extent of 2771.31 acres of surveyed land submerged, an extent of 2434.47 acres had forest growth. Secretary Forest Deptt. Govt. of Orissa indicated that in the year 1966, the project authorities were requested to pay at the rate of Rs. 231.00 per acre towards the unmarketable forest growth. He clarified that this amount was very nominal and was arrived at charging a stumping charge varying between 30 paise to 60 paise per cft as against the present rates which vary between Rs. 10/- to Rs. 25/- per cft. The amount of Rs. 231/- per acre is intended towards compensatory afforestation of equivalent area elsewhere in Orissa. He clarified that the present rate of compensatory afforestation in force in the State of Orissa as per G.O. No. 25806, dtd. 26.09.1978 is Rs. 360/- per acre. It was pointed out that the project authorities had still not paid charges at Rs. 231/- per acre, though a request was made in the year 1966. After detailed discussion, it was agreed that for the forest growth on the extent of 2434.47 acres, compensatory afforestation rate of Rs. 360/- would be paid to the Govt. of Orissa by the Upper Sileru Project Authorities by the end of Sept. 80. It was pointed out that so far as Upper Sileru Project was concerned, no charges were being levied towards clear felling charges. Thus the amount payable to the Govt. of Odisha before Sept. 80 come to Rs. 8,76,409/-.

It was also agreed that the joint survey referred to at (A) above revealed that any additional unsurveyed areas were submerged and it was established on a mutually agreed basis that any forest growth was supported by any unsurveyed land, compensation for the forest growth of these lands would also be paid at the same rates.

**2. FOREST GROWTH : Lower Sileru Project:**

The total submerged area of the Lower Sileru Project comes to 5629.58 acres. Out of this the land, the land supporting forest growth, both under forest Deptt. and Revenue Deptt. was stated to have been assessed at 4609 acres. It was clarified by the representatives of the Odisha Govt. that no doubt existed about the areas submerged and the extent of 5629.58 acres was the firm and final figure. Therefore, in this project no joint survey would be needed.

It was noted that the Odisha Govt. had requested the project authorities to pay a sum of Rs. 1,76,034/- towards the cost 12817 trees and other forest growth standing in an extent of 242.50 acres which were occupied by the project authorities for the construction of labour sheds stores

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<sup>48</sup> Andhra Pradesh in this agreement covers territories of present day Andhra Pradesh and Telangana.

etc. after clearing the forest growth. This amount was calculated at four times of scheduled of rats. It was noted that this amount was still to be paid by the project authorities.

The representatives of the Odisha Govt. also mentioned that in addition, charges at Rs. 360/- per acre towards compensatory afforestation and charges at Rs.136/- per acre for clear felling had also to be paid for the remaining extent of 4366.60 acres.

After a detailed discussion, it was agreed that for the extent of 4609 acres towards compensatory afforestation and clear felling charges, rates would be paid at a modified basis in final clearance of all the forest claims of the Odisha Govt. in regard to Lower Sileru Project as follows:

|              |   |                         |
|--------------|---|-------------------------|
| 1.           | Rs. 360/- per acre towards compensatory afforestation for 4609 acres. | Rs. 16,59,240.00        |
| 2.           | Clear felling charges at s. 136/- per acre for 4609 acrs.             | Rs. 6,26,824.00         |
| <b>Total</b> |   | <b>Rs. 22,86,064.00</b> |

It was agreed that the A.P. Project authorities would pay this amount to Odisha Govt. by the end of September 80.

So far as the claim of the Odisha Govt. Towards mines and minerals on the Odisha side for utilization on Project works is concerned. It was noted that the Govt. of Odisha have claimed Rs. 53286.92 under various bills. It was noted that these works were done long ago with contracts dating back to 1971-72. After verifying the records it was found that the project authorities had already paid a sum of Rs. 10,540.92 to Odisha Govt. considering the long period which had elapsed after the works were done and actual quantities used were not available, it was agreed, after detailed discussion, that the amount already paid by the project authorities would be regarded as full and final settlement of the claim raised by the Govt. of Odisha on this account.

### **3. PRIVATE LAND :**

It was found that besides forest land, other Govt. land etc., the Upper and Lower Sileru projects involved submersion of private lands to the extent of 42.74 acres in Upper Sileru and 70.42 acres in Lower Sileru. It was noted that these lands have been formally acquired and compensation has also been paid by the A.P. Govt. It was also noted that these acquired lands have not been formally handed over yet. R.D.C. Southern Division mentioned that subsequently it has been found that an area of another 33.70 acres of private land has also been submerged by the Upper Sileru waters and these lands have not been acquired yet. Requisition for acquisition has been placed by the Govt. of A.P. in May 1977. It was agreed that acquisition would be proceeded with and the compensation amount required would be paid by the Project authority.

### **4. LEASE DEED :**

The Revenue Secy. Odisha gave a brief resume of the past negotiations with reference to the lease deed for the lands submerged by Upper Sileru and Lower sileru reservoirs. He also explained that the Govt. of Odisha has considered the points raised by the Andhra Pradesh Government in the past and in regard to a few of them Govt. of Odisha has agreed with the point of view of the Govt. of A.P. However, in regard to certain others it was not possible to agree with the point of view of Govt. of A.P. The Secy. Revenue Deptt. Odisha circulated new lease deed incorporating the latest position. Secy. A.P., I & P mentioned that prima facie he had

reservations about clauses 4 (1) and 9 of the new lease deed. He said that he would need time to study the new lease deed and react to it within a month.

The question relating to payment of salami was discussed. The representatives of the Govt. of Odisha pointed out that the salami of Rs. 100/- per acre would be chargeable only for the Govt. lands which were submerged by Upper Sileru and Lower Sileru reservoirs. It was agreed that the Upper Sileru submersion area would be finalized after the survey of un surveyed area was done, which would be in addition to the submersion of 2771.31 acres of surveyed area. In regard to Lower Sileru it was agreed that Salami would be chargeable for an area of 5559.16 acres [5629-70.42 acres of private land = 559.16 acres].

#### **5. LAND REQUIRED FOR A.P. POWER HOUSE AT BALIMELA:**

Secretary I & P.A.P pointed out that the original requisition about 250 acres of land which was temporarily required by the contractors. It was agreed that the contractors would directly deal with the Govt. of Odisha for the temporary lands which they required during he construction activity.

Secretary, I & P.A.P. mentioned that for the purpose of power house a total area of 28.80 cres would be required permanently. This was considered reasonable. It was also agreed that a master plan would be prepared and sent to Govt. of Odisha indicating the utilization of 28.80 acres.

Secretary, I & P.A.P. enquired whether the area of 28.80 acres has already been acquired for Balimela. Collector, Koraput said that the land was Govt. land. There were 2 or 3 buildings of the Balimela project in that area. The rest of the land had not been formally handed over to the Balimela project authorities. Collector, Koraput also mentioned that there were some encroachments of landless Harijans and others which, according to the Odisha Law, would have to be settled with the landless people and then the lands would be acquired. It was agreed that no further encroachments should be allowed in the area and in regard to the encroachments already existing the normal formalities would be observed.

**6. PAYMENT OF ODISHA ELECTRICITY DUTY:** Secretary, I & P, Odisha, mentioned that an amount of Rs. 3.77 crores was outstanding with the APSEB towards arear electricity duty. The amount related to two time periods.

15/8/73 to 10/1/76 – Rs. 1.94 crores.

11/1/76 to 30/6/78 – Rs. 1.83 crores.

**Total - Rs. 3.77 crores.**

Secretary, I & P Orissa, mentioned that in addition to the electricity duty there was also arrear of one crore and odd which are disputed amounts on account of discrepancy in metre readings. It was agreed that the disputed outstanding amounts would be settled by the OSECB and APSEB.

In regard to electricity duty, Secy. I & P Odisha pointed out that it would not be possible for the Govt. of Odisha to write of such a huge amount of Rs. 3.77 crores. The Member, APSEB pointed out that electricity duty was not chargeable to inter-State transactions and therefore could not be paid. Secretary, I & P Odisha clarified that the position of electricity duty not being payable on inter-State transaction was never accepted by the Govt. of Odisha. Had this been denied that the very early stage the problem could have been sorted out by giving an all inclusive price. In any case Odisha had similar problems in the past with Bihar and the matter has been sorted out. It



was agree that APSEB would discuss the matter in the Board and send proposal to the OSEB regarding the manner in which it wanted to settle the matter. Alternatively, it was also agreed that the matter might be referred for a settlement at the level of Chief Ministers of Andhra and Odisha. Secretary, Odisha clarified that this issue had to be settled before land for A.P. Power House at Balimela could be handed over. This was noted.

**7. MACHHAKUND :**

The matter was discussed at length. There are two types of dues – one payable by the Govt. of Odisha till the project management was transferred to the OSEB and the second after the transfer payable by the OSEB to the APSEB. In regard to the former since it was a Govt. transaction the A.G. had to come into the picture. It was agreed that in regard to Governmental dues payable by the Govt. of Odisha the matter would be sorted out after further consultations with both the A.Gs.

In regard to payments by OSEB to APSEB which are due now and will be due in future, it was agreed that the matter would be discussed in the Machhkund joint Control Board and new procedure evolved, if necessary by common consent, by modification of Machhakund agreement.<sup>49</sup>

**Sd/- B. Ramadorai,  
Secretary,  
Irrigation and Power Deptt.  
Government of Odisha**

**Sd/- C.S. Sastry,  
Secretary,  
Irrigation & Power Deptt.  
Government of Andhra Pradesh**

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<sup>49</sup> Decision about Jhanjhavati and Vanshadhara are mentioned under agreements under Vanshadhara basin, hence omitted under this page.

**GODAVARI RIVER BASIN AGREEMENT**

WHEREAS certain discussions have taken place amongst the five States of Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra and Orissa, subsequent to meeting of 19<sup>th</sup> July, 1975 held at New Delhi on the use of the waters of the Godavari river and its tributaries, and

WHEREAS in pursuance thereof the following agreements<sup>50</sup> have been entered into between the States hereinafter mentioned, viz :--

- (a) Agreement between the States of Karnataka and Andhra Pradesh on 17-9-1975 --- Annexure-I ;
- (b) Agreement between the States of Maharashtra and Andhra Pradesh on 6-10-1975 – Annexure-II;
- (c) Agreement between the States of Madhya Pradesh and Andhra Pradesh on 7-11-1975 – Annexure-III ;
- (d) Agreement between the States of Orissa and Madhya Pradesh on 9-12-1975 – Annexure –IV ;

WHEREAS the States of Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh and Orissa have considered the said bilateral agreements in their meeting on 19-12-1975 at New Delhi.

NOW the States of Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh and Orissa hereby agree to the sanction and clearance of projects for the utilization of waters of the Godavari river and its tributaries in accordance with the said agreements, provided that nothing in these agreements will be treated as a concession by any State in respect of any of its contentions in any other water disputes with any other State or with respect to the dispute regarding the sharing of the balance quantity of water in the Godavari and its tributaries. State in this agreement means any of the aforesaid five States.

The five basin States agree that this agreement will be filed before the Godavari Water Disputes Tribunal.

NOW as a testimony thereof, we the Chief Ministers of concerned States append our signatures.  
New Delhi,  
December 19, 1975.

(Sd.) 19-12  
(J.VENGAL RAO)  
*Chief Minister,  
Andhra Pradesh.*

(Sd.) 19-12-1975  
(D. DEVARAJ URS),  
*Chief Minister,  
Karnataka.*

(Sd.) 19-12-1975  
(P.C. SETHI),  
*Chief Minister,  
Madhya Pradesh*

(Sd.) 19-12-1975  
(S.B.CHAVAN), Chief  
Minister,  
Maharashtra.

(Sd.)  
(NANDINI SATPATHY),  
Chief Minister,  
Orissa.

In presence of

(Sd.)  
(K.N.SINGH),  
*Deputy Minister, Ministry of Agriculture  
and Irrigation, Government of India.*

(Sd.)  
(JAGJIVAN RAM),  
*Minister of Agriculture and Irrigation,  
Government of India.*

<sup>50</sup> This Agreement and Agreements mentioned under Annexure-I to IV are part of decision of GWDT.

## ANNEXURE I.

### PROCEEDING OF A MEETING BETWEEN THE CHIEF MINISTERS OF KARNATAKA AND ANDHRA PRADESH, HELD AT BANGALORE ON THE 17<sup>th</sup> SEPTEMBER, 1975.

The following were present :

#### *Karnataka :*

1. Shri D. Devaraj Urs, Chief Minister.
2. Shri Subash Asture, Minister of State for Major and Medium Irrigation.
3. Shri G.V.K. Rao, Chief Secretary.
4. Shri I.M. Magdum, Special Secretary to Government, P.W.D.
5. Shri J.C. Lynn, Secretary to Chief Minister.
6. Shri B. Subramanyam, Superintending Engineer, W.R.D.O
7. Shri A.V. Shanker Rao, Superintending Engineer, W.R.D.O.
8. Shri. S.K. Mohan, Under Secretary to Government, P.W.D.

#### *Andhra Pradesh :*

1. Shri. J. Vengal Rao, Chief Minister.
2. Shri Ch. Subbarayudu, Minister for Municipal Administration.
3. Shri C.R. Krishnaswami Rao Saheb, Secretary to Chief Minister.
4. Shri M. Gopalakrishnan, Secretary, Irrigation & Power.
5. Shri B. Gopalakrishna Murthy, Special Officer, Water Resources.
6. Shri G.K.S. Iyyengar, Superintending Engineer, Inter-State-I, Water Resources.

1. The discussions related to the clearance of projects upstream of Nizamsagar in Karnataka and Andhra Pradesh States.

2. After full discussion, the following points were agreed to, as an interim measure :

(a) Karnataka may go ahead with the following two projects, and the utilization will be as indicated against each :

| <i>Name of Project</i>  |    |    | <i>Utilisation of Water</i> |
|-------------------------|----|----|-----------------------------|
| (i) Karanja Project     | .. | .. | 13.10 TMC ft.               |
| (ii) Chulkinala Project | .. | .. | 1.17 TMC ft.                |

(b) Andhra Pradesh may go ahead with the construction of a reservoir at Singur for the withdrawal of 4 (four) TMC ft. for purposes of drinking water for Hyderabad city.

3. Andhra Pradesh stated that they propose to construct the Reservoir at Singur with a capacity of 30 TMC ft. and that this may involve the submersion of some land in Karnataka State. In that event, the details regarding the project and of the submersible land in Karnataka will be furnished to the Government of Karnataka for their consideration. Karnataka stated that any evaporation loss from the Reservoir should come out of the share of Andhra Pradesh.

4. The Chief Minister of Andhra Pradesh is having discussions with the Chief Minister of

Maharashtra also about the construction of projects in the Manjira sub-basin. Details of any agreements arrived at will be made available to the Government of Karnataka, so that all the three State Governments could arrive at mutually consistent agreements.

5. The details of the interim agreement among the three States will be furnished to the Government of India, and also filed before the Tribunal, at the appropriate time.

D.DEVARAJ URS,  
*Chief Minister,*  
*Karnataka.*

J. VENGAL RAO,  
18-9-1975  
*Chief Minister,*  
*Andhra Pradesh*

**PROCEEDINGS OF THE MEETING BETWEEN THE CHIEF MINISTERS OF  
MAHARASHTRA AND ANDHRA PRADESH HELD AT HYDERABAD ON THE  
6<sup>th</sup> OCTOBER 1975.**

The following were present:

*Andhra Pradesh*

1. Sri J. Vengal Rao, Chief Minister.
2. J. Chokka Rao, Minister for Agriculture and Transport.
3. Sri. N. Bhagwandas, IAS, Chief Secretary.
4. Sri. P. Ramachandra Reddi, Advocate-General .
5. Sri. A. Krishnaswami, IAS, 1<sup>st</sup> Member, Board of Revenue.
6. Sri. C.R. Krishnaswamy Rao Sahib, IAS, Secretary to Chief Minister.
7. Sri. M. Gopalakrishnan, IAS, Secretary, Irrigation & Power.
8. Sri. P. Sitapati, IAS, Joint Secretary, Irrigation & Power.
9. Sri. B. Gopalakrishnamurthy, Special Officer, Water Resources.
10. Sri. M. Jaffer Ali, Adviser, Irrigation.
11. Sri. D.V. Sastry, Government Pleader.
12. Sri. G.K.S. Iyengar, SE, Inter – State Circle-I.

*Maharashtra :*

1. Sri S. B. Chavan, Chief Minister.
2. V. B. Patil, Minister, Irrigation .
3. Sri. M.N. Phadke, Barrister-at-Law.
4. Sri. V.R. Deuskar, Secretary, Irrigation Deptt.
5. Sri. M.G. Padhye, Chief Engineer (W.R) and Joint Secretary, Irrigation Deptt.
6. Sri. K .S. Shankar Rao, S.E. & Deputy Secretary, Irrigation Deptt.
7. Sri. Sridhara Rao Joshi, Spl. Officer, Irrigation Deptt.,

The discussions related to the clearance of the Projects on and the use of waters of Godavari River and its tributaries.

After full discussions the following points were agreed to :

I. Maharashtra can use for their beneficial use all waters upto Paithan dam site on the Godavari and upto Siddheswar dam site on the Purna.

II. (i) From the waters in the area of the Godavari basin below Paithan dam site on the Godavari and below Siddheswar dam site on the Purna and below Nizamsagar dam site on the Manjira and upto Pochampad dam site on the Godavari, Maharashtra can utilize waters not exceeding 60 TMC for new Projects including any additional use over and above the present sanctioned or cleared utilization, as the case may be.

(ii) Andhra Pradesh can go ahead with building its Pochampad Project with FRL 1091 and MWL 1093 and is free to utilize all the balance waters upto Pochampad dam site in any manner it chooses for its beneficial use. Maharashtra will take necessary action to acquire any land or structures that may be submerged under Pochampad Project and Andhra Pradesh agrees to bear the cost of acquisition, the cost

of rehabilitation of the displaced families and the cost of construction of some bridges and roads that may become necessary. Maharashtra also agrees to the submergence of the river and stream beds.

III. (i) In the Manjira sub-basin above Nizamsagar dam site, Maharashtra can utilize waters not exceeding 22 TMC for new projects including any additional use over and above the present sanctioned or cleared utilisation as the case may be.

(ii) Andhra Pradesh can withdraw 4 TMC for drinking water supply to Hyderabad city from their proposed Singur Project on the Manjira.

(iii) Andhra Pradesh can construct Singur Project with a storage capacity of 30 TMC. Andhra Pradesh can also use 58 TMC under Nizamsagar Project.

IV. Maharashtra concurs with the agreement arrived at between the States of Andhra Pradesh and Karnataka in regard to the use proposed by Karnataka in the Manjira sub-basin upstream of Nizamsagar dam site.

V. Maharashtra and Andhra Pradesh will be free to use additional quantity of 300 TMC of water each below Pochampad dam site for new Projects.

VI. Maharashtra and Andhra Pradesh agree in principle to the taking up of the Inchampalli Project with FRL as commonly agreed to by the interested States, viz., Maharashtra, Andhra Pradesh and Madhya Pradesh.

VII. Maharashtra and Andhra Pradesh agree to take up the following joint projects at the appropriate time with agreed utilisations:

a) Lendi Project

b) Lower Penganga Project.

c) Pranahita Project.

and to set up joint committees for this purpose.

VIII. The States of Maharashtra and Andhra Pradesh agree that this agreement will be furnished to the Government of India and also be filed before the Godavari Water Disputes Tribunal at the appropriate time.

Sd/-

J.VENGALA RAO,

6-10-1975,

*Chief Minister, Andhra Pradesh.*

Sd/-

S.B. CHAVAN,

6-10-1975,

*Chief Minister, Maharashtra*

### ANNEXURE III

#### PROCEEDINGS OF THE MEETING BETWEEN THE CHIEF MINISTERS OF MADHYA PRADESH AND ANDHRA PRADESH HELD AT NEW DELHI ON THE 7<sup>th</sup> NOVEMBER 1975.

The following were present :

##### *Madhya Pradesh*

1. Sri P.C. Sethi, Chief Minister.
2. Shri. V.R. Uike, Minister for Irrigation and Electricity.
3. Shri Manohar Keshav, Secretary, Irrigation & Electricity.
4. Shri Y.S. Chitale, Senior Advocate.
5. Shri R.C. Jain, Commissioner, Madhya Pradesh, Delhi.
6. Shri S. R. Bhatia, Secretary to Chief Minister.
7. Shri V.M. Chitale, Deputy Secretary, Irrigation.
8. Shri H.V. Mahajani, Superintending Engineer, Godavari Basin Circle.

##### *Andhra Pradesh*

1. Shri. J. Vengal Rao, Chief Minister.
2. Shri P. Ramachandra Reddi, Advocate General.
3. Shri C.R. Krishna Swamy Rao Saheb, Secretary to Chief Minister.
4. Shri C.M. Shastry, Special Commissioner, Govt. of Andhra Pradesh.
5. Shri M. Gopalakrishnan, Secretary, Irrigation & Power.
6. Shri B. Gopalakrishnamurthy, Special Officer, Water Resources.
7. Shri D.V. Sastry, Govt. Pleader.
8. Shri G.K.S. Iyengar, Superintending Engineer, Inter-State Circle – I.

The discussions related to the clearance of the projects and the use of waters of Godavari River and its tributaries.

2. After full discussions the following points were agreed to ---

(I) Madhya Pradesh and Andhra Pradesh will be free to use an additional gross quantity of 300 TMC each out of the water in the Godavari River and its tributaries below Pochampad Dam site for new projects.

(II) Madhya Pradesh concurs generally with the agreement arrived at between Andhra Pradesh and Maharashtra on 6-10-1975. The quantity of 300 TMC mentioned in clause I above will not be in addition to 300 TMC agreed to between Andhra Pradesh and Maharashtra as per agreement dated 6-10-1975.

(III) In agreeing to 300 TMC referred to in clauses I and II above, for Andhra Pradesh, Madhya Pradesh on its part, has taken into account the estimated requirements within the basin only.

(IV) Madhya Pradesh and Andhra Pradesh agree in principle to the taking up of the Inchampalli project with F.R.L. as commonly agreed to by the interested States viz. Maharashtra, Andhra Pradesh and Madhya Pradesh.

(V ) It is also agreed that Madhya Pradesh and Andhra Pradesh will consider the feasibility of taking up the Inchampalli Project as a Joint Project with costs and benefits equitably shared amongst the above 3 States in accordance with a common agreement.

(VI) Madhya Pradesh agrees to the taking up Taliperu project by Andhra Pradesh involving a use of 5 TMC (Gross) of water out of the 300 TMC agreed to in clause I and to the submersion of river bed only in Madhya Pradesh. Andhra Pradesh agrees to put up at its cost such protective measures as would be necessary in consultation with Madhya Pradesh to prevent submersion of other areas in Madhya Pradesh.

(VII) The States of Madhya Pradesh and Andhra Pradesh agree that nothing in this agreement will be treated as a concession by other State in respect of any of their contentions in any other water dispute with any other State or with respect to the dispute regarding the sharing of the balance of water in Godavari and its tributaries.

(VIII) The States of Madhya Pradesh and Andhra Pradesh agree that this agreement will be furnished to the Government of India and they would be requested to expedite the clearance of the projects.

This Agreement will also be jointly filed before the Godavari Water Disputes Tribunal at the appropriate time.

Sd/-  
(P.C. SETHI)  
Dt. 7-11-1975  
*Chief Minister, Madhya Pradesh*

Sd/-  
(J.VENGAL RAO)  
Dt. 7-11-1975  
*Chief Minister, Andhra Pradesh*



**Agreement between the States of Orissa and Madhya Pradesh on 9-12-1975.****PROCEEDINGS OF THE MEETING BETWEEN THE CHIEF MINISTERS OF ORISSA AND MADHYA PRADESH HELD AT NEW DELHI ON THE 9<sup>th</sup> DECEMBER, 1975.**

The following were present

*Orissa*

1. Smt. Nandini Satpathy, Chief Minister.
2. Shri Dibya Lochan Shekhar Deo, Minister for Irrigation & Power.
3. Shri B.K. Mishra, Additional Development Commissioner.
4. Shri N.R. Hota, Secretary, Irrigation and Power.
5. Shri Suresh Chandra Tripathy, Chief Engineer, Irrigation.
6. Shri K.S.R. Chandran, Special Commissioner, Liaison.
7. Shri R.K. Rath, Secretary to Chief Minister.
8. Shri Govind Das, Senior Advocate.
9. Shri M. Lath, Executive Engineer.

*Madhya Pradesh*

1. Shri P.C. Sethi, Chief Minister.
2. Shri V.R. Uike, Minister for Irrigation and Electricity
3. Shri Aziz Qureshi, Minister for State for Irrigation and Electricity.
4. Shri Manish Bahl, Secretary, Irrigation and Electricity.
5. Shri. K.L. Handa, Irrigation Adviser.
6. Shri Y.S. Chitale, Senior Advocate.
7. Shri R.C. Jain, Commissioner, Madhya Pradesh.
8. Shri V.M. Chitale, Deputy Secretary, Irrigation.
9. Shri H.V. Mahajani, Superintending Engineer.

The discussions related to the use of water of the Godavari basin and the clearance of projects of Madhya Pradesh and Orissa.

2. After full discussions, the following agreement was arrived at :-

I. Pending final allocation of the Godavari water, Madhya Pradesh and Orissa will be free to use additional gross quantity of 300 TMC and 200 TMC respectively, out of the water of the Godavari basin below Pochampad Dam site for new projects in such manner as they deem fit.

II. In agreeing to 200 TMC referred to in Clause I for Orissa, Madhya Pradesh on its part has taken into account the estimated requirements within the basin only. All the utilization by Orissa and Madhya Pradesh contemplated in the various Clauses shall be only as a part of the 200 TMC and 300 TMC respectively agreed to in Clause I above. The States of Orissa and Madhya Pradesh will not be entitled on the basis of the subsequent Clauses to utilise in any way more than 200 TMC and 300 TMC respectively.

III. Below the dam sites of the Upper Indravati Project, as proposed by Orissa, there is a catchment area of about 1,855 sq. miles in the Indravathi Sub-basin upto Orissa border with Madhya Pradesh. From this catchment there is some natural flow across the Jaura Nallah to Sabari (Kolab) river. It was agreed that Orissa will ensure at its border with Madhya Pradesh a flow of 45 TMC in the Indravati and its

tributaries at 75 per cent dependability for use by Madhya Pradesh. In the years of shortage, the shortage will be shared proportionately between the two States and the assurance of flow in the Indravati and its tributaries, referred to above, will stand proportionately reduced. Both the States agree to joint gauging at suitable points to ascertain the yield data and to ensure the flow of 45 TMC at 75 per cent dependability or the proportionately reduced flow in years of shortage that has to flow below the common border. The figure of 45 TMC is on the assumption of total yield of 204 TMC from the Indravati sub-basin in Orissa and 91 TMC utilization for the Upper Indravati Project. If the assessment of 204 TMC is found to be high and the correct figure is lower than 204 TMC and the utilization for the Upper Indravati Project gets reduced from the figure of 91 TMC then the figure of 45 TMC will get reduced in the same proportion as the reduction in the figure of 91 TMC

IV. In view of the agreement incorporated in the above clauses, Madhya Pradesh agrees to the clearance and execution of Upper Indravati Project, as proposed and submitted by Orissa to the Government of India. Orissa also agrees to the clearance and execution of Bodghat Project, as may be modified by Madhya Pradesh taking into account the water availability specified in Clause III.

V. It is agreed that Madhya Pradesh and Orissa will consider the feasibility of taking up joint projects in the Sabari Sub-basin from the point Sabari (Kolab) river forms the common boundary between both the States upto the point where it joins the Sileru river, on the basis of common agreements to be drawn up at appropriate time. The hydel power and the cost debitable to generation of such power will be shared equally between the two States in these projects. The costs and benefits of irrigation, if any from these projects will also be equitably shared among both the States. Orissa will be free to make beneficial use of the water of this river above the common boundary point and lying in its territory in such manner as it deems fit.

VI. Notwithstanding the agreement on the joint projects on the river Sabari (Kolab) mentioned in Clause V, if there is any submersion of land and properties of either State by other projects sponsored by the other State or any other State in the Godavari basin, the question of submersion and the problems connected there with will have to be mutually settled before execution of such projects.

VII. Madhya Pradesh and Orissa agree that nothing in this agreement will be treated as a concession by either State in respect of any of their contentions in any other water dispute with any other State or with respect to the dispute regarding the sharing of the balance of water in Godavari and its tributaries.

VIII. Madhya Pradesh and Orissa agree that this agreement will be furnished to the Government of India and they would be requested to expedite the clearance of the new projects. This agreement will also be jointly filed before the Godavari Water Disputes Tribunal at the appropriate time.

Sd/-  
Dt. 9-12-1975  
(NANDINI SATPATHY)  
*Chief Minister, Orissa*

Sd/-  
Dt. 9-12-1975  
(P.C. SETHI),  
*Chief Minister, Madhya Pradesh*

(True copy as received from the Chief Minister, Orissa under D.O. Letter no. 7173 dated 9-12-1975 to the Union Minister of Agriculture & Irrigation.)

Sd/-  
(H.J. DESAI),  
*Deputy Secretary (F)*  
*Ministry of Agriculture & Irrigation*  
*(Department of Irrigation)*

**AGREEMENT<sup>51</sup> ENTERED INTO BETWEEN THE STATES OF MAHARASHTRA, MADHYAPRADESH AND ANDHRA PRADESH.**

On the basis of series of discussions held between the representatives of the States of Maharashtra, Madhya Pradesh and Andhra Pradesh, the following Agreement is arrived at regarding the sub-basin wise allocations of the waters of the Godavari and its tributaries down-stream of the Pochampad Dam in the State of Andhra Pradesh, the projects therein and other allied matters, taking into consideration the allocations already agreed to under the Inter-State Agreement dated 19-12-1975 and in furtherance of the same and as a supplement thereto for final allocations of all the waters of the various sub-basins mentioned herein.

*I. G-5 Middle Godavari sub-basin:*

*(1) Maharashtra.*

The State of Maharashtra can use a quantity of 0.4 TMC of water in the Middle Godavari sub-basin for the existing, under construction and proposed projects/schemes downstream of the Pochampad Dam.

*(2) Andhra Pradesh :*

The State of Andhra Pradesh can use all the remaining waters in the Middle Godavari sub-basin downstream of the Pochampad Dam.

*II. G-6 Manair Sub-basin :*

*Andhra Pradesh :*

The State of Andhra Pradesh can use all the waters of the Manair sub-basin.

*III. G-7 Penganga Sub-basin:*

*(1) Maharashtra*

(A). The State of Maharashtra can use all the waters upto:

(i) Lower Penganga Project site near Chikal Wardha on Penganga river, Lat. 19°-55' N and Long. 75°-15' E subject to the condition that the Lower Penganga Project would be taken up as a joint Project. The details of the joint project will be negotiated separately by the States of Maharashtra and Andhra Pradesh.

(ii) Waghadi Project Dam site on the Waghadi river near village Yelbara, Lat. 20°-12'-30" N and Long. 78°-18'-10" E.

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<sup>51</sup> This Agreement is part of Decision of GWDT.

(iii) Saikheda Dam on Khuni river near village Lingti, Lat. 20°-06'-30" N and Long. 78°-28'-15" E.

(B). In addition to the use of all the waters of the Penganga sub-basin upto the points as specified in clause (III) (1) (A) (i) to (A) (iii) above, the State of Maharashtra can use from the waters of the rest of the Penganga sub-basin 9 TMC for its existing, under construction and proposed schemes/projects each of which individually will not exceed an annual use of 1.5 TMC.

(2) *Andhra Pradesh.*

The State of Andhra Pradesh can use all the remaining waters of the Penganga sub-basin.

IV. *G-8 Wardha Sub-basin:*

(1) *Madhya Pradesh.*

(a) The State of Madhya Pradesh in terms of the Agreement relating to certain Inter-State irrigation and hydel projects between Madhya Pradesh and Maharashtra dated 18<sup>th</sup> December, 1968 can use 9 TMC for its existing, under construction and proposed schemes/projects which are located upstream of the contemplated Upper Wardha Project of the State of Maharashtra.

(b) In addition to the use of the waters in clause (IV) (1) (a) above, the State of Madhya Pradesh can use a quantity of 1 TMC for its existing, under construction and proposed schemes/projects in the remaining portion of the sub-basin.

(2) *Maharashtra.*

(i) Subject to the use by the State of Madhya Pradesh as stipulated above, the State of Maharashtra can use all the waters of the river Wardha and/or its tributaries for its existing, under construction and proposed projects/schemes upto the following points:

(a) upto Tulana Project, Lat. 20°-12' N and Long. 78°-57' E on the Wardha river at Tulana village subject to Para (IV) (1) (a) and (b) above.

(b) On the tributaries of the Wardha river joining downstream of the Tulana Project site upto

(i) Chargaon Project (under construction) across Chargaon river Lat. 20°-23'-20" N and Long. 79°-10'-45" E;

(ii) Nirguda Project, Lat. 20°-03' N and Long 78°-53' E; and

(iii) Bandara Project Lat. 19°-40'-15" N Long. 79°-23'-55" E

(ii) In addition to the use of water upto the projects as specified in clauses (IV) (2) - (i) (a) & (b), the following uses are agreed to for the schemes existing, under construction and proposed in the Wardha sub-basin downstream of the project sites mentioned above.

|     |   |          |
|-----|---|----------|
| (1) | Mudhali Project   | 2.80 TMC |
| (2) | Lift Irrigation from Dhanora weir                           | 2.70 Do  |
| (3) | Lift Irrigation from Mared weir                             | 2.80 Do  |
| (4) | Lift Irrigation from Kalmana weir                           | 2.00 Do  |
| (5) | Lift Irrigation from Tohegaon weir                          | 1.60 Do  |
| (6) | Lift Irrigation from Sonapur weir                           | 2.00 Do  |
| (7) | Usagaon Bulsani and Chandur Lift Irrigation Schemes         | 3.00 Do  |
| (8) | Other Schemes each of which individually utilising not more | 9.10 Do  |

than 1.5 TMC  
Total:

26.00 TMC

Provided that in the event of full quantity of water agreed to be allocated for any of the items 1 to 7 above cannot be sanctioned for use at any of those projects, the balance of the quantity of water allocated hereinabove for projects at Items 1 to 7 above can be sanctioned for use by the State of Maharashtra in any of the other projects as specified in items 1 to 8 subject to the condition that the total uses of all such sanctions for the projects as specified in items 1 to 8 shall not exceed 26 TMC.

(3) *Andhra Pradesh :*

The State of Andhra Pradesh can use all the remaining waters of the Wardha sub-basin.

(V) *G-9 Pranhita sub-basin :*

(i) *Madhya Pradesh.*

(A) The State of Madhya Pradesh can use all the waters for the various existing, under construction and proposed projects/schemes in the Pranhita sub-basin upto the sites indicated below:

*Kanhan sub-valley:*

(i) *Nandna Integrated Project*

- (a) Nandna dam site across the tributary of river Kanhan, near village Nandna Lat. 22°-13'-0" N and Long. 78°-28'-48" E.
- (b) Chenkatwari dam site across the Kanhan near village Piparia Lat. 22°-12'-24" N and Long 78°-26'-48" E.

(ii) *Amla Integrated Project*

- (a) Amla dam site across Bel river near village Amla, Lat. 21°-55'- 0" N and Long. 78°-08'-50" E.
- (b) Parsadi dam site across the tributary of Bel river near village Parsadi. Lat. 21°-56'-55" N and Long. 78°-12'-0" E.
- (c) Dhutmur dam site across the tributary of Bel river near village Dhutmur. Lat. 21°-58'-0" N and Long. 78°-13'-0" E.
- (d) Mohali dam site across the tributary of Bel river near village Mohali. Lat. 21°-58'-0" N and Long. 78°-12'-0" E.

(iii) *Dokdoh Integrated Project*

- (a) Dokdoh dam site across the Dokdoh Nalla near Village Dokdoh. Lat. 21°-33'-50" N and Long. 78°-44'-15" E.
- (b) Chirkutagondi dam site across the tributary of the Jamnalla near village Chirkutagondi Lat. 21°-35'- 0" N and Long. 78°-41'-0" E.
- (c) Khairi dam site across the tributary of the Kanhan near village Khairi. Lat. 21°-31'-0" N and Long. 78°-50'-0" E.
- (d) Chhindwani dam site across the tributary of Dokdoh Nalla near village Chhindwani. Lat. 21°-34'- 0" N and Long. 78°-45'-40" E.

(iv) *Mohgaon integrated project*

- (a) Mohgaon dam site across the Sampna nala near village Mohgaon. Lat. 21°-38'-55" N and Long. 78°-43'-30" E.
- (b) Jamalapani dam site across the Satki nala near village Jamalapani. Lat. 21°-40'-20" N and Long. 78°-43'-20" E.
- (c) Khurpara dam site across the Khurpara nalla near village Ambakhapa. Lat. 21° -39'-0" N and Long. 78°-40'-0" E.
- (d) Jam nalla dam site across the Jam nalla near village Kondar. Lat. 21°-38'-0" N and Long. 78°-38'-0" E.

(v) Sovana Nalla Project.

- (a) Sovana Dam site across Sovana Nalla near village Badosa. Lat. 21°-41'-15" N and Long. 78°-53'-40" E.

(B) Downstream of the project sites as specified in clause (V) (1) (A) above, the State of Madhya Pradesh can use an additional quantity of 14 TMC for its existing, under construction and proposed projects/schemes each using not more than 1.5 TMC annually.

(C) (a) The State of Maharashtra has suggested the need of creating certain storages in the territory of the State of Madhya Pradesh to regulate water for use in the State of Maharashtra. In this particular situation as a special case the State of Madhya Pradesh has agreed to construct or augment storage/storages across the Kanhan at sites within its territory, location of which will be decided by the State of Madhya Pradesh, for regulation of 15 TMC of the Kanhan flows at 75 per cent dependability for use in the State of Maharashtra between 15<sup>th</sup> October to 30<sup>th</sup> June. As these storages will be created for the State of Maharashtra, the entire cost of these storages or augmentation as the case may be including the cost of compensation for lands, properties and rehabilitation etc., will be incurred as per the norms for such works in vogue in the Country at the time of the construction of the project and will be borne entirely by the State of Maharashtra. The details of provision of such storage/storages or augmentation would be mutually settled by the two State Governments at the appropriate time later.

(b) The State of Madhya Pradesh can generate power, by bearing the cost of power component only at the storage/storages as specified in clause (V) (1) (C) (a) above, without any power to be allocated to the State of Maharashtra. The power component is not to include any cost on account of the dam/storage.

(c) The State of Madhya Pradesh can construct at its cost a low dam/pick up weir or such other structures as may be necessary, below the storage/storages as mentioned in clause (V)(1)(C) (a) above, at any future date, in order to improve the peaking capability of the power system within the State.

(d) The State of Maharashtra for its use of 15 TMC as regulated by storage/storages as specified in clause (V) (1) (C) (a) above, agrees to construct pickup weir, downstream, in its territory with adequate pondage to cater for the fluctuating releases in consultation with the State of Madhya Pradesh.

(D) The State of Maharashtra has proposed a pick up weir at Temurdoh across the Kanhan, which will cause submergence in the State of Madhya Pradesh. The details of extent of submergence are not yet

indicated. The State of Madhya Pradesh agrees to consider the proposal when the details of submergence are known, provided the submergence is kept to a minimum and is acceptable to the State of Madhya Pradesh.

The provision of compensation for lands, properties and rehabilitation etc., will be made as per the norms for such works being adopted in the Country at the time of the construction of the project and will be borne by the State of Maharashtra.

(E) The State of Madhya Pradesh can lift water from the river Kanhan and its tributaries within its territory and downstream of the storage/storages as specified in clause (V) (1) (A). The use will be within the use of 14 TMC as specified in clause (V) (1) (B) above, and without prejudice to the right of the State of Maharashtra for the flow of 15 TMC of regulated water as specified in clause (V) (1) (C) (d) above.

(F). *Rest of the Wainganga Sub-valley.*

The State of Madhya Pradesh can use all waters in the Wainganga sub-valley upto the sites mentioned below :

- (a) The Dhuti weir across the Wainganga near village Dhuti.
- (b) The following project sites on the tributaries of the Wainganga, joining downstream of the Dhuti weir.
  - (1) Mahakari dam site across the Mahakari river near village Lamata.  
Lat. 22°-07'-55" N and Long. 80°-07'-45" E.
  - (2) Nahara Multipurpose Project.
    - (i) Nahara Dam site across Nahara river near village Warurgota.  
Lat. 22°-05'-30" N and Long. 80°-19'-35" E.
    - (ii) Diversion site across Nahara river near village Khami.  
Lat. 21°-32'-15" N and Long. 80°-38'-0" E.
  - (3) Son Multipurpose Project.
    - (i) Son dam site across river Son near village Baigatola.  
Lat. 21°-32'-15" N and Long. 80°-38'-0" E.
    - (ii) Diversion site across Son river near village Sarra.  
Lat. 21°-32'-15" N and Long. 80°-30'-0" E.
  - (4) Deo Ama Multipurpose Project
    - (i) Deo Dam site across Deo river near village Sukalpat.  
Lat. 21°-47'-30" N and Long. 80°-33'-0" E.
    - (ii) Ama Dam site across Ama river near village Bithli.  
Lat. 21°-32'-15" N and Long. 80°-38'-0" E.
    - (iii) Diversion site across Deo river near village Bhagatpur.  
Lat. 21°-45'-35" N and Long. 80°-29'-0" E
  - (5) Karadi tank across Pandharipat Nalla near village Karadi.  
Lat. 21°-25'-0" N and Long. 80°-35'-0" E
  - (6) Sarathi Tank across Sarathi nalla near village Tikari.  
Lat. 21°-56'-0" N and Long. 79°-58'-50" E.
  - (7) Nahlesara tank across Chandan river near village Nahlesara.  
Lat. 21°-49'-30" N and Long. 79°-47'-30" E.
  - (8) Daidburra tank across Katanga nalla near village Daidburra.



Lat. 21°-41'-24" N and Long. 79°-53'-0" E.

(G) The State of Madhya Pradesh can use the waters of the river Bagh upto the Pujaritola pick up weir and the waters of the river Bawanthadi upto Sitekasa dam site; and waters of the river Pench upto the Tatladoh Dam, in accordance with the Agreements already entered into, or as may be agreed to in future, between the States of Madhya Pradesh and Maharashtra for use of waters upto these sites.

(H) Downstream of the project sites as specified in clauses (V) (1) (F) and (V) (1) (G) above, the State of Madhya Pradesh can use an additional quantity of 59 TMC for its existing, under construction and proposed projects/schemes each using not more than 1.5 TMC annually.

(I) (i) The State of Maharashtra has suggested the need of creating certain storages in the territory of the State of Madhya Pradesh to regulate water for use in the State of Maharashtra. In this particular situation as a special case, the State of Madhya Pradesh agrees to make provision of suitable additional storage at one or more than one project/projects out of those specified in clause (V) (1) (F) above to be decided by the State of Madhya Pradesh for the regulation of 15 TMC of water at 75 per cent dependability for use in the State of Maharashtra lower down during 15<sup>th</sup> October to 30<sup>th</sup> June. The entire cost of such additional storage / storages or augmentation for the above regulation, will be borne by the State of Maharashtra. The cost to be borne by the State of Maharashtra will also include the cost on account of compensation for land and properties and rehabilitation etc., as per the norms for such works in vogue in the Country at the time of the construction of the project. This quantum of 15 TMC would be made available out of the waters which the State of Madhya Pradesh can use as specified in clause (V) (1) (F) above. The details of provisions of the necessary storages for this regulation will be mutually settled by the two State Governments at the appropriate time later.

(ii) The State of Madhya Pradesh can generate power from such storage/storages by bearing the necessary costs of power component only at the storage/storages as specified in clause (V) (1) (F) above without any power to be allocated to the State of Maharashtra. The power component is not to include any cost on account of the dam/storage.

(iii) The State of Madhya Pradesh can provide at its cost a low dam/pickup weir or such other structure as may be necessary downstream of the Project sites as specified in clause (V) (1) (F) in order to improve the peaking capability of the power system within the State.

(iv) The State of Maharashtra for its use of 15 TMC as specified in clause (V) (1) (F) above agrees to construct a pick up weir downstream in its territory with adequate pondage to cater for the fluctuating releases, in consultation with the State of Madhya Pradesh.

## (2) *Maharashtra.*

(A) Subject to what has been stated above regarding use of the Pranhita sub-basin waters by the State of Madhya Pradesh, the State of Maharashtra can use all waters of the river Wainganga and/or its tributaries upto the following points :

(i) Gasikhurd Project site on the Wainganga river near village Gosikhurd.  
Lat. 20°-51'-0" N and Long. 79°-37'-20" E.

- (ii) Lower Chulband Dam site on the Chulband river near village Bonde.  
Lat. 21°-02'-0" N and Long. 79°-57'-0" E.
- (iii) Itiadoh dam on the Garvi river near village Gothangaon.  
Lat. 20°-47'-45" N and Long. 80°-10'-05" E.
- (iv) Satti Project site on the Satti river near village Palasgad.  
Lat. 20°-38'-0" N and Long. 80°-17'-0" E.
- (v) Lower Tultuli dam site on the Khobragadi river near village Tultuli.  
Lat. 20°-26'-0" N and Long. 80°-14'-0" E.
- (vi) Lower Kathani dam site on the Kathani river near village Rajoli.  
Lat. 20°-14'-30" N and Long. 80°-15'-30" E.
- (vii) Karwappa Project dam site on Karwappa Nalla near village Nakkaponli.  
Lat. 20°-07'-40" N and Long. 80°-13'-40" E.
- (viii) Bhimkund dam site on the Pohar river near village Wakri.  
Lat. 19°-55'-0" N and Long. 79°-58'-30" E.
- (ix) Dina dam on the Dina river near village Regree.  
Lat. 19°-45'-0" N and Long. 80°-07'-0" E.
- (x) Buti nala dam site on the Buti nala near village Panoti.  
Lat. 20°-39'-0" N and Long. 79°-48'-0" E.
- (xi) Gardi Project dam site on the Gardi nalla near village Chandgaon Khurd.  
Lat. 20°-35'-20" N and Long. 79°-50'-0" E.
- (xii) Nimghat dam site on the Nimghat Dhoda nalla near village Mendki.  
Lat. 20°-28'-15" N and Long. 79°-48'-50" E.
- (xiii) Asolamendha dam on the Pathri river near village Asolamendha.  
Lat. 20°-28'-15" N and Long. 79°-50'-0" E.
- (xiv) Ghorajhari dam on the Bokardho nalla near village Ghorajhari.  
Lat. 20°-32'-0" N and Long. 79°-38'-0" E.
- (xv) Human nalla dam site on the Human nalla near village Chirkhada.  
Lat. 20°-14'-0" N and Long. 79°-34'-35" E.
- (xvi) Naleshwar dam on the Ursa nalla near village Naleshwar.  
Lat. 20°-15'-0" N and Long. 79°-35'-35" E.
- (xvii) Andhari dam site on the Andhari river near village Pahami.  
Lat. 20°-06'-0" N and Long. 79°-28'-0" E.

(B) In addition to the use of all the waters of the river Wainganga and /or its tributaries upto the points as specified in clauses (V) (2) (A) (ii) to (V) (2) (A) (xvii) above, the State of Maharashtra can use, from the waters of rest of the Pranhita sub-basin 41 TMC for its existing, under construction and proposed schemes/projects using annually not more than 1.50 TMC individually.

### (3) *Andhra Pradesh :*

(A) The State of Andhra Pradesh can use the remaining waters of the Pranhita sub-basin.

(B) It is also agreed that Pranhita Hydro-electric Project is not viable and therefore has to be given up. However, the States of Andhra Pradesh and Maharashtra agree to have barrage/barrages across the Pranhita river at suitable sites so that they may provide irrigation facilities in their areas. The quantum of water that will be used by Maharashtra from these barrages will be reckoned against 41 TMC as specified in clause (V) (2) (B) above. The joint Project/Projects for such barrages are to be taken up after reaching

separate Agreement/Agreements for them, between the States of Maharashtra and Andhra Pradesh, either for the benefit of both the States or one State.

( VI) G-10 *Lower Godavari sub-basin* :

(1) *Maharashtra* :

The State of Maharashtra can use upto 1 TMC for its existing, under construction and proposed schemes/projects in the Lower Godavari sub-basin.

(2) *Madhya Pradesh* :

(A) The State of Madhya Pradesh can use all the waters upto the following sites:

(a) Mukpara (Sankampalli) Project. Mukpara dam site across Talperu river near village Mallepalli.  
Lat. 18°-36'-43" N and Long. 80°-56'-45" E.

(b) Tummal vagu dam site across Tummal vagu near village Junaguda.  
Lat. 18°-25'-33" N and Long 81°-03'-32" E.

(c) Joranvagu Integrated Project.

(i) Joranvagu dam site across Joranvagu near village Durma.  
Lat. 18°-27'-26" N and Long. 81°-13'-36" E.

(ii) Dhondivagu dam site across Dhondivagu near village Kamaram.  
Lat. 18°-24'-10" N and Long. 81°-13'-20" E.

(d) Malavagu Project. Malavagu dam site across Malavagu near village Chintalnar. Lat. 18°-21'-35" N and Long. 81°-11'-48" E.

(e) Raspalle Project.

Raspalle dam site across tributary of Chinta river near village Raspalle.  
Lat. 18°-12'-0" N and Long. 80°-58'-38" E.

(B) Downstream of the projects as specified in clause (VI) (2) (A) above, the State of Madhya Pradesh can use an additional quantum of 9 TMC for its existing, under construction and proposed schemes/projects each using not more than 1.5 TMC annually.

(C) The State of Madhya Pradesh agrees to the submersion of its river bed only due to the Taliperu project of the State of Andhra Pradesh. The State of Andhra Pradesh agrees to put up at its costs, such protective measures as would be necessary in consultation with the State of Madhya Pradesh, to prevent submergence of other areas in the State of Madhya Pradesh due to aforesaid project. The State of Andhra Pradesh agrees to forward the details of submergence in the State of Madhya Pradesh along with the Project Report. The construction of the project would be taken up in hand after mutual agreement to the submergence and measures to protect the flooding of the area of the State of Madhya Pradesh.

(D) (a) The States of Madhya Pradesh, Maharashtra and Andhra Pradesh agree to take up the Inchampalli Multi-purpose Project as a joint venture with an FRL and MWL as may be agreed to by the three States. The project will be surveyed, planned, executed and subsequently operated and maintained under the directions of a Tripartite Interstate Control Board, duly constituted for this purpose by the three States concerned. The State of Andhra Pradesh cannot divert for its use more than 85 TMC directly from the Inchampalli reservoir. No part of the reservoir losses at Inchampalli shall be debitable to the shares of water agreed to for the States of Maharashtra and Madhya Pradesh herein

above or hereunder in this Agreement. The balance available water shall be used for power generation at Inchampalli Power House. The compensation for the acquisition of lands and properties belonging to both the Government as well as private parties would be charged to the construction of storage. The provision for the rehabilitation of the oustees will be made as per the norms for such works in vogue in the Country at the time of the construction of the project and charged to the construction of storage.

(b) The State of Andhra Pradesh shall bear 78.10 per cent of the cost of Inchampalli storage, the State of Maharashtra shall bear 10.50 per cent and the State of Madhya Pradesh shall bear 11.40 per cent.

(c) The power generation at Inchampalli and the cost of power component, excluding the storage cost, shall be shared between the States of Madhya Pradesh, Maharashtra and Andhra Pradesh in the proportion of 38, 35, 27 per cent respectively. After generation of power the State of Andhra Pradesh can use the water released in any manner they like.

(d) The States of Madhya Pradesh, Maharashtra and Andhra Pradesh would be free to use 3 TMC, 4 TMC and 5 TMC, respectively, by lifting water from the Inchampalli reservoir for use in their own territory without bearing any cost of the storage. The quantum of this use will be accounted for against the provision under clauses (VI) (2) (B) and (VII) (C) for the State of Madhya Pradesh; and clauses (III) (1) (B), (IV) (2) (ii), (V) (2) (B), (VI) (1) and (VII) (E) for the State of Maharashtra; and out of 85 TMC specified in this clause for the State of Andhra Pradesh.

(e) The States of Madhya Pradesh, Maharashtra and Andhra Pradesh would be free to develop pisciculture and boating facilities in their own territories under submergence. The sovereign rights over the submerged lands upto their territorial limits shall continue to vest with the respective States.

(f) The three States agree that the FRL/MWL as may be agreed to for the Inchampalli reservoir shall be only on the express condition that any of the provisions, facilities given for utilisation of waters of the Godavari and its tributaries, to each other in this Agreement herein above or hereunder is not at all disturbed.

(g) Navigational facilities at the Inchampalli reservoir shall be allowed free to the States of Madhya Pradesh, Maharashtra and Andhra Pradesh.

(h) A pumped storage scheme may be introduced below the Inchampalli reservoir as part of the Inchampalli project Hydro-electric Component. Such a scheme may be constructed even by one or two of the three States and the other State or States may later share the benefits of the said scheme by paying their share of the cost of the scheme as may be mutually agreed to.

(3) *Andhra Pradesh* .:

The State of Andhra Pradesh can use the remaining waters of the Lower Godavari sub-basin.

(VII) G-11 *Indravati sub-basin* :

(A) (i) Subject to the provisions of the Inter-State Agreement, dated 19-12-1975 affirming the bilateral Agreement dated 9-12-1975 between the States of Orissa and Madhya Pradesh, and any equitable allocation that may be made to the State of Orissa by the Godavari Water Disputes Tribunal in the Indravati sub-basin, the State of Madhya Pradesh upto the Bhopalapatnam Hydro-electric project Lat. 19°-03'-45" N and Long. 80°-19'-05" E across the Indravati river (a joint project between the States of Madhya Pradesh and Maharashtra) can use 273 TMC for its various existing, under construction and proposed schemes/projects. This quantum includes the share of evaporation loss of the State of Madhya Pradesh at the Bhopalapatnam I Hydro-electric Project.

(ii) The State of Andhra Pradesh agrees that the States of Maharashtra and Madhya Pradesh may introduce Pumped Storage Scheme in their joint Bhopalapatnam Hydro-electric Project on the Indravati at any stage, making use of the Inchampalli reservoir on the downstream. No cost of Inchampalli storage will be debitable to Bhopalapatnam Hydro-electric Project on this account. However, there will be no obligation to maintain any specific level at any time at the Inchampalli reservoir to suit the above Pumped Storage Scheme.

(B) The State of Madhya Pradesh, in addition to the use as agreed to in clause (VII) (A) (i) above case use all the waters upto the following project sites on the tributaries joining the Indravati downstream of the Bhopalapatnam I Hydro-electric project site.

(i) Chintavagu Project site on Chintavagu near village Pavrel.

Lat. 18°-41'-25" N and Long. 80°-40'-47" E.

(ii) Jallavagu Project site on Jallavague near village Chillamarka.

Lat. 18°-56'-34" N and Long. 80°-21'-34" E.

(iii) Kothapalli Integrated Project across tributary of Chintavagu.

(a) Kothapalli Project site Lat. 18°-40'-54" N and Long. 80°-34'-54" E.

(b) Minur Project site Lat. 18°-45'-24" N and Long. 80°-28'-13" E.

(C) The State of Madhya Pradesh can use an additional quantity of 19 TMC downstream of the project sites as specified in clauses (VII) (A) (i) and (VII) (B) above for its existing, under construction and proposed projects/schemes each using not more than 1.5 TMC annually.

(D) The State of Maharashtra can use 34 TMC for its existing, under construction and proposed project/projects upstream of Bhopalapatnam I Hydro-electric Project. This includes the share of evaporation losses of Maharashtra at the Bhopalapatnam I Hydro-electric Project.

(E) The State of Maharashtra can use an additional quantum of 7 TMC downstream of the Bhopalapatnam I Hydro-electric Project for its existing, under construction and proposed projects/schemes each using not more than 1.5 TMC annually.

(F) The above uses by the states of Madhya Pradesh and Maharashtra would be without prejudice to the Agreements concerning Kotri-Nibra Hydel Project, Bandia Hydel Project and Nagur II Hydel Project entered into between the two States and as ratified by both the Governments.

(G) The State of Andhra Pradesh can use the remaining waters of the Indravati sub-basin Downstream of the Bhopalapatnam I Hydro-electric Project site of the States of Madhya Pradesh and Maharashtra.

(H) The States of Madhya Pradesh and Maharashtra agree that regulated releases after generation of power from Bhopalapatnam I Hydro-electric Project, a joint project of the two States as per the finalised scope would be available for use lower down for the Inchampalli project another joint project of all the three States, viz., Madhya Pradesh, Andhra Pradesh and Maharashtra.

(VIII) G-12 *Sabari sub-basin* :

(A) Subject to the provisions of the Inter-State Agreement dated 19-12-1975 affirming the bilateral Agreement dated 9-12-1975 between the States of Orissa and Madhya Pradesh, and any equitable allocation that may be made to the State of Orissa by the Godavari Water Disputes Tribunal in the Sabari sub-basin, the allocation to the States of Madhya Pradesh and Andhra Pradesh shall be as agreed to hereunder. Downstream of the point where the Sabari forms the common boundary between the States of Orissa and Madhya Pradesh (at near about Lat. 18°-55'-04"N and Long. 82°-14'-53"E), the State of Madhya Pradesh can use all the waters upto the following project sites on the tributaries of river Sabari as indicated below:

(a) Baru Nadi Integrated Project.

(i) Barunadi site across Baru river near village Tankavada.

Lat. 18°-45'-33" N and Long. 81°-48'-50" E.

(ii) Bhimsen Storage site across Bhimsen near village Bodavada.

Lat. 18°-45'-0" N and Long. 81°-55'-46" E.

(iii) Kudripal Pickup weir site across Baru river near village Kudripal.

Lat. 18°-40'-42" N and Long. 81°-51'-30" E.

(b) Mupari Project site across Mupari (Jamair) river near village Jamair.

Lat. 18°-42'-30" N and Long. 81°-45'-0" E.

(c) Gorali Nadi Project.

(i) Gorali dam site across Gorali Nadi near village Kanjipani.

Lat. 18°-32'-50" N and Long. 81°-40'-55" E.

(ii) Andumpal dam site across Pulnadi near village Andumpal.

Lat. 18°-34'-43" N and Long. 81°-42'-04" E.

(d) Sailervagu Integrated Project.

(i) Mankapal dam site across Malengar river near village Mankapal.

Lat. 18°-32'-00" N and Long. 81°-29'-26" E.

(ii) Sailervagu dam site across Sailervagu near village Paila.

Lat. 18°-26'-12" N and Long. 81°-31'-38" E.

(e) Ordeltong Integrated Project.

(i) Ordeltong dam site across tributary of Tinarayavagu near village Ordeltong.

Lat. 18°-13'-24" N and Long. 81°-24'-06" E.

(ii) Tinarayavagu dam site across Tinarayavagu near village Korrapal.

Lat. 18°-11'-0" N and Long. 81°-18'-56" E.

(f) Janavagu Integrated Project.

(i) Janavagu dam site across Janavagu near village Gorkha.

Lat. 17°-57'-24" N and Long. 81°-20'-15" E.

(ii) Elemmadugu vagu dam site across Elemmadugu vagu near Jarput village.

Lat. 18°-03'-42" N and Long. 81°-18'-09" E.

(B) The State of Madhya Pradesh can use an additional quantity of 18 TMC downstream of the project sites as specified in clause (VIII) (A) above, for its existing, under construction and proposed schemes each using not more than 1.5 TMC annually.

(C) The quantum of water to meet the evaporation losses of the power projects across the Sabari, of the State of Madhya Pradesh will be in addition to the quantum as specified in clauses (VIII) (A) and (B) above and this quantum would however be limited to 10 TMC while excess if any, shall be borne by the State of Madhya Pradesh out of its quantum already specified in clauses (VIII) (A) & (B) above.

(D) The State of Andhra Pradesh can use the remaining waters of the Sabari sub-basin for the existing, under construction and proposed schemes/projects after the uses, by the State of Madhya Pradesh for projects/schemes as specified in clauses (VIII) (A) to (VIII) (C) above and the allocation that may be made by the Godavari Water Disputes Tribunal to the State of Orissa in this sub-basin.

(E) The State of Madhya Pradesh agrees subject to the State of Orissa agreeing for the construction of Polavaram Project of the State of Andhra Pradesh so that the maximum submergence in Madhya Pradesh territory at Konta does not exceed RL +150 ft. due to all effects including back water effect. The Polavaram Project shall be designed for the maximum probable flood in consultation with the Central Water Commission so as not to exceed the limit of submergence mentioned above. For the submerged lands and properties both of the Government as well as private parties, the cost of compensation and rehabilitation on the basis of the norms in vogue in the Country at the time of the construction of the project shall be charged to the project. Model villages with facilities/amenities etc., shall be constructed at the cost of the project before the submergence actually takes place. The sovereignty over the land shall continue to vest with the respective States. The State of Madhya Pradesh can lift 1.5 TMC from the Polavaram Lake for its use within its territory without bearing any cost of storage and this use shall be out of the allocation agreed to for the State as in clause (VIII).

(F) The State of Madhya Pradesh can transport its forest or mineral produce through all navigational facilities/lock etc., which shall be provided by Andhra Pradesh at its own cost at Polavaram. These facilities will be available to the state of Madhya Pradesh at the Polavaram Project, at the rates applicable to the State of Andhra Pradesh for their own cargo at Polavaram. The state of Madhya Pradesh can develop and exploit pisciculture and boating facilities in its own territory.

#### (IX) GENERAL CLAUSES :

(1) (a) The States of Madhya Pradesh and Maharashtra may vary the location of sites of projects using more than 1.5 TMC annually which have been specifically mentioned in the above paragraphs by informing the lower State/States. If as a result of shifting or alteration in the case of any such specified sites upto which a State has been permitted to use all the water more or less catchment area than what is indicated in above clauses is intercepted, a corresponding reduction/increase will be made in

the catchment area of other specified sites, so that the total catchment area allowed for each State for interception of all the water is not exceeded.

(b) It is also agreed that with respect to projects as specified in clauses (III) (1) (B), (V) (1) (B) and (H), (V) (2) (B), (VI) (2) (B), (VII) (C), (VII) (E), (VIII) (A) and (VIII) (B) and if there is a marginal increase of utilisation over 1.5 TMC but not exceeding 2 TMC for each project, such increase may be permitted by mutual consultation between the State concerned and the lower Riparian State/States, provided that the total utilisation as specified in each of the said clauses is not exceeded by the concerned State.

(2) In the above Agreement, wherever specified quantities of the water has been mentioned as permitted use by any State it is agreed that the use shall be measured in the manner indicated below:

| <i>Use</i>  | <i>Measurement</i>   |
|---|--|
| (1)   | (2)  |
| (i) Irrigation use  | 100 per cent of the quantity diverted or lifted from the river or any of the tributaries or from any reservoir, storage or canal and 100 per cent of evaporation losses in these storages. |
| (ii) Power use  | 100 per cent of evaporation losses in the storage.   |
| (iii) Domestic and municipal water supply within the basin. | By 20 per cent of the quantity of water diverted or lifted from the river or any of its tributaries or from any reservoir, storage or canal.   |
| (iv) Industrial use within the basin.                       | 2.5 per cent of the quantity of water diverted or lifted from the river or any of its tributaries or from any reservoir, storage or canal.   |
| (v) All uses outside the basin                              | 100 per cent of the quantity diverted or lifted from the river or any of the tributaries or from any reservoir, storage or canal.  |

(3) It is agreed that in using the waters permitted to each State in the above Agreement no State can construct projects other than those already specifically agreed to, submerging the territory of another State/States, without the prior consent of that State for such submergence.

(4) It is agreed that all the States can make use of underground water within their respective State territories in the Godavari basin and such use shall not be reckoned as use of the water of the river Godavari.

(5) The sub-basins referred to in the Agreement are according to the division of Godavari Basin into sub-basins made in the Report of the Krishna Godavari Commission in Chapter III paragraph 4.27 at page 28.

(6) Use shall include any use, made by any State of the waters of the river Godavari and its tributaries for domestic, municipal, irrigation, industrial, production of power, navigation, pisciculture, wild life protection, recreation purposes and evaporation losses from the storages created for the above purposes.



(7) All the levels mentioned in the clauses above are with reference to the G.T.S. levels.

(8) This agreement is subject to ratification by the respective State Governments of Maharashtra, Madhya Pradesh and Andhra Pradesh.

Dated the 7<sup>th</sup> August, 1978.

(Sd/-)  
(V.R. DEUSKAR)  
*Secretary,*  
*Irrigation Department*  
*Government of Maharashtra.*

(Sd/-)  
(R.K.TIKKU)  
*Secretary,*  
*Irrigation & Power Department,*  
*Government of Madhya Pradesh.*

(Sd/-)  
(M. GOPALA KRISHNAN)  
*Secretary, Department of Irrigation & Power,*  
*Government of Andhra Pradesh.*

**SUMMARY RECORD OF THE DISCUSSIONS<sup>52</sup> OF THE MEETING HELD BETWEEN THE  
CHIEF MINISTERS OF KARNATAKA AND ANDHRA PRADESH AT BANGALORE ON 4<sup>th</sup>  
AUGUST, 1978.**

The following were present :

*Karnataka :*

1. Sri D.Devaraj Urs, Chief Minister.
2. Sri N. Narasimha Rau, Chief Secretary.
3. Sri J.C.Lynn, Secretary to Chief Minister.
4. Sri B.C.Angadi, Special Secretary, P.W. & E. dept.,(Irrigation).
5. Sri S.R.S. Sastry, Chief Engineer, W.R.D.O.
6. Sri B. Subramanyam, Chief Engineer, Bangalore Water Supply & Sewerage Board.

*Andhra Pradesh :*

1. Dr. M. Chenna Reddy, Chief Minister.
2. Sri G.V.Sudhakara Rao, Irrigation Minister.
3. Sri M.Gopalakrishnan, Secretary, Irrigation & Power.
4. Sri B. Gopalakrishna Murthy, Adviser, Irrigation & Power.
5. Sri K. R. Chudamani, Adviser, Irrigation & Power.
6. Sri M.Satyanarayana Singh, Special Officer, Water Resources.

After discussion, the following points were agreed to :

Andhra Pradesh and Karnataka agree that Karnataka would, in addition to its existing utilisation above the proposed Singur project in the Manjra Sub-basin and the utilisation for Karanja and Chulkinala projects, as per the agreement of 17.9.1975 read with the agreement of 19.12.1975 utilise one TMC of water more for lift irrigation from the Manjra river.

2. In order to utilise this quantity or any other additional quantity that may be agreed to later, on the Manjra, Karnataka may put up such pondage as may be necessary and as may be agreed to between Andhra Pradesh and Karnataka to utilise one TMC or such additional agreed quantities as may become available for this purpose.

3. Andhra Pradesh and Karnataka agree that Karnataka may utilise 2.5 (two point five) TMC of water in the Manjra sub-basin in its territory in the catchment below Nizamsagaar project.

4. Andhra Pradesh and Karnataka agree that Andhra Pradesh may go ahead with the construction of the Singur Project, as proposed by Andhra Pradesh, with the maximum capacity of 30 TMC of gross storage with FRL/MWL of plus 523.6 meters (1,717.41 ft.) above MSL.

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<sup>52</sup> All agreement under Annexure-C are part of GWDT decision.

5. Karnataka will take necessary action to acquire any land or structure that may be submerged and/or affected under Singur Project and Andhra Pradesh agrees to bear the cost of acquisition, the cost of rehabilitation of the displaced families and the cost of construction of bridges and roads that may become necessary. Such acquisition and rehabilitation shall be as per the norms prevailing in Karnataka at the time of acquisition/rehabilitation. Karnataka also agrees to the submergence of the river bed and its stream-beds.

6. In the event of Andhra Pradesh developing hydroelectric power at Singur project, Karnataka and Andhra Pradesh agree to share the cost and benefits of such power in such proportion as may be agreed upon.

7. (a) Subject to the clearance of Polavaram Project by the Central Water Commission for FRL/MWL plus 150 ft. the State of Andhra Pradesh agrees that a quantity of 80 TMC at 75 per cent dependability of Godavari waters from Polavaram project can be diverted into Krishna river above Vijayawada Anicut displacing the discharges from Nagarjunasagar Project for Krishna Delta, thus enabling the use of the said 80 TMC for projects upstream of Nagarjunasagar.

(b) The States of Andhra Pradesh and Karnataka agree that the said quantity of 80 TMC shall be shared in the proportion of Andhra Pradesh 45 TMC, Karnataka and Maharashtra together 35 TMC.

(c) Andhra Pradesh agrees to submit the Polavaram project report to Central Water Commission within three months of reaching an over-all agreement on Godavari waters among the five party States.

(d) Andhra Pradesh agrees to bear the cost of diversion fully.

(e) Maharashtra and Karnataka are at liberty to utilise their share of 35 TMC mentioned in sub-para 7(b) above from the date of clearance of the Polavaram project by Central Water Commission with FRL/MWL of plus 150 ft., irrespective of the actual diversion taking place.

(f) It is also agreed that if the diversion at 75 per cent dependability as stated in clause (a) above exceeds the said quantity of 80 TMC due to diversion of Godavari waters from the proposed Polavaram Project into Krishna river, further diminishing the releases from Nagarjunasagar Project, such excess quantity shall also be shared between the three States in the same proportion as in sub-clause (b) above.

Mr.S.Chaudhuri,  
Counsel  
for  
the State of Karnataka.

Mr.P.Ramachandra Reddy,  
Advocate General  
for the State of  
Andhra Pradesh.

**SUMMARY RECORD OF THE DISCUSSIONS OF THE MEETING HELD BETWEEN THE  
CHIEF MINISTERS OF KARNATAKA AND ANDHRA PRADESH AT BANGALORE ON 4<sup>th</sup>  
AUGUST, 1978.**

The following were present :

*Karnataka :*

1. Sri D. Devaraj Urs, Chief Minister.
2. Sri N. Narasimha Rau, Chief Secretary.
3. Sri J. C. Lynn, Secretary to Chief Minister.
4. Sri B.C. Angadi, Special Secretary, P.W.& E.dept.,(Irrigation).
5. Sri S.R.S. Sastry, Chief Engineer, W.R.D.O.
6. Sri B. Subramanyam, Chief Engineer, Bangalore Water Supply & Sewerage Board.

*Andhra Pradesh :*

1. Dr. M. Chenna Reddy, Chief Minister.
2. Sri G.V.Sudhakara Rao, Irrigation Minister.
3. Sri M. Gopalakrishnan, Secretary, Irrigation & Power.
4. Sri B. Gopalakrishna Murthy, Adviser, Irrigation & Power.
5. Sri K.R. Chudamani, Adviser, Irrigation & Power.
6. Sri M. Satyanarayana Singh, Special Officer, Water Resources.

After discussion, the following points were agreed to:

Karnataka and Andhra Pradesh agree that Andhra Pradesh would go ahead with the proposed Jurala Project with FRL/MWL of plus 1045 feet above MSL in Krishna basin.

2. Karnataka will take necessary action to acquire any lands or structures that may be submerged and/or affected under Jurala Project and Andhra Pradesh agrees to bear the cost of acquisition, the cost of rehabilitation of the displaced families and the cost of construction of bridges and roads and cost of protection or shifting of temples and other religious shrines that may become necessary as decided by Karnataka. Such acquisition and rehabilitation shall be as per the norms prevailing in Karnataka at the time of acquisition/rehabilitation. Karnataka also agrees to the submergence of river bed and stream beds.

3. Karnataka and Andhra Pradesh also agree that in the event of Andhra Pradesh generating power from this project, the cost and benefits of hydro-power will be shared equally between the two states. The question of what would constitute the cost of hydro-power was not discussed and will be agreed upon separately.

Mr.S.Chaudhuri,  
Counsel  
for  
the State of Karnataka.

Mr.P.Ramachandra Reddy,  
Advocate General  
for the State of  
Andhra Pradesh.

**PROCEEDINGS<sup>53</sup> OF THE MEETING BETWEEN THE CHIEF MINISTERS OF ANDHRA  
PRADESH AND ORISSA AT HYDERABAD ON THE 15<sup>th</sup> OF DECEMBER, 1978.**

THE FOLLOWING WERE PRESENT :

*Andhra Pradesh :*

1. Dr. M. Chenna Reddy, Chief Minister.
2. Sri G. Rajaram, Minister for Finance & Power.
3. Sri G.V. Sudhakar Rao, Minister for Major Irrigation & Commercial Taxes.
4. Sri I.J. Naidu, I.A.S., Chief Secretary.
5. Sri S. R. Rama Murthy, I.A.S., Secretary to Chief Minister.
6. Sri P. Ramachandra Reddy, Advocate General.
7. Sri C.N. Shastry, I.A.S., Secretary, Irrigation & Power.
8. Sri M. Gopalakrishnan, I.A.S., Secretary, Primary & Secondary Education.
9. Dr. N. Tata Rao, Chairman, A.P.S.E.B.
10. Sri Satyanarayan Singh, Special Officer, Water Resources
11. Sri D.V. Sastry, Advocate.

*Orissa :*

1. Sri Nilamani Routroy, Chief Minister.
2. Sri Pratap Chandra Mohanty, Minister for Revenue & Power.
3. Sri Prahlad Mallik, Minister for Irrigation.
4. Sri B.M. Patnaik, Advocate General.
5. Sri B. Ramadorai, I.A.S., Secretary, Irrigation & Power.
6. Sri A.K. Biswal, Secretary to Chief Minister.
7. Sri S.C. Tripathy, Chief Engineer, Irrigation
8. Sri B. Mishra, Chief Engineer, Electricity,
9. Sri M. L. Lath, Executive Engineer, Irrigation.

After full discussions, the following agreement was reached :

*I. G-11 Indravati Sub-basin :*

The State of Orissa can utilise its share of water in G-11 Indravati sub-basin in terms of the Inter-State agreement dated 19.12.1975 affirming the bilateral agreement dated 9.12.1975 between the States of Orissa and Madhya Pradesh.

*II. G-12 Sabari sub-basin :*

(A) The State of Orissa can use all the water of the river Sabari (Kolab) upto the point (at near about Lat. 18°-55'-04" N and Long. 82°-14'-53" E) where the river Sabari forms the common boundary between the State of Orissa and the State of Madhya Pradesh in terms of the Inter-State Agreement dated 9.12.1975, Clause V.

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<sup>53</sup> This proceedings is part of decision of GWDT.

(B) The States of Orissa and Andhra Pradesh agree for utilisation of all waters upto the following project sites on the tributaries and sub-tributaries of the river Sabari (Kolab) by the State of Orissa.

(i) Govindapalle Project on :-

(a) Dharmgedda nalla site near Lingiyaput Village. Lat.  $18^{\circ}-36'-07''$  N and Long.  $82^{\circ}-16'-11''$  E.

(b) Jamnadi site near Govindpalli village. Lat.  $18^{\circ}-36'-13''$  N and Long.  $82^{\circ}-16'-48''$  E.

(c) Garianadi site near Doraguda village. Lat.  $18^{\circ}-34'-03''$  N, and Long.  $82^{\circ}-17'-18''$  E.

(ii) Satiguda Project site on the tributary of Potteruvagu. Lat.  $18^{\circ}-18'-57''$  N and Long  $81^{\circ}-56'-24''$  E.

(iii) Parasanappalle project site on the tributary of Sabari near village Parsanapalli. Lat.  $18^{\circ}-16'-44''$  N and Long  $81^{\circ}-36'-44''$  E,

(iv) Potteru project site on Potteruvagu near Surlikunta village. Lat.  $18^{\circ}-12'-30''$  N and Long  $82^{\circ}-01'-30''$  E.

(C) The State of Orissa, in addition to the uses as specified in clauses II (A) and II (B) above, can use 40 TMC, for its existing, under construction and proposed project/schemes each using not more than 1.5 TMC, annually.

(D) Downstream of the point where the Sabari forms the common boundary between the States of Orissa and Madhya Pradesh (at near about Lat.  $18^{\circ}-55'-04''$  N and Long  $82^{\circ}-14'-53''$  E) and upto the confluence of the Sileru and the Sabari, the State of Orissa, can use not more than 27 TMC, for irrigation by withdrawals from the main river for its existing, under construction and proposed schemes/projects.

(E) The quantum of water to meet the evaporation losses of project under clause II D and power projects across the Sabari by the States of Madhya Pradesh and Orissa in terms of clause V of bilateral agreement dated 9.12.1975 between Orissa and Madhya Pradesh will be in addition to the quantum specified in clauses II A, B, C, & D above and shall be shared in such proportion as the said two States may agree. However, the share of Orissa in excess of 10 TMC, in the evaporation losses mentioned above shall be met from its quantum specified in clauses II A, B, C & D above.

(F) The States of Orissa and Andhra Pradesh shall utilise the Sileru river waters in terms of :

(a) 1946 Agreement between the Government of Madras and Orissa regarding development of Hydroelectric power at Dudma falls on the Machkund river.

(b) Final agreement between the Governments of Orissa and Andhra Pradesh in relation to the use of the waters of the Sileru river dated the 4<sup>th</sup> September, 1962.

(c) Any other subsequent agreement/agreements that the two States of Orissa and Andhra Pradesh may mutually conclude in future.

(d) All use of water for beneficial purpose by the States of Orissa and Andhra Pradesh for their existing, under construction and proposed schemes / projects upstream of Machkund Project the total utilisation under which shall not exceed 2 TMC by each state will be charged to their respective shares at Machkund correspondingly reducing their respective share of power at Machkund & Dudma falls. Similarly, use under Schemes / Projects which shall not exceed 2 TMC by each State downstream of Machkund project and upstream of Balimela Dam, will be charged to their respective shares at Balimela dam project reducing their respective shares of water by the total quantity used

both above Machkund project and between Machkund and Balimela project. All such use should be intimated to the other Government.

(e) Notwithstanding any restriction imposed under the past agreements, the State of Orissa will be permitted to utilise not exceeding 2 TMC of Sileru water for beneficial use downstream of Balimela dam for its existing, under construction and future projects out of the yield of the catchment lying downstream of Balimela dam project. This quantity will be out of 40 TMC as specified in clause II (C) above.

(G) The State of Orissa agrees for the construction of Lower Sileru Irrigation Scheme with FRL + 235 ft. and MWL +262 ft. by the State of Andhra Pradesh, which involves some submergence in the State of Orissa. The State of Andhra Pradesh shall bear the cost of compensation for submergence of land and properties both the Government as well as private parties that may be agreed to. The provision of rehabilitation of the oustees will be made as per the norms in vogue in the State of Orissa at the time of construction of the project.

(H) The State of Andhra Pradesh can, subject to agreement dated 7-8-1978, use the remaining waters in the Sabari sub-basin excluding Sileru river vide clause F above for the existing, under construction and proposed schemes/projects after the uses by the State of Orissa for projects/schemes as specified in Clauses I & II A to E above.

(I) The States of Orissa and Andhra Pradesh agree for the construction of Polavaram Project of the State of Andhra Pradesh, so that the maximum submersion in the State of Orissa territory at Motu/Konta does not exceed RL +150 ft, due to all effects including backwater effect. The Polavaram Project shall be designed for the maximum probable flood in consultation with the Central water Commission so as not to exceed the limit of Submergence mentioned above. For the submerged lands and properties both the Government as well as private parties, the cost of compensation and rehabilitation on the basis of the norms in vogue in the State of Orissa at the time of the construction of the projects shall be charged to the project. Model villages with facilities/amenities etc., shall be constructed at the cost of the project before the submergence actually takes place.

The sovereignty over the land shall continue to vest with the respective States. The State of Orissa can lift 5 TMC from the Polavaram lake, without bearing any cost of the storage for its use in their territory and this use shall be reckoned against the allocation made to that State as specified in clause II above. The State of Orissa can transport their forest or mineral produce through all navigational facilities/lock etc.; which shall be provided, by the State of Andhra Pradesh at its own cost at Polavaram. These facilities will be available to the State of Orissa at the Polavaram project at the rates applicable to the State of Andhra Pradesh for their own cargo at Polavaram. The State of Orissa can develop and exploit pisciculture and boating facilities in their own territory. The States are agreeable to the level of RL + 150 feet for Polavaram storage as defined above only on the express conditions that any of the provisions, facilities and liberties given for utilisation of waters of the Godavari and its tributaries, to each other in this Agreement herein above or here under are not at all disturbed.

### *III. General clauses :*

1. (a) The State of Orissa may vary the location of sites of projects using more than 1.5 TMC, annually which have been specifically mentioned in the above clauses by informing the lower State/States. If as a result of shifting or alteration in the case of any such specified sites upto which a State has been

permitted to use all the water, more or less catchment area than what is indicated in the above clauses is intercepted, a corresponding reduction/increase will be made in the catchment area of other specified sites, so that the total catchment area allowed for each State for interception of all the water is not exceeded.

(b) It is also agreed that with respect to projects as specified in clauses I & II above if there is a marginal increase of utilisation over 1.5 TMC, but not exceeding 2 TMC, for each project, such increase may be permitted by mutual consultation between the States concerned and the lower Riparian State/States, provided that the total utilisation as specified in each of the said clauses is not exceeded by the concerned State.

(2) In the above agreement, wherever specified quantities of the water has been mentioned as permitted use by any States it is agreed the use shall be measured in the manner indicated below :

| <i>Use</i>  | <i>Measurement</i>   |
|---|--|
| (1)   | (2)  |
| (i) Irrigation use  | 100 per cent of the quantity diverted or lifted from the river or any of the tributaries or from any reservoir, storage or canal and 100 per cent of evaporation losses in these storages. |
| (ii) Power use  | 100 per cent of evaporation losses in the storage.   |
| (iii) Domestic and municipal water supply within the basin. | By 20 per cent of the quantity of water diverted or lifted from the river or any of its tributaries or from any reservoir, storage or canal.   |
| (iv) Industrial use within the basin.                       | By 2.5 per cent of the quantity of water diverted or lifted from the River or any of its tributaries or from any reservoir, storage or canal.  |
| (v) All uses outside the basin                              | 100 per cent of the quantity diverted or lifted from the river or any of the tributaries or from any reservoir, storage or canal.  |

(3) It is agreed that in using the waters permitted to each State in the above agreement no State can construct a project other than those already specifically agreed to submerging the territory of another State/States, without prior consent and acceptance by mutual discussions by that State for such submergence.

(4) It is agreed that all the States can make use of underground water within their respective State territories in the Godavari basin and such use shall not be reckoned as use of the water of the river Godavari.

(5) The sub-basins referred to in this agreement are according to the division of Godavari basin into sub-basins made in the report of the Krishna Godavari Commission in Chapter-III paragraph 4.27 at page 28.



(6) Use shall include any use, made by any State of waters of the river Godavari and its tributaries or domestic, municipal, irrigation, industrial, production of power, navigation, pisciculture, wild life protection, recreation purposes and evaporation losses from the storages created for the above purposes.

(7) All the levels mentioned in the clauses above are with reference to G.T.S. levels.

Sd/-  
Dr. M. CHANNA REDDY,  
*Chief Minister,*  
*Andhra Pradesh.*

Sd/-  
NILAMANI ROUTROY,  
*Chief Minister,*  
*Orissa.*

ANNEXURE I

B.C.ANGADI,  
Special Secretary To Government,  
Irrigation Department

VIDHANSHOUDHA, BANGALORE  
Dated 29<sup>th</sup> January, 1979.

DO No. PWD 25 BRA 78

DEAR SHRI DEUSKAR,

Sub:- Agreement between Maharashtra and Karnataka regarding Godavari waters distribution.

In confirmation of our telephonic talks during the last week, I have to state that we agree that :

(a) 35 TMC of water in Krishna, which is the share of Karnataka and Maharashtra out of 80 TMC of Godavari diversion by the State of Andhra Pradesh from Polavaram Barrage, shall be shared between Karnataka and Maharashtra as under :-

|             |          |
|-------------|----------|
| Karnataka   | 21 T M C |
| Maharashtra | 14 T M C |

(b) Karnataka had requested for at least 1 TMC of Manjra waters upstream of Nizamsagar from the share allocated to Maharashtra. Maharashtra has expressed its inability to spare this water. Karnataka accepts that position in the interest of arriving at an agreement.

(c) A copy of this letter with your confirmation to it may be filed before the Godavari Tribunal on 02-02-1979.

Kindly confirm the above points as agreed on telephone.

Yours sincerely,  
Sd. /-  
29-1-1979  
(B.C.ANGADI)

SHRI V.R. DEUSKAR,  
Secretary to Government,  
Irrigation Department,  
Government of Maharashtra,  
Mantralaya,  
Bombay - 400 032.

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<sup>54</sup> Annexure E is part of decision of GWDT.

## ANNEXURE II

V.R.DEUSKAR,  
Secretary to Government.

D.O. No. I S W 5179 K G  
Irrigation Department,  
Mantralaya, Bombay-400 032  
Camp : New Delhi  
Dated the 30<sup>th</sup> January, 1979.

Sub:- Agreement between Maharashtra and Karnataka regarding Godavari waters distribution.

Ref:- Your D.O. Letter No. PWD 25 BRA 78 dated 29<sup>th</sup> January, 1979.

Dear Shri Angadi,

In confirmation of our telephonic talk during the last week and with reference to your above D.O. letter, the points as agreed between the two States mentioned in your letter are hereby confirmed subject to the following understanding :

The present ratio of sharing of 35 TMC viz. 14 to Maharashtra and 21 to Karnataka shall not be applicable to any additional water that would become available by virtue of Andhra Pradesh diverting water in excess of 80 TMC

We may authorise our Counsel before Godavari Water Disputes Tribunal to draw up an agreement in a proper form in terms of our understanding reached between the two States and file it before the Godavari Tribunal.

Yours sincerely,  
Sd./-  
(V.R.DEUSKAR)

SHRI. B. C. ANGADI,  
Special Secretary,  
Irrigation Department,  
Government of Karnataka,  
Bangalore.

### ANNEXURE III

B.C.ANGADI,  
Special Secretary to Government,  
Irrigation Department,

VIDHANA SOUDHA,  
BANGALORE  
Dated 31<sup>st</sup> January, 1979.

D.O. No. PWD 25 BRA 78

Dear Shri Deuskar,

*Sub:-* Agreement between Maharashtra and Karnataka regarding Godavari waters distribution.

I received your D.O. letter No. ISW 5179 - KG dated 30.1.1979 through telex, confirming our telephonic talk and points agreed between the two States as mentioned in my D.O. letter No. PWD 25 BRA 78, dated 29<sup>th</sup> January, 1979.

2. I further agree that the following condition mentioned in your above letter, Namely, that ---

" The present ratio of sharing 35 TMC viz., 14 to Maharashtra and 21 to Karnataka shall not be applicable to any additional water that would become available, by virtue of Andhra Pradesh diverting water in excess of 80 TMC"

should form part of the agreement which should be drawn up and filed before the Tribunal.

Yours sincerely,

Sd./-  
(B.C.ANGADI)

SHRI V. R. DEUSKAR,  
Secretary to Government,  
Irrigation Department,  
Government of Maharashtra,  
Mantralaya,  
Bombay - 400 032.

## AGREEMENT<sup>55</sup> ENTERED INTO BETWEEN THE STATES OF ORISSA AND MADHYA PRADESH.

After full discussions, the following agreement was reached at Bhopal on 11<sup>th</sup> July, 1979.

### *G-11 Indravati Sub-basin:*

#### *1. ORISSA*

(a). The State of Orissa can use all the waters upto Upper Indravati Project site comprising:

- (i) Indravati dam site (Lat. 19° –16’N & Long. 82° –50’E.)
- (ii) Podaga dam site (Lat. 19° –14’N and Long. 82° –49’E).
- (iii) Kapur dam site (Lat. 19° –06’N and Long. 82° –47’E)
- (iv) Muran dam site (Lat. 19° –06’N and Long. 82° –46’E).

(b). Out of the balance flows available below the Upper Indravati Project within its territory, the State of Orissa shall ensure forty five (45) TMC of water to flow down at the Orissa-Madhya Pradesh border in the Indravati sub-basin. In the years, when the diversion of water outside the Godavari basin at the Upper Indravati Project is less than eighty five (85) TMC (exclusive of evaporation losses) this quantum of forty five (45) TMC at the Orissa-Madhya Pradesh border in the Indravati sub-basin will be reduced in the same proportion as the reduction in the quantum of eighty five (85) TMC. The State of Orissa can use all the balance water thus left within its territory for its existing under construction, and proposed projects/schemes.

(c). (i). The States of Orissa and Madhya Pradesh agree to measure this quantum of forty five (45) TMC at Jagdalpur gauge site across Indravati river which is maintained at present by the Central Water Commission, subject to adjustment as mentioned in sub-paragraph (c) (ii).

(ii). The catchment area of the State of Orissa contributing to the flow in Indravati river below Jagdalpur gauge site is about two hundred and thirty eight (238) square miles, while the catchment area of the State of Madhya Pradesh upto the gauge site is about one hundred and ninety eight (198) square miles. The seventy five (75) per cent dependable yield from this area of forty (238 minus 198 equal to 40) square miles may be taken as two point eight (2.8) TMC. This quantum of two point eight (2.8) TMC will be added to the observed flow at Jagdalpur gauge site for estimating the flows available at the Orissa-Madhya Pradesh border specified in sub- paragraph 1(b). The quantum of two point eight (2.8) TMC, will be reduced proportionately in the lean years in the same proportion to the reduction of seventy five (75) per cent dependable yield of eighty nine point five (89.5) TMC at Upper Indravati Project site as cleared by Planning Commission.

(iii). At any time if the Central Water Commission closes Jagdalpur gauge site, the two States shall maintain the gauge site jointly or any other site(s) as may be mutually agreed upon for the purpose.

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<sup>55</sup> This Agreement is part of decision of GWDT.

## 2 Madhya Pradesh

(a). The State of Madhya Pradesh can use two hundred and seventy three (273) TMC of water for its various existing, under construction and proposed projects/schemes, subject to the agreed uses in paragraph (1) upto the Bhopalpatnam-I Hydro-electric project site (Lat.  $19^{\circ}-03'-45''$ N and Long.  $80^{\circ}-19'-05''$ E) across Indravati river a joint project between the States of Madhya Pradesh and Maharashtra. This quantum includes the share of evaporation loss of the State of Madhya Pradesh at the Bhopalpatnam-I reservoir.

(b). The State of Madhya Pradesh in addition to the uses as agreed to in paragraph 2(a) can use all the waters upto the following project sites on the tributaries joining the Indravati downstream of Bhopalpatnam-I Hydro –electric project site:

- (i) Chintavagu Project site on Chintavagu near village Pavrel.  
Lat.  $18^{\circ}-41'-25''$  N Long.  $80^{\circ}-40'-47''$  E.
- (ii) Jallavagu Project site on Jallavagu. near village Chillamarka.  
Lat.  $18^{\circ}-56'-34''$  N; Long.  $80^{\circ}-21'-34''$  E
- (iii) Kothapalli Integrated Project across tributary of Chintavagu.
  - (a) Kothapalli Project site:  
Lat.  $18^{\circ}-40'-54''$  N and Long.  $80^{\circ}-34'-54''$  E
  - (b) Minur Project site:  
Lat.  $18^{\circ}-45'-24''$  N; and Long.  $80^{\circ}-28'-13''$  E.

(c) The State of Madhya Pradesh can use an additional quantity of nineteen (19) TMC of water downstream of the project sites specified in paragraphs 2 (a) and 2 (b) for its existing, under construction and proposed projects/schemes each using not more than one point five (1.5) TMC annually.

## G-12 Sabari sub-basin.

### 3. Orissa

(a) The State of Orissa can use all the waters of Sabari (Kolab) river upto a point near about Lat.  $18^{\circ}-55'-04''$  N and Long.  $82^{\circ}-14'-53''$ E where Sabari river forms the common boundary between the States of Orissa and Madhya Pradesh.

(b) In addition to the above, the State of Orissa can use all the waters upto the following project sites on the tributaries of Sabari (Kolab) river :

- (i) Govindapalle Project on :-
  - (a) Dharmgedda nalla site near Lingiyaput Village.  
Lat.  $18^{\circ}-36'-07''$  N and Long.  $82^{\circ}-16'-11''$  E.
  - (b) Jamnadi site near Govindpalli village.  
Lat.  $18^{\circ}-36'-13''$  N and Long.  $82^{\circ}-16'-48''$  E.
  - (c) Garianadi site near Doraguda village.  
Lat.  $18^{\circ}-34'-03''$  N and Long.  $82^{\circ}-17'-18''$  E.
- (ii) Satiguda Project site on the tributary of Potteruvagu.  
Lat.  $18^{\circ}-18'-57''$  N and Long  $81^{\circ}-56'-24''$  E.
- (iii) Parasanappalle project site on the tributary of Sabari near village Parsanapalle. Lat.  $18^{\circ}-16'-44''$  N and Long  $81^{\circ}-36'-44''$  E,

(iv) Potteru project site on Potteruvagu near Surlikunta village.

Lat.  $18^{\circ}-12'-30''$  N and Long  $82^{\circ}-01'-30''$  E.

(c) The State of Orissa can use an additional quantity of forty (40) TMC of water downstream of Projects specified in paragraphs 3 (a) and 3(b) for its existing, under construction and proposed projects/schemes each using not more than one point five (1.5) TMC annually.

(d) Downstream of the point where Sabari river forms the common boundary between the States of Orissa and Madhya Pradesh (near Lat.  $18^{\circ}-55'-04''$  N and Long.  $82^{\circ}-14'-53''$  E) and upto the confluence of Sileru and Sabari rivers, the State of Orissa in addition to the use specified in paragraphs 3 (a) to 3 (c) can use not more than twenty seven (27) TMC of water for irrigation by withdrawals from the main river for its existing, under construction and proposed projects/schemes.

(e). The State of Orissa agrees to exploit Sabari (Kolab) river waters by joint projects on the main Sabari river with the State of Madhya Pradesh from a point on Sabari (Kolab) river near about Lat.  $18^{\circ}-55'-04''$  N and Long.  $82^{\circ}-14'-53''$  E where it forms the common boundary between the two States upto the confluence with Sileru river on the basis of agreement(s) to be drawn up at appropriate time, except for use as mentioned in sub-paragraph 3 (d). At present Lower Kolab and Konta Projects are under investigation and the sites of these projects will be decided mutually by the two State Governments. The hydel power and the cost debitable to generation of such power will be shared equally between the two States in these or such other projects. The cost and benefit of irrigation, if any, from these projects will also be equitably shared between the two States.

(f). The share of evaporation losses for the projects specified in paragraph 3(e) for the State of Orissa to the extent of ten (10) TMC will be in addition to the quantum specified in paragraphs 3 (a) to 3 (d) and excess if any, will be met from the use specified in paragraphs 3 (a) to 3 (d).

(g). The use specified for the State of Orissa in paragraphs 3 (a) to 3 (d) and 3 (f) is exclusive of the use in Sileru river as per the agreement dated 15.12.1978 between the States of Orissa and Andhra Pradesh.

#### 4. *Madhya Pradesh*

The State of Madhya Pradesh can use all the waters of the tributaries of Sabari river downstream of a point where Sabari river forms the common boundary between the States of Orissa and Madhya Pradesh near about Lat.  $18^{\circ}-55'-04''$  N and Long.  $82^{\circ}-14'-53''$  E and upto the following project sites:

(a) Baru Nadi Integrated Project comprising:

(i) Barunadi site across Baru river near village Tankavada.

Lat.  $18^{\circ}-45'-33''$  N and Long.  $81^{\circ}-48'-50''$  E.

(ii) Bhimsen Storage site across Bhimsen near village Bodavada.

Lat.  $18^{\circ}-45'-0''$  N and Long.  $81^{\circ}-55'-46''$  E.

(iii) Kudripal Pickup weir site across Baru river near village Kudripal.

Lat.  $18^{\circ}-40'-42''$  N and Long.  $81^{\circ}-51'-30''$  E.

(b) Mupari Project site across Mupari (Jaimar) river near village Jaimar.

Lat.  $18^{\circ}-42'-30''$  N and Long.  $81^{\circ}-45'-0''$  E.

(c) Gorali Nadi Project comprising:

(i) Gorali dam site across Gorali Nadi near village Kanjipani.

Lat.  $18^{\circ}-32'-50''$  N and Long.  $81^{\circ}-40'-55''$  E.

- (ii) Andumpal dam site across Pulnadi near village Andumpal.  
Lat. 18°-34'-43" N and Long. 81°-42'-04" E.
- (d) Sailervagu Integrated Project comprising:
  - (i) Mankapal dam site across Malengar river near village Mankapal.  
Lat. 18°-32'-06" N and Long. 81°-29'-26" E.
  - (ii) Sailervagu dam site across Sailervagu near village Paila.  
Lat. 18°-26'-12" N and Long. 81°-31'-38" E.
- (e) Ordeltong Integrated Project comprising:
  - (i) Ordeltong dam site across tributary of Tinarayavagu near village Ordeltong.  
Lat. 18°-13'-24" N and Long. 81°-24'-06" E.
  - (ii) Tinarayavagu dam site across Tinarayavagu near village Korrapal.  
Lat. 18°-11'-0" N and Long. 81°-18'-56" E.
- (f) Janavagu Integrated Project comprising:
  - (i) Janavagu dam site across Janavagu near village Gorkha.  
Lat. 17°-57'-24" N and Long. 81°-20'-15" E.
  - (ii) Elemmadugu vagu dam site across Elemmadugu vagu near Jarput village.  
Lat. 18°-03'-42" N and Long. 81°-18'-09" E.

(b). The State of Madhya Pradesh can use an additional quantity of eighteen (18) TMC of water downstream of the project sites specified in paragraph 4 (a) for its existing, under construction and proposed projects/schemes each using not more than one point five (1.5) TMC annually.

(c) (i) The share of evaporation losses of the power projects across Sabari river specified in paragraph 3 (e) for the State of Madhya Pradesh to the extent of ten (10) TMC will be in addition to the quantum specified in paragraphs 4 (a) and 4 (b) and excess, if any, shall be borne by the State of Madhya Pradesh out of its share specified in paragraphs 4 (a) & 4 (b).

(ii) The quantum of water for the use by the State of Madhya Pradesh in the joint projects specified in paragraph 3(e) would be met with from the use specified for the State in paragraph 4(a).

(iii) Further, the quantum of water to meet the evaporation losses of the joint projects/schemes specified in the paragraph 3(e) shall be shared equally between States of Orissa and Madhya Pradesh.

B. RAMADORAI, *Secretary*,  
Irrigation & Power Department,  
Government of Orissa.

DR.ISHWAR DASS,  
*Secretary*, Irrigation & Power Department,  
Government of Madhya Pradesh.



**AGREEMENT<sup>56</sup> DATED THE 2<sup>nd</sup> APRIL, 1980 BETWEEN THE STATES OF ANDHRA PRADESH, MADHYA PRADESH AND ORISSA.**

To enable clearance of Polavaram Project, the following is agreed to :--

1. The Polavaram Project spillway shall be designed for a flood discharging capacity of 36 (thirty six) lakh cusecs at pond level of RL +140 (one hundred and forty) feet and not less than 20 (twenty) lakh cusecs at pond level of RL +130 (one hundred and thirty) feet.
2. The pond level shall not be kept higher than RL+145 (one hundred and forty five) feet in the month of June if the inflow into the Polavaram reservoir exceeds 3 (three) lakh cusecs.
3. On receipt of flood warning from the upper sites and/ or due to anticipated inflows into the reservoir requiring regulation, the pond levels shall be regulated as follows:-
  - (a) the pond level of RL+145 (one hundred and forty five) feet shall be lowered progressively as the inflows exceed 3 (three) lakh cusecs so as to restrict the pond level to RL+140 (one hundred and forty) feet for an inflow of 10 (ten) lakh cusecs.
  - (b) for inflows higher than 10 (ten) lakh cusecs the pond level shall be further lowered, so that it does not exceed RL +130 (one hundred and thirty) feet for an inflow of 20 (twenty) lakh cusecs.
  - (c) for inflows higher than 20 (twenty) lakh cusecs, all the gates shall be opened fully.
  - (d) The pond level can be built up progressively in the receding floods to RL+140 (one hundred and forty) feet if the inflow drops down to 10 (ten) lakh cusecs and to RL+145 (one hundred and forty five) feet if the inflow drops down to 3 (three) lakh cusecs or less, but during the months of July and August, the pond level shall not exceed RL+145 (one hundred and forty five) feet.
  - (e) On or after first September, whenever the inflow in the Polavaram Reservoir is 1 (one) lakh cusecs or less, the storage at Polavaram can be built up beyond RL+145 (one hundred and forty five) feet, subject to aforementioned depletions at (a) to (c) in the case of higher inflows.
4. In order to protect the lands and properties above RL+150 (one hundred and fifty) feet in the territory of the State of Orissa likely to be affected due to construction of Polavaram Project, protective embankments with adequate drainage sluices, shall be constructed and maintained at the cost of Polavaram Project. However, the State of Orissa may exercise an option at the time of construction of Polavaram Project for compensation to land and property likely to be affected above RL+150 (one hundred and fifty) feet as agreed to in the case of State of Madhya Pradesh in paragraph 5 (five) below.
5. In respect of the properties in the territory of State of Madhya Pradesh likely to be affected above RL+150 (one hundred and fifty) feet, because of the construction of the Polavaram Project, the State of Andhra Pradesh shall:-

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<sup>56</sup> This agreement is part of decision of GWDT.

(a) pay compensation towards all buildings with their appurtenant lands situated above RL+150 (one hundred and fifty) feet which will be affected due to all effects including backwater effect and rehabilitate the oustees, etc. on the same pattern as below RL+150 (one hundred and fifty) feet at the project cost;

or.

(b) construct and maintain at the cost of the State of Andhra Pradesh, the necessary protection embankments with adequate pumping arrangements and/or drainage sluices.

The said option for alternatives (a) or (b) being exercised by the State of Madhya Pradesh at the time of the construction of Polavaram Project depending upon the location of each affected site.

(c) For damages or injury to lands beyond RL+150 (one hundred and fifty) feet in the territory of the State of Madhya Pradesh, in any event, the State of Andhra Pradesh shall pay full compensation for such damage or injury as may be assessed by the District Collector of the said District of the State of Madhya Pradesh.

(d) The State of Andhra Pradesh agrees to fix permanent Bench Marks connected to G.T.S. Bench Marks in the territory of the State of Madhya Pradesh for RL +150 (One hundred and fifty) feet as well as for the backwater effect, in both cases, at an interval of approximate one kilometer all along the periphery of the Polavaram reservoir.

|  |   |  |
|--|---|--|
| (Sd.)<br>2-4-80<br>Representative for the State<br>of Andhra Pradesh.                    | (Sd.)H.V. MAHAJANI<br>2-4-80<br>Representative for the State<br>of Madhya Pradesh | (Sd.)M.L. LATH<br>2-4-80<br>Representative for the State<br>of Orissa. |
| (Sd.)<br>P. RAMACHANDRA<br>REDDY<br>Advocate General for the<br>State of Andhra Pradesh. | (Sd.)<br>M.K. RAMAMURTHY<br>Senior Counsel for the State<br>of Madhya Pradesh.    | (Sd.)<br>G.B. PATNAIK<br>Govt Advocate Orissa.                         |

**ANNEXURE “H”**

**STATEMENT<sup>57</sup> SUBMITTED BY COUNSEL FOR THE GOVERNMENT OF INDIA IN THE  
MINISTRY OF ENERGY AND IRRIGATION, (DEPARTMENT OF IRRIGATION) AND THE  
CENTRAL WATER COMMISSION.**

The Government of India in the Ministry of Energy & Irrigation (Department of Irrigation) and the Central Water Commission are willing to submit to the following order by the Tribunal:

The Polavaram Project shall be cleared by the Central Water Commission as expeditiously as possible for FRL/MWL+150 feet.

The matter of design of the dam and its operation schedule shall be left to the Central Water Commission, which they shall decide keeping in view all the Agreements between the parties, including the Agreement of 2<sup>nd</sup> April, 1980 filed today, as far as practicable.

If there is to be any change in the operation schedule as indicated in the Agreement of 2<sup>nd</sup> April, 1980 it shall be made only after consultation with the States of Andhra Pradesh, Madhya Pradesh and Orissa. The design aspects shall, however, be left entirely to the Central Water Commission.

*Sd./*  
MURLIDHAR BHANDARE,  
3-4-1980  
Counsel for the Department of Irrigation and  
Central Water Commission.

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<sup>57</sup> This statement is part of decision of GWDT.

## **SUB-BASINS OF THE GODAVARI BASIN MENTIONED IN ANNEXURES A TO H OF THIS PUBLICATION.**

G-1. UPPER GODAVARI:- This sub-basin includes the reach of the river Godavari from its source to its confluence with the Manjra. The sub-basin excludes the catchment areas of the Pravara, the Purna and the Manjra but includes that of all other tributaries which fall into the Godavari in this reach.

G-2. PRAVARA:- This sub-basin includes the entire catchment of the Pravara from the source to its confluence with the Godavari including the catchment areas of the Mula and other tributaries of the Pravara.

G-3. PURNA:- This sub-basin includes the entire catchment of the Purna and of all its tributaries.

G-4. MANJRA:- This sub-basin includes the entire catchment of the Manjra from its source to its confluence with the Godavari including the catchment areas of the Tirna, the Karanja, the Haldi, the Lendi, the Maner and other tributaries.

G-5. MIDDLE GODAVARI:- This sub-basin comprises the river Godavari from its confluence with the Manjra to its confluence with the Pranhita. The sub-basin includes the direct catchment of the Godavari in this reach as well as of its tributaries, except the Maner and the Pranhita.

G-6. MANER:- This sub-basin includes the entire catchment of the Maner from its source to its confluence with the Godavari, including all its tributaries.

G-7. PENGANGA:- This sub-basin includes the entire catchment of the Penganga from its source to its confluence with the Wardha with all its tributaries.

G-8. WARDHA:- This sub-basin comprises river Wardha from its source to its confluence with the Wainganga with all its tributaries but excluding the catchment of the Penganga (G-7 above).

G-9. PRANHITA:- This sub-basin comprises the catchments of river Wainganga from its source to its confluence with the Wardha and the Pranhita up to its confluence with the Godavari. The sub-basin includes all the tributaries of the Wainganga and the Pranhita except the Penganga and the Wardha (G-7 and G-8 above). The Wainganga after its confluence with the Wardha is called the Pranhita.

G-10. LOWER GODAVARI:- This sub-basin consists of the lower part of the river Godavari from its confluence with the Pranhita up to the sea. The sub-basin includes the direct catchment of the Godavari in this reach with all its tributaries except the Indravati and the Sabari (G-11 and G-12 below).

G-11. INDRAVATI:- This sub-basin includes all the areas drained by the Indravati and its tributaries from its source to its confluence with the Godavari.

G-12. SABARI:- This sub-basin includes the entire catchment of the Sabari river from its source to its confluence with the Godavari including its main tributary Sileru (also known as Machkund river in its initial reaches).

## **INTERSTATE AGREEMENT ON LENDI PROJECT**

This agreement made at Hyderabad this day of 18<sup>th</sup> November in the year Two Thousand Three between the GOVERNOR OF MAHARASHTRA exercising the executive powers of the Government of State of Maharashtra, hereinafter called the "Government of Maharashtra" (which expression shall unless repugnant to the context, include his successors in office representing the State of Maharashtra and assigns) of the one part and the GOVERNOR OF ANDHRA PRADESH exercising the executive power of the Government of State of Andhra Pradesh<sup>58</sup> hereinafter called the "Government of Andhra Pradesh" (which expression shall, unless repugnant to the context does not so admit, include his successors in office representing the State of Andhra Pradesh and assigns) of the other part.

WHEREAS Government of Maharashtra and Government of Andhra Pradesh have agreed that an Irrigation Project on the river Lendi (hereinafter referred to as "the Lendi Project") shall be executed as herein set out as a joint project of the said two Governments.

AND WHEREAS both the parties have agreed hereto that the Lendi project is to be executed and maintained after completion and the total cost thereof is to be shared and paid by the parties in the manner hereinafter set out and the rights, duties and liabilities of the parties in connection herewith shall be as hereinafter specified.

AND WHEREAS the Planning Commission, Government of India has allowed the execution of the Lendi project in accordance with financial provisions therefor made in the State plans as have been approved by the Planning Commission

NOW THEREFORE, THIS AGREEMENT WITNESSES AND IT IS HERE BY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO IN CONNECTION WITH THE LENDI PROJECT AS FOLLOWS:

### LENDI PROJECT

1.1 Pursuant to the directions of the Godavari Water Disputes Tribunal and in terms of the Inter State Agreement, dated 6-10-1975, between Maharashtra and Andhra Pradesh, it is agreed to take up Lendi Project as a joint project with agreed utilisation and to set up joint committees for this purpose.

1.2 With a view to ensuring efficient, economic and speedy execution of the Lendi Project, Government of Maharashtra and Government of Andhra Pradesh hereby agree that the Lendi Project shall be constructed, operated and maintained as a joint venture of the Government of Maharashtra and Government of Andhra Pradesh.

### EXECUTION OF WORK

2.1 The Lendi project envisages execution of the following work viz.

- (a) Construction of an Earthen dam of about 27.83 mtr Height at deepest bed level across Lendi river near village Gonegaon in Mukhed Taluka of Nanded District in Maharashtra State to impound about 145.62 M cum (5.15 TMC) of water;
- (b) Construction of a common carrier of length 20.46 km., 1) Left Bank Canal (L.B.C.) in Maharashtra (beyond 20.46 km.) i.e. 30.84 km. 2) Right Bank Canal (R.B.C) of Andhra Pradesh for 35 km. And 3) Off take point of Andhra Pradesh at RD. 20.46 km.

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<sup>58</sup> For this agreement concerned state is now Telangana.

2.2 Total Irrigation proposed is 26,924 ha. out of which 15,710 ha. will be in Maharashtra State and the balance 11,214 ha. in Andhra Pradesh State with conjunctive use of both surface and ground water as indicated below:

| Sl.No. | Source of Irrigation | Ayacut/ICA                |                          | Total                     |
|--------|----------------------|---------------------------|--------------------------|---------------------------|
|        |                      | Maharashtra state         | Andhra Pradesh           |                           |
| 1.     | Surface water        | 11000 ha<br>(27170 acres) | 8907 ha<br>(22000 acres) | 19907 ha<br>(49170 acres) |
| 2.     | Ground Water         | 4710 ha                   | 2307 ha                  | 7017 ha                   |
|        | <b>Total</b>         | <b>15710 ha</b>           | <b>11214 ha</b>          | <b>26924 ha</b>           |

The control levels of the dam across Lendi river near village Gonegaon are as under:-

|            |          |
|------------|----------|
| M.D.D.L.   | 389.50 M |
| F.R.L.     | 396.00 M |
| M.W.L.     | 398.50 M |
| Top of dam | 401.00 M |

### 2.3 (a) SHARING OF WATER OF LENDI PROJECT

The State wise final utilisation of water under Lendi Project will be as follows:-

| Sl.No. | State          | Utilisation in TMC |             |            |
|--------|----------------|--------------------|-------------|------------|
|        |                | Net                | Evaporation | Total      |
| 1.     | Maharashtra    | 3.23               | 0.70        | 3.93(62%)  |
| 2.     | Andhra Pradesh | 2.00               | 0.43        | 2.43(38%)  |
|        | <b>Total</b>   | 5.23               | 1.13        | 6.36(100%) |

2.3 (b) Deficit of water compared to the planned use of 179.98 M-Cum. (6.36 TMC) of water at 75% dependability will be shared by each state in the proportion of planned gross water utilisation of each State viz. 62.38. However, for deciding whether there is surplus or deficit of water, the opinion of Standing Committee shall be final. However, such decisions shall not be final unless taken in Standing Committee, where at least onemember representing the State of Andhra Pradesh is present.

2.3 (c) In the case of Andhra Pradesh the net utilisation of water available at Canal Head would be 2.00 TMC (excluding evaporation losses}.

A) However, there would be assured quantity of 1.86 TMC of water available, after accounting for transit losses (0.14 TMC) to the Government of Andhra Pradesh at the border of Andhra Pradesh.

B) Any dispute arising in this matter will be referred to the Standing Committee whose decision shall be final and binding on both the States.

### SUBMERGENCE AREA

2.4 The total submergence area under the Lendi Project shall be about 3052 ha. From 12 villages in Mukhedtaluka of Nanded District in Maharashtra.

### LENDI PROJECT COST

2.5 A detailed revised project report of the Lendi Project incorporating the irrigation in Andhra Pradesh was prepared and remarks raised by Central Water Commission, New Delhi, are under compliance for obtaining clearance from Planning Commission. The Government of Andhra Pradesh has communicated its concurrence to the technical aspects of the Lendi Project on 20.12.1999. The Government of Maharashtra has submitted revised estimate of the project including A.P. portion amounting to Rs.275.83Crores(RSR 1999-2000) to the Central Water Commission, New Delhi, for obtaining technical clearance.

### CONSTRUCTION WORKS

2.6 (i) The construction of the dam and Head works and also common carrier canal up to 20.46 KM will be carried out by the State of Maharashtra.

2.6 (ii) The construction of the portion of the canals, branches and distributaries lying in Maharashtra territory and serving Maharashtra areas exclusively will be carried out by the Government of Maharashtra and those lying in Andhra Pradesh areas exclusively will be carried out by Government of Andhra Pradesh. As the initial 8 Km. portion of Right Bank Canal lies in Maharashtra beyond which entire command area of Right Bank Canal lies in Andhra Pradesh, the cost of part portion of Right Bank Canal (8 K.M.) from the off-take point at R.D 20.46 KM lying in Maharashtra State shall be borne by Andhra Pradesh and executed by Maharashtra State on Deposit work basis. The Andhra Pradesh Government shall deposit the equivalent cost of this portion of Right Bank Canal at the beginning of every financial year as per construction schedule.

2.6 (iii) The lift irrigation schemes if any will be prepared, executed and maintained by the respective States at their own cost.

2.6 (iv) The construction of the Head works under the Lendi Project has already been started in 1986-87 by the Government of Maharashtra and same is in progress. The construction of the Head works shall be completed approximately by the end of December, 2007.

2.6 (v) The Left Bank and Right Bank canals envisaged in the Lendi Project are designed taking in to consideration the irrigation in Maharashtra and Andhra Pradesh States.

2.6 (vi) Maharashtra may provide irrigation for 810 ha./2000 acre under common carrier canal up to 20.46 K.M. However, Maharashtra should not use water for irrigation or for any other purpose from Right Bank Canal lying in Maharashtra beyond K.M.20.46 of common canal.

### SHARING OF COST OF LENDI PROJECT

2.7(a) It is hereby agreed that the revised administratively approved cost of Rs. 275.83 Crores (including the cost of Andhra Pradesh portion), subject to further revision from time to time, for the construction works under the Lendi Project shall be shared between the Government of Maharashtra and the Government of Andhra Pradesh as follows-

| S.No. | Details            | Maharashtra<br>(Rs. in Crores) | Andhra Pradesh<br>(Rs. in Crores) | Total<br>(Rs. in Crores) |
|-------|--------------------|--------------------------------|-----------------------------------|--------------------------|
| 1.    | Dam and Head Works | 96.89 (62%)                    | 59.38 (38%)                       | 156.27                   |
| 2.    | Common Canal       | 8.72(50.22%)                   | 8.64(49.78%)                      | 17.36                    |
| 3.    | Canals             | 52.36                          | 49.84                             | 102.2                    |
|       | <b>Total</b>       | <b>157.97</b>                  | <b>117.86</b>                     | <b>275.83</b>            |

2.7 (b) The cost of the common portions of the left bank canal, right bank canal and the branches as would be revised from time to time, shall be shared by the Government of Maharashtra and Government of Andhra Pradesh on the basis of Cumec-Kilometers apportionable as per the requirement of each State, provided, however, that the cost of the main canals, branches and distributaries serving exclusively the territories of one State only, will be borne by that State alone i.e.

i) The cost of the Dam and the head works shall be shared in the ratio of the gross utilisations of water in the respective territories of the two states viz. in the ratio of 62 : 38 between Maharashtra State and Andhra Pradesh.

ii) The cost of the common portion of the left bank canal shall be shared by the Govt. of Maharashtra and Andhra Pradesh on the basis of peak discharges of 231 cusecs and 229 cusecs respectively i.e. in the ratio of 50.22 : 49.78.

iii) The cost of the main canal, branches and distributaries serving exclusively the territories of one State only, will be borne by that State alone.

2.7 (c) The cost of the other common works and services, required shall be shared between the two State Governments in proportion to the projected utilisation of water by the two States as 62:38.

2.7 (d) The rate of interest for the default in payment on the part of Andhra Pradesh towards their contribution against the agreed dates or any delay in execution of the works by Maharashtra as per the agreed plan of action shall be charged @ 12% per annum w.e.f the date of signing the agreement.

No interest on the amount if any to be contributed by Andhra Pradesh so far for the joint works would be considered.

The Government of Andhra Pradesh shall pay to the 'Government of Maharashtra the share of its proportionate cost in respect of the works already executed, whether partly or wholly as on date of signing the agreement i.e. 18/11/2003. The Government of Andhra Pradesh agrees to initially pay Rs. 12.98 Crores as its share for part of the works already executed. The remaining amount which would have to be contributed by Government of Andhra Pradesh as its share for the works already executed as on 18/11/2003 would be paid within 3 months of intimation by Government of Maharashtra.

#### OPERATION AND MAINTENANCE OF THE WORKS

2.8 (i) The operation and maintenance of the head works and common length of canals in Maharashtra shall be looked after and carried out by the Government of Maharashtra while the operation and maintenance of canal in Andhra Pradesh shall be looked after and carried out by the Government of Andhra Pradesh.

2.8 (ii) The operation and maintenance of the Right Bank Canal portion lying in Maharashtra territory will be looked after and carried out by Government of Andhra Pradesh.

2.8 (iii) The operation and maintenance of canals, branches with distributaries lying in and serving exclusively one State shall be done by the State concerned at its cost.

2.8 (iv) The cost of operation and maintenance of the head works and the common portions of canals and branches with distributaries will be shared according to clauses 2.7(a) and 2.7(b) above respectively.

2.8 (v) The Government of Andhra Pradesh shall pay its proportionate share of cost of operation and maintenance of Head works and common portions of canals operated and maintained by the State of Maharashtra to the Government of Maharashtra.

2.8 (vi) The map showing common length of canal and branches in Maharashtra and Andhra Pradesh along with area to be irrigated is attached to this agreement.



### PROVISION OF FUNDS

2.9 (i) During the subsistence of this Agreement the Government of Maharashtra and the Government of Andhra Pradesh shall make available every year adequate funds as per their respective share for execution of the works included in the budgetary year so as to ensure that the Lendi Project is executed in accordance with agreed time schedule and within the stipulated period.

2.9 (ii) The Government of Andhra Pradesh shall pay in\*\*\*\*\* to the Gov\*\*\*\* its share of cost which is to be incurred schedule of payments as may be mutually agreed to. The advance payments will be made in the first week of May in the first half-year and the first week of October in the 2<sup>nd</sup> half year of every financial year beginning from April. The payments for the 1<sup>st</sup> half-year of a financial year will be released after finalization of the accounts of the 1<sup>st</sup> half year of the previous financial year.

2.9(iii) In the event of two consecutive defaults in payment of half yearly instalments by Government of Andhra Pradesh or any delay in execution of the works by Government of Maharashtra as per the agreed action plan interest @ 12% per annum will be charged to the defaulting State from the 1<sup>st</sup> day of the next Half year. For the unspent amount of Andhra Pradesh available with Maharashtra, Government of Maharashtra shall pay 12% interest.

2.9(iv) Similarly in the event of defaults in payment of Government of Andhra Pradesh in respect of sharing of cost of maintenance of common canal running in the State of Maharashtra before the end of the financial year in which the expenditure is incurred, interest at the rate of 12% per annum will be charged to the Government of Andhra Pradesh from the beginning of next financial year.

2.9(v) The Government of Maharashtra shall inform the Government of Andhra Pradesh about the yearly requirement of funds for works as shown in the budget by the month of December of the previous year.

### STANDING COMMITTEE

3.1 For coordinating the construction of the Lendi Project and its operation and maintenance after completion, a Standing Committee comprising the following officers shall be constituted viz.

|   |             |
|---|-------------|
| (1) Chief Engineer, Irrigation Department,<br>Government of Maharashtra, Aurangabad                                   | Chairman    |
| (2) Chief Engineer, Irrigation Department,<br>Government of Andhra Pradesh  | Co-Chairman |
| (3) Superintending Engineer, Irrigation Department<br>Government of Maharashtra<br>(connected with Lendi project)     | Member      |
| (4) Superintending Engineer, Irrigation Department,<br>Government of Andhra Pradesh<br>(connected with Lendi Project) | Member      |
| (5) Collector, Nanded   | Member      |
| (6) Executive Engineer, Irrigation Department<br>Government of Andhra Pradesh<br>(in-charge of Lendi Project)         | Member      |
| (7) Executive Engineer, Irrigation Department,<br>Government of Maharashtra   |             |

(in-charge of the Lendi Project)

Member Secretary

3.2 The Standing Committee shall meet not less than once in three months. The minutes of the meeting of the Standing Committee incorporating there in the decisions taken by the Standing Committee shall be placed before the control board constituted under clause 4.1 hereof.

#### CONTROL BOARD

4.1 For overall supervision and control over planning and construction of the Lendi project and maintenance of the Lendi Project after completion, a control board comprising of Ministers and Officers of the two State Governments shall be constituted.

The composition of the control board shall be as under:

|  |                  |
|--|------------------|
| 1. Minister for Irrigation, Maharashtra  | Chairman         |
| 2. Minister for Irrigation, Andhra Pradesh   | Co-Chairman      |
| 3. Minister for Revenue and Forest, Maharashtra  | Member           |
| 4. Minister for Revenue and Forest, Andhra Pradesh                                       | Member           |
| 5. Minister of State for Irrigation, Maharashtra   | Member           |
| 6. Minister of State for Irrigation, Andhra Pradesh                                      | Member           |
| 7. Secretary, Irrigation Department, Maharashtra   | Member           |
| 8. Secretary, Irrigation Department, Andhra Pradesh                                      | Member           |
| 9. Secretary, Finance Department, Maharashtra  | Member           |
| 10. Secretary, Finance Department,, Andhra Pradesh                                       | Member           |
| 11. Secretary, (Rehabilitation), Revenue and Forest<br>Department, Maharashtra           | Member           |
| 12. Secretary, (Rehabilitation), Revenue and Forest Department,<br>Andhra Pradesh        | Member           |
| 13. Chief Engineer, Irrigation Department,Aurangabad,<br>Maharashtra                     | Member           |
| 14. Chief Engineer, Irrigation Department, Hyderabad,<br>Andhra Pradesh                  | Member           |
| 15. Superintending Engineer, (connected with Lendi Project)<br>Government of Maharashtra | Member-Secretary |

4.2 One Superintending Engineer from the Government of Andhra Pradesh connected with the execution of the Lendi Project Works, shall be nominated by the Government of Andhra Pradesh to work as a Joint Secretary of the Control board. The Joint Secretary shall have access to the concerned documents. The office of the Superintending Engineer, nominated by Government of Maharashtra as the Secretary of the Board shall be the permanent office of the Inter-State Control Board and all records of the control board shall be kept in this office.

4.3 Normally at least one meeting of the control board shall be held in a year to sort out the problems concerning various aspects of the Lendi Project. Additional meetings may be called with the permission of the Chairman.

4.4 The Control Board will frame its own rules for the conduct of its business.

## PROGRAMME, DESIGN AND MATERIALS

5.1 The programme of construction of the Head works and the portion of the canal and distributaries in territories in the State of Maharashtra shall be prepared by the Government of Maharashtra and the programme for the construction of the canal and distributaries in the State of Andhra Pradesh shall be prepared by the Government of Andhra Pradesh and thereafter the same shall be got approved by the Standing Committee and the Control Board. This being a joint project, the designs, plans, and estimates of the Lendi Project prepared by one State shall be made available to the Engineers of the other State for reference and suggestions. Designs of the canals and canal structures in Andhra Pradesh territory shall be prepared by the Government of Andhra Pradesh.

5.2 For the construction of dam, canals and other structures of the Lendi Project, it may become necessary for either State, to extract materials like sand, rubble, etc., from convenient locations in the other State for the bonafide works. Both the States shall allow such use of materials for the bonafide works of the Lendi Project on a request from proper authority and as per terms and conditions applicable for such extraction of material applicable in that State.

## RESETTLEMENT OF PROJECT AFFECTED PERSONS

6.1 The submergence area of the Lendi Project lies entirely in Maharashtra. The project displaced persons from the submergence area shall be rehabilitated in Maharashtra and the necessary facilities will be given to the project affected persons by the Government of Maharashtra to resettle in their respective territories in accordance with the provisions of the Maharashtra Project Affected Persons Act, 1986.

6.2 Andhra Pradesh will pay the proportionate cost of Resettlement & Rehabilitation (R&R) and Project Affected Persons (PAPs) will be rehabilitated in Maharashtra territory as per Maharashtra norms.

## ADJUDICATION IN CASE OF DISPUTES AND DIFFERENCES

7.0 In the event of any dispute or difference arising out of any clause/ clauses or part of the clause/ clauses of this agreement between the parties hereto, the same shall be referred to the Chief Ministers of the Government of State of Maharashtra and Government of State of Andhra Pradesh for resolution. In the event of non-resolution of the dispute by the Chief Ministers the same shall be referred for adjudication to such person(s) as may be mutually agreed by both the parties whose decision thereon shall be final and binding on both parties. The provision of Arbitration and Conciliation Act 1996 shall be applicable to such disputes. The Arbitration proceedings shall be held at Mumbai.

## STAMP DUTY

8.0 The Government of Maharashtra shall bear and pay the Stamp Duty on this Agreement and duplicate thereof.

IN WITNESS WHEREOF the Governor of Maharashtra hath caused the Chief Secretary to the Government of Maharashtra to set his hand and affix his official seal hereto for and on his behalf and the Governor of Andhra Pradesh hath caused the Chief Secretary to the Government of Andhra Pradesh to set his hand and affix his official seal hereto for and on his behalf the day, month and year first herein above written.

SIGNED, SEALED AND DELIVERED BY

Shri AJIT NIMBALKAR  
Chief Secretary to the Government of Maharashtra  
for and on behalf of the Governor of Maharashtra

(Sd/-)  
(AJIT NIMBALKAR)  
18-11-2003  
Chief Secretary to the Govt. of  
Maharashtra

(Sd/-)  
( N.D. VADNERE)  
18-11-2003  
Secretary to the Govt. of  
Maharashtra  
Irrigation Department

In the presence of  
WITNESSES  
1) Shri. N.D. Vadnere  
2) ShriM.K.Kulkarni

(Sd/-)  
(M K KULKARNI)  
18-11-2003  
Executive Director  
Godavari Marathwada Irrigation  
Developmentcorporation  
Aurangabad

SIGNED, SEALED AND DELIVERED BY

Shri MOHAN KANDA  
Chief Secretary to the Government of Andhra Pradesh  
for and on behalf of the Governor of Andhra Pradesh

(Sd/-)  
(MOHAN KANDA)  
18-11-2003  
Chief Secretary to the Govt. of  
Andhra Pradesh

In the presence of  
WITNESSES  
1) Dr.C.V.S.K.Sarma  
2) ShriN.Gopal Reddy

(Sd/-)  
(Dr.C.V.S.K.SARMA)  
18-11-2003  
Secretary to the Govt. of A.P  
Irrigation Department

(Sd/-)  
(N.GOPAL REDDY)  
18-11-2003  
Engineer-in-Chief,IS&WR  
Irrigation Department  
Govt. of Andhra Pradesh

**CONSTITUTION OF INTER STATE BOARD**  
**FOR**  
**Pranhita Chevella Sujala Sravanti Project.**

In pursuance of the proceedings of the meeting between the then Chief Ministers of Maharashtra and Andhra Pradesh<sup>59</sup> Shri S. B. Chavan and Shri J. Vengala Rao respectively on 06/ 10/ 1975, and the agreement which are part of “Further report-1980” of the Godavari Water Disputes Tribunal as Annexure-B, the following Three Irrigation Projects are the joint ventures of the two State Governments :-

**1. Lendi Project**

**2. Lower Penganga Project**

**3. Pranhita Project**

Of the above schemes, interstate issues of Lendi Project and Lower Penganga project have already been sorted out. The remaining Pranhita Project namely Dr. B.R.Ambedkar Pranhita Chevella Sujala Sravanti project (hereinafter referred as PCSS), is being investigated and surveyed for execution.

With a view to ensuring efficient, speedy and economical investigation and execution of this project and in pursuance of the relevant clauses under Pranhita Sub-basin pertaining to States of Maharashtra and Andhra Pradesh and the entitlements of both States as stated under those clauses, we have consented to form a joint committee viz. Inter State Board of two States as per Agreement at Annexure-I.

2. Inter State Board shall be overall in-charge of the investigation, survey, preparation of project report and execution of PCSS project and any other issues mutually agreed by both the States with regard to Pranhita River.

3. The Governments of two States shall communicate the ratification of this agreement to each other.

(N. Kiran Kumar Reddy)  
Hon'ble Chief Minister  
Andhra Pradesh State,  
Hyderabad.

(Prithviraj Chavan)  
Hon'ble Chief Minister  
Maharashtra State,  
Mumbai.

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<sup>59</sup> State of Telangana is now concerned party for this agreement.

**Agreement for Inter State Board**

1. In pursuance of the proceedings of the meeting between the Chief Ministers of Maharashtra and Andhra Pradesh held at Hyderabad on 6<sup>th</sup> October, 1975, the following three Irrigation Projects are the joint ventures of the two State Governments :-

**1. Lendi Project****2. Lower Penganga Project****3. Pranhita Project**

Of the above schemes, interstate issues of Lendi Project and Lower Penganga project have already been sorted out. The remaining Pranhita namely Dr.B. R. Ambedkar Pranhita Chevella Sujala Sravanti project (hereinafter referred as PCSS), is being investigated and surveyed for execution. With a view to ensuring efficient, speedy and economical investigation and execution of this project, the Government of Maharashtra and Andhra Pradesh have resolved to constitute an Inter State Board.

This Agreement for Inter State Board is made on this 5<sup>th</sup> day of May 2012 among the State of Maharashtra and Andhra Pradesh and shall come into force with effect from 05<sup>th</sup> May 2012.

**1.1. COMPOSITION OF INTER STATE BOARD**

The Inter State Board (hereinafter referred as ISB) will consist of the following.

|      |   |                  |
|------|---|------------------|
| I    | Chief Minister<br>Maharashtra / Andhra Pradesh (By rotation of one year)<br>(The Hon'ble Chief Minister shall be the Co-Chairman of the Board when he is not Chairman.) | Chairman         |
| II   | Cabinet/ State Minister, WRD/ I&.CAD, MS/ AP  | Member           |
| III  | Cabinet Minister, Energy, MS / AP   | Member           |
| IV   | Cabinet Minister, Finance, MS/AP  | Member           |
| V    | Cabinet Minister, Revenue, MS / AP  | Member           |
| VI   | Cabinet Minister, Forest, MS/AP   | Member           |
| VII  | Representative of Minister of WR, GOI   | Member           |
| VIII | Secretary, WRD/I&.CAD, MS/ AP   | Member           |
| IX   | Secretary, Energy, MS/AP  | Member           |
| X    | Secretary, Finance, MS/AP   | Member           |
| XI   | Secretary, Revenue, MS/AP   | Member           |
| XII  | Secretary, Forest, MS / AP  | Member           |
| XIII | Executive Director / Engineer-in-Chief of<br>Concerned Irrigation Development Corporation/<br>I&.CAD, MS / AP   | Member           |
| XIV  | Concerned Chief Engineers of WRD/I&.CAD, MS / AP  | Member           |
| XV   | Chief Conservator of Forest concerned MS / AP   | Member           |
| XVI  | Representative of the C.W.C., GOI Member  | Member           |
| XVII | Secretary, Inter State Board  | Member Secretary |

ISB shall have the power to invite to its meetings such other officers / experts as it may consider necessary. The list of such invitee officer shall be supplied by the Members of the Board to the office of Inter State Board.

The Board shall be assisted by a whole time Secretary of the rank of Superintending Engineer and such other staff as may be necessary.

## 1.2 THE POWERS AND FUNCTIONS OF ISB :

1. ISB shall take charge of and deal with all matters relating to all relevant items as stipulated in the G.W.D.T. Award, 1979 and agreements between the States of Maharashtra and Andhra Pradesh, and further report of the GWDT-1980 with regard to Pranhita river.
2. The decisions of ISB shall be final and shall be implemented by the respective State Governments. However, the decision of ISB shall be open to review by ISB itself, on request by any of the states in the immediate next meeting of ISB.
3. The ISB shall frame its rules for conduct of business and procedure.
4. The ISB shall have the powers to alter/amend the functions of Standing Committee.
5. In case of any difference of opinion regarding any policy matter or any other matter in Standing Committee, the matter shall be referred to ISB.

The Secretary of the ISB shall be responsible for the maintenance of the minutes of the proceedings of every meeting of ISB, duly countersigned by the Chairman and Co-Chairman.

The signature of the Secretary of ISB shall authenticate all orders and decisions of ISB and Standing Committee.

## 1.3 HEADQUARTER OF THE INTER STATE BOARD :

Headquarter of the ISB shall be located at Hyderabad. However, the meetings of ISB could be held at Hyderabad, Mumbai or any other convenient place.

2. In order to discharge the functions of the ISB more effectively, there shall be a Standing Committee.

## 2.1 CONSTITUTION OF STANDING COMMITTEE

The Standing Committee shall consist of the following officers from the two States :

| Sr. No | Designation                                     | State          | Designation in Committee | Remarks                 |
|--------|---|----------------|--------------------------|-------------------------|
| 1.     | Prin.Secretary (Projects / ISWR)                | Andhra Pradesh | Chairman                 | By rotation of one year |
| 2.     | Secretary, WRD                                  | Maharashtra    | Chairman                 |                         |
| 3.     | Secretary, I&,CAD or authorized representative  | MS/AP          | Member                   |                         |
| 4.     | Secretary, Energy or authorized representative  | MS/AP          | Member                   |                         |
| 5.     | Secretary, Finance or authorized representative | MS/AP          | Member                   |                         |
| 6.     | Secretary, Revenue or authorized representative | MS/AP          | Member                   |                         |

|     |   |                |                  |  |
|-----|---|----------------|------------------|--|
| 7.  | Secretary, Forest or authorized representative  | MS/AP          | Member           |  |
| 8.  | Chief Conservator of Forest or authorized representative                                      | MS/AP          | Member           |  |
| 9.  | Executive Director / Engineer-in-Chief of concerned Irrigation Development Corporation /I&CAD | MS/AP          | Member           |  |
| 10. | Concerned Chief Engineer  | Andhra Pradesh | Member           |  |
| 11. | Concerned Chief Engineer  | Maharashtra    | Member           |  |
| 12. | Concerned Superintending Engineer   | Andhra Pradesh | Member           |  |
| 13. | Concerned Superintending Engineer   | Maharashtra    | Member           |  |
| 14. | Secretary, Inter State Board  | MS/AP          | Member Secretary |  |

2.2 Principal Secretary / Secretary, WRD of the other state shall be co-chairman. Secretary, ISB shall be the Convener of the Standing Committee.

### 2.3 **FUNCTIONS AND POWERS OF THE STANDING COMMITTEE**

- 2.3.1 This Standing Committee shall prepare a draft for perusal and decision of ISB regarding fixing place of barrage, finalization of controlling levels, water utilization and deciding the share of expenditure involved of two states etc., in respect of barrage structure of Dr. B.R. Ambedkar Pranhita Chevella Sujala Sravanti Project and issues related thereto.
- 2.3.2 To approve the survey, investigation, and accord approval to the Project reports and monitor the progress of construction of barrage across Pranhita river in PCSS project.
- 2.3.3 To decide the quantum of water for each state from the PCSS project in accordance with clauses (V)(3)(A) & (B) and (IX)(1)(a) 85 (b) of Annexure "B" of GWDT for the use of each state alongwith sharing of costs to be borne by each state and obtain decision of ISB.
- 2.3.4 To decide the relief and rehabilitation and related work component wise between the two states.
- 2.3.5 To review the progress and lay down steps to be taken to expedite the work and to decide the best use of available water during the construction of barrage.
- 2.3.6 To decide the programme of resettlement of persons displaced as a result of the projects and to review the progress of resettlement.
- 2.3.7 To consider and advise on proposals of land acquisition and rehabilitation including facilities to be provided to rehabilitated villages / populations, as per the norms of the Government of India / respective state governments.
- 2.3.8 Any other function specifically assigned by ISB.



- 2.3.9 The actual work of investigation, preparation of project reports and construction of barrage shall be carried out by Chief Engineer/s in charge of the PCSS project under the direction of ISB.
- 2.3.10 In case of any difference of opinion regarding any policy matter or any other matter in Standing Committee, the matter shall be referred to ISB.
- 2.3.11 Standing Committee shall be responsible to ISB.

3. In order to resolve the difficulties pertaining to Dr. B.R. Ambedkar Pranhita Chevella Sujala Sravanti Project, there shall be a Coordinating Committee.

### 3.1 **COORDINATING COMMITTEE**

The composition of Coordinating Committee shall be as follows :

| Sr. No | Designation   | State          | Role in Committee |
|--------|---|----------------|-------------------|
| 1.     | Chief Engineer, Dr B.R. Ambedkar Pranhita Chevella Sujala Sravanti Project, Hyderabad | Andhra Pradesh | Chairman          |
| 2.     | Chief Engineer, WRD, Nagpur   | Maharashtra    | Co-Chairman       |
| 3.     | Superintending Engineer, Irrigation Projects Investigation Circle, Nagpur             | Maharashtra    | Member            |
| 4.     | Superintending Engineer, Chandrapur Irrigation Projects Circle, Chandrapur            | Maharashtra    | Member            |
| 5.     | Superintending Engineer (Barrage concerned)   | Andhra Pradesh | Member            |
| 6.     | District Collector, Adilabad  | Andhra Pradesh | Member            |
| 7.     | District Collector, Chandrapur  | Maharashtra    | Member            |
| 8.     | To help the Committee (if necessary) Expert member / other member                     | MS/AP          | Member            |

- 3.2 The Coordinating Committee is expected to monitor the works regarding barrage, survey and investigation, information of submergence area, land acquisition and rehabilitation, preparation of project reports etc. The Coordination Committee shall be responsible to the Standing Committee, and subject to control of ISB, shall carry out its functions as per the instructions / directions of the Standing Committee.

### 4. **DETAILS OF ESTABLISHMENT OF THE OFFICE OF INTER STATE BOARD**

| Sr. No | Designation of the post                             | No. of the post | Remarks |
|--------|---|-----------------|---------|
| 1.     | Secretary of the Board(*) (Superintending Engineer) | 1               |         |

|     |   |   |  |
|-----|---|---|--|
| 2.  | Joint Secretary (*) (Executive Engineer)        | 1 |  |
| 3.  | Deputy Engineer/ Deputy Executive Engineer (**) | 2 |  |
| 4.  | Junior Engineer/ Assistant Engineer             | 2 |  |
| 5.  | Superintendent / Section Officer                | 1 |  |
| 6.  | Assistant / Senior Assistant                    | 1 |  |
| 7.  | Clerk/ Junior Assistant                         | 2 |  |
| 8.  | Senior Stenographer                             | 1 |  |
| 9.  | Typist / Data Entry Operator                    | 1 |  |
| 10. | Assistant Draftsman/ Tracer                     | 1 |  |
| 11. | Driver  | 2 |  |
| 12. | Peon/Office Subordinate                         | 5 |  |
| 13. | Chaukidar/Watchman                              | 2 |  |

- 4.1 The Secretariat office of ISB shall come into force with effect from 05<sup>th</sup> May, 2012.
- 4.2 The expenditure on the office of the secretariat of the ISB shall be shared in the proportion of the water utilization of parties.
- 4.3 Annual establishment cost initially shall be met from A.P. budget, which shall be shared by the two states in the proportion of their water utilization and reimbursed annually by Maharashtra as per expenditure figures.
- 4.4(\*) Posts of Secretary & Joint Secretary shall invariably be filled in by rotation of three years from either state, when Secretary shall be from one state, the Joint Secretary shall be of other state.
- 4.5(\*\*) Posts of Deputy Engineer shall be filled in from either states one each.

For and on behalf of  
Governor of Andhra Pradesh

(Dr.S.K.Joshi, IAS)  
Principal Secretary (Projects/ISWR)  
Irrigation & CAD Department to  
Government of Andhra Pradesh

In the presence of Witness.  
i) A N Das, IAS, Principal Secretary  
I&CAD, Andhra Pradesh

ii) B.Hari Ram  
Chief Engineer

For and on behalf of  
Governor of Maharashtra

(Ekanath B. Patil)  
Principal Secretary  
Water Resources Department to  
Government of Maharashtra

In presence of Witness  
i) Hiralal T. Mendhegiri Pradesh  
Chief Engineer and Jt. Secretary

ii) V.M. Kulkarni  
Chief Engineer

**AGREEMENT BETWEEN GOVERNMENT OF ANDHRA PRADESH AND GOVERNMENT OF PUDUCHERRY RELATING TO WATER SUPPLY TO YANAM CHANNEL, ADAVIPALEM CHANNEL FOR IRRIGATION PURPOSE AND INDUSTRIAL PURPOSE AND PUMPING OF DRINKING WATER FROM BANK CANAL OF GODAVARI EASTERN DELTA AT LACHIPALEM(V) AND PUMPING FOR DRINKING WATER SUPPLY ON UPSTREAM SIDE OF S.A.C BARRAGE AT DOWLAISWARAM.**

This Agreement made and executed on this the twenty fifth day of March Two Thousand and Thirteen between the President of India represented by the Secretary to Government (Works), Government of Puducherry (hereinafter called “The Government of Puducherry” which expression shall wherever the context so admits include his successors in the office and assignees) of the ONEPART and the Governor of Andhra Pradesh represented by the Engineer-in-Chief(Irrigation), Irrigation & CAD Department, Government of Andhra Pradesh (hereinafter called “The Government of Andhra Pradesh” which expression shall wherever the context so admits include his successors in office and assignees) of the OTHER PART, sheweth as follows.

**ARTICLE-1**

The agreement shall be deemed to have come into operation on the twenty fifth day of March 2013 and shall be on a temporary basis terminable at any time by either party to the agreement giving three months notice in writing to the other of its intention to so terminate, but without prejudice to the settlement of claim outstanding on such termination, or arising out of anything above before such termination.

**ARTICLE-2**

Subject to the availability of water, the authorized ayacut both for the first and the second crop under French Channel shall be 565 (Five hundred and sixty five) Acres and under Adavipolam Channel shall be 600 (Six hundred) Acres through Bank Canal of Godavari Eastern Delta. The ayacut shall not be increased without prior sanction of the Government of Andhra Pradesh. Any unauthorized extension of Irrigation beyond this overall limit shall be liable to such penalty not exceeding twenty times the full water rate for the first crop levied in the adjacent Andhra Pradesh territory as may be fixed by the Collector of East Godavari in the State of Andhra Pradesh or any of his revenue subordinate not below the rank of Tahsildar and which shall be paid by the Government of Puducherry to the Government of Andhra Pradesh.

**ARTICLE-3**

The breakup of water supply for different uses is as follows:

- i) Supply of 3.00 Cusecs of water (for Drinking water) by pumping from upstream side of S.A.C. Barrage with necessary water conductor system at the cost of Government of Puducherry.
- ii) 1.65 Cusecs (Drinking water) through Pumping from Bank canal of Godavari Eastern Delta near Lachipalem village,
- iii) 3.00 Cusecs for Industries from Bank Canal of Godavari Eastern Delta at the cost of Government of Puducherry and
- (iv) 22.35 Cusecs for Irrigation through Bank canal of Godavari Eastern Delta at the cost of Government of Puducherry and at 70 duty or such higher duty as may be found necessary and adopted in the case of adjoining lands of State of Andhra Pradesh, will be made available to the Yanam ayacut by the Executive Engineer, Godavari Eastern Division subject to the special conditions and in accordance with the contents of G.O.s enclosed to this agreement i.e., G.O<sup>60</sup>.Ms

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<sup>60</sup> These GO<sup>s</sup> not attached with the agreement.

No. 105 Irrigation& CAD (P.W. Major Irrigation VII) Department dt: 13-06-2005 with Amendments issued vide G.O Ms No: 165 Irrigation & CAD (PW Major Irrigation VII) Department Dt. 15-09-2006 and Government Memo No:14974/Major. VII.1/2010 Dt. 20-07-2010.

In case of Yanam authority considers that the decision of the Executive Engineer under this article is not reasonable, the former may report the matter to the Superintending Engineer, Irrigation Circle, Dowlaiswaram, East Godavari district, Andhra Pradesh who will continue or cancel/modify the decision of the Executive Engineer within ten days of the receipt of such report.

#### **ARTICLE-4**

The Chief Minister of Government of Andhra Pradesh has agreed to the proposal to supply 30 Cusecs of water as requested by the Government of Puducherry from upstream side of SAC Barrage (3 cusecs) by pumping with necessary conductor system and from Bank canal of Godavari Eastern Delta (27Cusecs) free of cost for augmenting the drinking water needs of Yanam town as well as to meet its Irrigation/ Industrial needs.

The total cost of related works like, construction of additional storage tank, pumping arrangements along with pipe line from Bank canal(Lachipalem) to storage tank, link channel for delivering additional water to Adavipolam Channel by crossing Coringa River etc, and also strengthening of bank canal from Kapileswarapuram Lock to Tallarevu Lock, Construction of pump house near existing Gowthami stage-II pump house on upstream side of the Dowlaiswaram Barrage between Km. 0.70 to KM 0.75 of A.G.L.B flood bank on river side and pipe line excavation and laying of pipe line from the proposed pump house from Head sluice of Godavari Eastern Main Canalalong A.G.L.B flood bank and from Head sluice of Godavari Eastern Main canal toYanamtown between Godavari Eastern bank canal and Gowthami flood bank would be completely borne by the Government of Pondicherry and aboveworks are carried out by the Government of Pondicherry as per the standard specifications of Irrigation and Roads & Buildings Department of Government of Andhra Pradesh.

The lease amount for land occupied for pump house on upstream side of S.A.C Barrage and for pump house at Bank Canal of Godavari Eastern Delta at Lachipalem (V) and for a pipe line alignments from pump house (Dowlaiswaram) to Yanam has to borne by Government of Puducherry as fixed based on the conditions laid down by concerned Executive Engineer and approved by the Government of Andhra Pradesh.

#### **ARTICLE- 5**

A. Area to be irrigated in the article 4 subject to availability of water is as follows.

1<sup>st</sup> crop: 1) French Channel 565 Acres

2) Adavipolam channel 600 Acres.

2<sup>nd</sup> crop: 1) French channel 565 Acres

2) Adavipolam channel 600 Acres.

The Government of Puducherry has no right to claim any compensation on account of short supplies or no supply of water for any reason what so ever.

B. If in any year the overall limit of 1165 acres is exceeded either during the 1<sup>st</sup> crop season or during both seasons in addition to penalty provided in Article-2 water rates at the full rates levied in the adjacent Andhra Pradesh Government for the 1<sup>st</sup>crop (or) the 2<sup>nd</sup>crop as the case may be shall be paid to the Government of Andhra Pradesh in respect of the excess over 1165 Acres.

#### **ARTICLE - 6**

Andhra Pradesh Government is not responsible for any compensation for loss of crops due to partial or complete failure of supply of water in the channels.

#### **ARTICLE -7**

The Andhra Pradesh Government is empowered to reduce the water proportionately to Puducherry Government in case of diminished flows in river Godavari.

#### **ARTICLE -8**

The necessary water accounts shall be prepared and maintained by the Puducherry Government for recording cultivation, Drinking water and Industries and authenticated copies thereof shall be supplied by the Puducherry Government to the Collector of East Godavari. The Collector or any Revenue Subordinate of his, not below the rank of Tahsildar shall have the right to examine the movements. Further the Irrigation authorities not below the rank of Assistant Engineer shall have the right to examine the drawls and water accounts also.

The Collector of East Godavari or any of his Revenue Subordinate not below the rank of Revenue Inspector including an Irrigation official shall have the right to inspect the ayacut at anytime in order to detect any unauthorized irrigation. The Regional Administrator of Yanam shall, however, be informed of every such inspection 48 hours in advance thereof and the Regional Administrator may depute any officer of equivalent rank to accompany the said Collector or his subordinate.

#### **ARTICLE - 9**

The Government of Puducherry agrees to control water distribution in the irrigation area, to maintain the channel with in their territory and strengthening of Bank canal from Pillanka to Yanam border will be borne by the Government of Puducherry.

#### **ARTICLE -10**

If any dispute, difference or question shall, at any time hereafter, arises between the parties hereto or their respective representatives or assigns, in respect of the construction of these presents or concerning anything herein contained, or arising out of these presents, or as to the rights, liabilities or duties of the parties hereto, under these presents, then the same shall be referred to arbitration by a single arbitrator in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modification or amendment or re-enactment thereof for the time being in force and the decision of the arbitrator in relation to any such dispute or difference shall be final and binding on the parties hereto.

The decision whether to select and employ an arbitrator shall be optional, and according to the mutual preferences of the parties.

Done in quadruplicate in English at Hyderabad, Andhra Pradesh, on behalf of the Government of Puducherry.

IN WITNESS WHEREOF, the parties hereunto to set and subscribe their respective hands and seals, the day, month and year -first above written.

On behalf of the Government of  
Andhra Pradesh

On behalf of the Government of  
Puducherry

**Enclosure to the Agreement between Government of Andhra Pradesh and Government of Puducherry for water supply to Yanam.**

**SPECIAL CONDITIONS**

1. Water meters should be installed at pump house at Dowlaiswaram and Pump house at Lachipalem at the cost of Government of Puducherry and should be made available to the Irrigation / Revenue authorities at all times for inspection.
2. The prior concurrence of any Department if required should be obtained by the Government of Puducherry / Authorized Agency for laying pipe line crossing roads etc.,
3. If the Industries in Yanam territory propose to dispose any treated effluents, in the drains of Government of Andhra Pradesh prior permission of A.P. Pollution Control Board should be obtained to dispose effluents in the drains.
4. The Government of Puducherry / Authorized agency should leave adequate margin from the toe of the canal banks for digging and laying the pipe line.
5. The Government of Puducherry / Authorized Agency has to cover the pipeline portion after laying pipe line with proper consolidation to avoid future complications and damages during flood season.
6. The Government of Puducherry / Authorized Agency should lay 30 cm of sand cushion below the Pipeline.
7. The C.C. walls shall be constructed to avoid leakages and as directed by Irrigation Department of Andhra Pradesh for all the pipeline crossings.
8. The Irrigation Department is no way responsible for any damages to the property (Pipe line and Pump house) of the Government of Puducherry due to floods and other natural calamities and they have to make their own arrangements to safeguard their property.
9. The Government of Puducherry shall abide any other conditions laid down by the Government of A.P./Irrigation Department from time to time.
10. The Government of Puducherry shall provide illumination (Electrification) arrangements to Yanam-Yedurulanka Bridge and to maintain the same on a permanent basis including payment of electricity consumption charges.

On behalf of the Government of  
Andhra Pradesh

On behalf of the Government of  
Puducherry

**AGREEMENT<sup>61</sup> ARRIVED AT BETWEEN THE REPRESENTATIVES OF THE MADRAS AND HYDERABAD GOVERNMENT AT THE CONFERENCE HELD ON THE 6<sup>th</sup> AND 7<sup>th</sup> NOVEMBER, 1938 AT THE SECRETARIAT, FOR ST. GEORGE, MADRAS, IN REGARD TO A SCHEME FOR THE PARTIAL UTILISATION OF THE TUNGABHADRA WATERS**

The Hyderabad delegation requested that the Conference should proceed on the basis that the Madras telegram of 3<sup>rd</sup> November may be regarded as not sent. This was agreed to.

2. As regards the Principles referred to by the Right Hon'ble Sri Akbar Hydari in his letter of the 8<sup>th</sup> October, the Hyderabad delegation agreed that it would be enough for their purposes if, they are free to examine the proposals emanating from the Conference in the light of those principle and that it was not necessary to include a discussion of those points at this Conference.

3. The object at present is to decide on the practicality of a joint scheme between Hyderabad and Madras for a partial appropriation of the Tungabhadra waters at Mallapuram leaving all matters of absolute rights and claims and the disputed points for future settlement. It is to be clearly understood that neither Government shall be considered to have given up any of its points in the final settlement of rights and shall be free to raise the same at any time.

4. As a result of the discussions on the aforesaid basis it has agreed that a joint scheme for partial appropriation of the Tungabhadra waters at Mallapuram is practicable and should be worked out in all its details after such further examination as may be necessary for the purpose; and that is not necessary at this stage to go into a settlement of all rights.

5. It was agreed that Madras may draw off 50 thousand Million Cubic Feet and Hyderabad 65 thousand Million cubic feet at the reservoir. Of the latter quantity, however only 50 thousand Million Cubic feet shall belong to Hyderabad. The remaining 15 thousand M.Cft. shall be deemed joint waters but the same shall be used by Hyderabad for developing electrical power and shall be let down into the river minus the inevitable transmit loss at a spot about 20 miles below the reservoir to be utilized by Madras. Hyderabad agrees to bear all the cost of the lead of the 15 thousand M.Cft. from reservoir back into.

6. If either Government uses the river for carrying its water down to any lower point on the river, such Government shall retain its property in those waters.

7. Hyderabad and Madras shall bear the cost of the joint reservoir in equal proportion. This scheme of equal abstraction of water, it is clearly understood, is not to be considered as any settlement of the rights in the waters of the Tungabhadra nor is to serve as a basis for the building up of any rights of any of the Governments concerned.

8. All figures mentioned here are gross figures inclusive of evaporation from the reservoir.

9. It was elicited at the conference that the revenue and international policy of both the Governments should be thoroughly coordinated in order that this scheme may be a success.

10. So far as this conference goes it has been conducted in order to facilitate a joint partial scheme

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<sup>61</sup> This agreement was subsequently superseded by another agreement of June, 1944.

between Hyderabad and Madras without prejudice to the rights and interests of the other Governments concerned.

11. These minutes are agreed to as a correct record of the agreement arrived at in the conference subject to a confirmation by the respective Governments.

(signed) YAKUB HASAN

(signed) T. PRAKASAM

(signed) C. RAJAGOPALACHARI 7.11.1938

(signed) SHAMRAJ RAJWANT 7.11.1938

(signed) FAKHAR YAR JUNG

(signed) R.M. CROFTON

(signed) ALI NAWAZ JUNG

signed) AHSAN YAR JUNG



## **AGREEMENT<sup>62</sup> OF JUNE, 1944 BETWEEN MADRAS AND HYDERABAD**

**CONCLUSIONS REACHED AT THE CONFERENCE HELD AT SHAH MUNZIL, HYDERABAD, ON THE 24<sup>th</sup> AND 26<sup>th</sup> JUNE, 1944 IN REGARD TO THE SCHEME FOR THE PARTIAL UTILISATION OF THE TUNGABHADRA WATERS.**

PRESENT:

On the Madras side:

Mr. S.V. Ramamurthy, C.I.E., I.C.S.,  
Fourth Advisor to His Excellency the Governor of Madras,  
Representative, Government of Madras

Sri Rao Bahadur N.Govindaraj Ayyangar, B.A.,B.E.,  
Chief Engineer for Irrigation, Madras.

Sri A. R. Venkataraman B. A. ,B. E. ,  
Deputy Chief Engineer for Irrigation, Madras.

On the Hyderabad side:

Nawab Ali Nawaz Jung Bahadur, F.C.H.,  
Consulting Engineer, Representative, His Exalted  
Highness the Nizam's Government.

Mr. Md. Anwarulla, B.Sc.,  
Chief Engineer, P.W.D., Hyderabad.  
Mr. C.C.Dalal, B.E., A.M.I.C.E.,  
Superintending Engineer, Hyderabad.  
Mr. Khaja Azeemuddin, B.Sc., A.C.C.I.,  
Special Engineer, Hyderabad.  
(Mr. Dalal was not present during the  
discussions on the-26th).

The Conference was without commitment on either side i.e. the conclusions arrived at would not be binding unless and until they are ratified by the two Governments.

2. The object at present is to make it possible to start immediately a joint scheme between Hyderabad and Madras for a partial appropriation of the Tungabhadra waters at Mallapuram leaving all matters of absolute right and claims and disputed points for future settlement.

3. It is agreed that this agreement will supersede the previous agreement of 7<sup>th</sup> November, 1938.

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<sup>62</sup> This agreement has been superseded by Decision of KWDT-1976.

4. It is agreed that Madras and Hyderabad may each draw off 65 thousand Million Cubic Feet (including evaporation losses) from the reservoir to be constructed across the river Tungabhadra at Mallapuram. The total abstraction of water from the reservoir for use under the Tungabhadra works will be 130,000 Million Cubic Feet and no more under the present arrangement. This will be open to consideration as in paragraph 5 below. This quantity will provide for the needs of all the irrigation under the Tungabhadra works i.e., the needs of the new and pre-Moghul irrigation and also the assistance to the Kurnool-Cuddapah Canal and the Rajol bunda Canal proposed by Hyderabad, the latter being treated on an equal status with the former. This scheme of equal abstraction of water is not to be considered as any settlement of the rights in the waters of the Tungabhadra nor is it to serve as a basis for the building up of any rights of the Governments concerned.

9- Madras asked that the share of each Government in this partial allocation should be 75 Thousand Million Cubic Feet. Hyderabad could not see their way to agree to an allocation of more than 65 Thousand Million, Cubic feet immediately. It was agreed that the raising of the figure of 65 Thousand Million Cubic Feet will be examined after ten years from now or such later date as the two Governments may agree to, considering the needs of the projects.

6. Madras first claimed the low flows up to their requirements for the Tungabhadra and Kistna irrigation, but later agreed to forego this claim in the present arrangement, the needs of such irrigation being provided for by regulated supplies from the reservoir.

7. The contribution to the Kistna will be met by regulated supplies from the reservoir and such waters can be utilized to develop power both by Hyderabad and Madras but will not be debited to the 65 Thousand Million Cubic Feet mentioned in paragraph 4 above.

8. It will be left to the option of the respective Governments to supply through the existing head-slues in the river or otherwise the pre-Moghul channels.

9. Natural flow in the river below the Mallapuram reservoir i.e., floods from the reservoir, flow from intermediate catchment and separate into the Tungabhadra river, can be utilised by Madras and Hyderabad for pre-Moghul irrigation in Madras and Hyderabad and also for irrigation under the Rajolibunda canal of Hyderabad and the Kurnool Cuddapah Canal of Madras. These waters realised at the points of diversion will be drawn to the limit of their requirements in the Pre-Moghul channels at the point of diversion of the Rajolibunda Canal the natural flow will be divided half and half between Madras and Hyderabad after making an extra allowance to the Rajolibunda Canal equivalent to the additional draw-off of pre-Moghul channels of Hyderabad.

10. If either Government use the river for carrying water down to any lower point on the river, such Government shall retain their proprietary right in those waters.

11. Madras and Hyderabad are prepared to have the dam constructed to impound a sufficient quantity for a larger eventual utilisation than now agreed to, and to bear half the cost of such construction.

12. Madras and Hyderabad need not restrict their canal capacities to utilise their present of 65 Thousand Million Cubic Feet each. In designing then for larger capacities each Government take their own risk.

13. So far as this Conference goes, it has been conducted in order to facilitate a joint partial scheme between Hyderabad and Madras without prejudice to the rights and interests of the other Governments concerned.

14. The following matters will be subject to examination by the Chief Engineers of Madras and Hyderabad who will arrive at a common settlement which will be subject to ratification by the two Governments:-

- (a) Whether it is necessary to provide one set or more of sluices, on each side for the requirements of new irrigation, old irrigation and for contribution to the Kistna.
- (b) To fix full reservoir level and sills of sluices and also the minimum level below which water may not be allowed to go down, no party being entitled to ask for a higher level to be maintained at any time, when once the minimum level is fixed.
- (c) To determine, the contribution to the Kistna and the period over distributed keeping in view the requirements of irrigation and development of seasonal power for not less than six months.
- (d) To determine, the apportionment between the two Governments of the contribution to the Kistna to be drawn for power purposes giving some weightage to Hyderabad for the reason that at present such water will be used only for power by Hyderabad and for power and irrigation by Madras. This weightage is to apply until a Kistna reservoir comes to function.
- (e) To examine and give their views as regards the estimate of the dependable supply at Mallapuram now put at 336 Thousand Million Cubic Feet.
- (f) To examine and give their views as regards the extra, allowance to be given to the Rajolibunda canal from the natural flow of the river at Rajolibunda anicut as per paragraph 9 above fixing on a percentage basis the allocation of natural flow at Rajolibunda anicuts between Madras and Hyderabad.

Sd/  
(S.V.RAMAMURTHY)  
Representative, Govt. of Madras  
Dated 26<sup>th</sup> June, 1944.

Sd/  
( ALI NAWAZ JUNG )  
Representative, His Exalted Highness, the Nizam's Govt.  
Dated 26<sup>th</sup> June, 1944.

**AGREEMENT BETWEEN THE REPRESENTATIVES OF THE GOVERNMENTS OF MADRAS AND MYSORE IN REGARD TO THE SHARING OF THE WATERS OF THE TUNGABHADRA.**

July 1944

WHEREAS the Government of Madras propose to construct a reservoir on the Tungabhadra beyond the territory of Mysore;

AND WHEREAS the Government of Mysore also propose to construct reservoir near Lakkavalli or at any other place on the Bhadra (hereinafter referred to as the Lakkavalli Reservoir) a "Tributary of the Tungabhadra;

AND WHEREAS the Governments of Madras<sup>63</sup> and Mysore<sup>64</sup> consider it necessary and expedient to come to a settlement INTER-SE in regard to the sharing of the waters of the Tungabhadra Basin above Mallapuram;

AND WHEREAS the question of the sharing of the waters of the Tungabhadra Basin between the Governments of Madras and Mysore and the question relating to Sivasamudram royalty payable by the Government of Mysore to the Government of Madras were discussed by the representatives of both the Governments at Fort St. George, Madras on 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> December, 1936;

AND WHEREAS the Governments of Mysore and Madras have come to a mutual settlement in regard to the sharing of the waters of the Tungabhadra Basin above Mallapuram and in regard to the amount of royalty paid to the Government of Madras in respect of the utilisation of their share of the waters in the Cauvery at Sivasamudram by the Government of Mysore for power purposes;

AND WHEREAS the waters of the Bhadra and Tungabhadra were joint gauged by the representatives of the Governments of Madras and Mysore at Lakkavalli, Mallapuram and Sunkesala anicut.

AND WHEREAS as a result of the said gauging and discussion the dependable flow at Mallapuram after meeting the requirements of existing irrigation above Mallapuram was agreed to as 3,40,000 M.c.ft.

NOW THESE PRESENTS witness that His Excellency the Governor of Madras and the Government of Mysore do hereby agree<sup>65</sup> and bind themselves, their successors and representatives as follows:

**PART I**

**RELATING TO "SHARING OF THE WATERS OF THE TUNGABHADRA"**

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<sup>63</sup> For this agreement erstwhile Andhra Pradesh and Tamilnadu are successor Sate to Madras.

<sup>64</sup> Mysore is now part of Karnataka.

<sup>65</sup> This agreement has been superseded by Decision of KWDT-1976.

1. From the total yearly flow of the Bhadra river at Lakkavalli, the Government of Mysore shall be entitled to draw off through sluices a quantity of water not exceeding 57,000 M.c.ft. nett for irrigation and power purposes from the Lakkavalli Reservoir. The Reservoir shall be of such capacity as may be agreed upon between the two Governments and as is necessary to enable the Government of Mysore to draw off annually through sluices 57,000 M.c.ft. referred to herein and the additional quantity referred to in Clause 6.

The Government of Mysore shall not be entitled to draw any supply for any purpose at any other point on the Bhadra river save and except the Government of Mysore may draw off water -

(a) for supply to factories and towns from the said rivers;

(b) at the existing Bhadra anicut for the irrigation of an area not exceeding 20,800 acres inclusive of the area now irrigated from the anicut.

Neither the existing Bhadra anicut nor its scouring sluices nor the headsluices for the right and left bank channels shall be altered in any manner save with the previous consent of the Government of Madras, which consent shall not be unreasonably withheld or refused.

Nothing in this clause shall be deemed to affect the rights of the riparian land owners to take water to which they may be entitled under the law.

2. The Government of Madras agree to the Government of Mysore increasing the capacity of the Lakkavalli Reservoir beyond the limit permissible under clause I in order to enable the Government of Mysore to have additional storage solely for power purposes the supply required for such purposes being drawn off through the sluices; but such additional storage shall be returned without diminution (except diminution by reason of evaporation and percolation) within the same year to the river Bhadra below the existing Bhadra anicut through sluices or in such other manner as may be mutually agreed upon by the Governments of Madras and Mysore and in accordance with the working tables and rules of regulation approved by the Chief Engineers of the two Governments.

3. The Government of Mysore agree to furnish full details of the works proposed to be executed by them in pursuance of Clauses 1 and 2 together with the rules of regulation proposed for the new reservoir to the Government of Madras, and obtain their specific consent to such execution and to those rules before starting such works and the said consent shall not be unreasonably withheld or refused.

4. The Government of Mysore also agree to prepare and furnish to the Government of Madras detailed working tables showing how the Government of Mysore propose to give effect to Clauses 1 and 2 and the rules of regulation referred to in Clause 3. Separate working tables shall be prepared to show:

(a) the capacity of the reservoir required to ensure to the Government of Mysore and the draw off of 57,000 M.c.ft., referred to in Clause 1 and the additional quantity referred to in Clause 6;

(b) the capacity required in addition to ensure to the Government of Mysore, their power requirements according to clause 2.

If when working tables are drawn up, it is found that the supplies to existing irrigation as it stood in 1936 below Lakkavalli Reservoir would be adversely affected by the draw off for irrigation or power purposes under Clause 1 or Clause 2, the working tables and rules of regulation shall be so revised as to provide for passing such flow, limited to the natural flow, down the river as may be necessary to safeguard the interest of such existing irrigation as well as to ensure the draw off for the Lakkavalli Reservoir as provided in this agreement.

The Chief Engineers of the Governments of Mysore and Madras will prepare the working tables after such examination as may be necessary and come to a common speedy settlement in the matter of proportion factors, rules of regulation, monthly limit flows, etc., which will be subject to ratification by the two Governments and on such ratification, such settlement shall be deemed to form part of this Agreement.

5. The Government of Mysore further agree that immediately the draw off from the Lakkavalli Reservoir mentioned in Clause 1 begins, issues from the reservoir shall conform to the working tables mentioned in Clause 4.

6. The Government of Mysore shall also be permitted to draw off all other new irrigation (including extension to existing irrigation) in the Tungabhadra Basin above Mallapuram besides the water which the Government of Mysore may draw off at the existing Bhadra Anicut (under Clause I) a total quantity of water not exceeding 15,000 M.c.ft. (evaporation losses being included in this quantity only in the case of tank and reservoir schemes) in the aggregate in the year, provided that such draw off shall not take place from the Bhadra. Nothing in this clause shall be deemed to effect the rights of the Government of Mysore to draw off water for factories and towns from the water courses in the Tungabhadra Basin or the rights of the riparian land owners to take water to which they may be entitled under the law.

The Government of Madras note that the Government of Mysore have already prepared a scheme for utilising not more than 11,500 M.c.ft. from an anicut to be constructed across the Thunga near Sacrebyle. The Government of Mysore will be at liberty to proceed with this scheme and the quantity of water drawn off at the anicut shall count towards the 15,000 M.c.ft. hereinmentioned. In the event of the Government of Mysore not utilising the 11,500 M.c.ft. for the above scheme the Government of Mysore shall be at liberty to utilise the unutilised quantity for schemes in the minor valleys in the Tungabhadra Basin. Such utilised quantities shall include evaporation losses.

Full details of every other scheme proposed to be executed by the Government of Mysore for the draw off of the remaining quantity shall be furnished to the Government of Madras and their specific consent obtained before work is started on the scheme. In framing such schemes the interest of all existing irrigation in the respective valleys extending upto the Tungabhadra river shall be fully safeguarded.

In the event of the Government of Mysore being unable for any reason to frame such scheme for valleys other than the Bhadra Valley in the Tungabhadra Basin above Mallapuram, or if the Government of Madras should withhold or refuse consent to any such scheme, the Government of Mysore shall be permitted to draw off from the Lakkavalli Reservoir a quantity of water not exceeding 3,500 M.c.ft. (including evaporation losses) out of the utilised quantity of the said 15,000 M.c.ft. This draw off shall be in addition to the 57,000 M.c.ft. referred to in Clause 1.

7. The means and methods of measuring all inflows, issues, draw off, and the like at any of the works authorised by the Clauses 1 and 2 or by Clauses 6 shall be settled by the Chief Engineers of

the Governments of Madras and Mysore before such works are started.

8. For the purpose of this Agreement "the year" shall commence on such dates as may be fixed by mutual agreements between the Chief Engineers of the Governments of Madras and Mysore, after working tables for such years as may be agreed upon by the two Chief Engineers have been drawn up and approved by them.

9. After the draw off to which the Government of Mysore is entitled under Clauses 1 and 6 after making an allowance of 12,000 M.c.ft. for miscellaneous irrigation above Mallapuram there will be available at Mallapuram an estimated supply of 226,000 M.c.ft. in respect of which the Government of Mysore do not claim any share as against the Government of Madras.

10. The Governments of Mysore and Madras agree that so far as they are concerned, the foregoing clauses shall constitute a final settlement of the rights of the respective Governments in the waters of the Tungabhadra basin above Mallapuram.

If at any time at the instance of any other party claiming a right to the waters of the Tungabhadra it becomes necessary to have recourse to arbitration in respect of the sharing of the Tungabhadra waters and if the arbitration tribunal were to award to the Governments of Mysore and Madras a quantity differing from those referred to in Clauses 1, 6 and above, the two Governments hereby agree to abide by such award.

The Government of Madras agree that the Sivasamudram royalty of Rs.20,000 per annum now agreed to vide Part II of this Agreement shall not in any circumstances be reopened or revised.

11. Nothing contained in the foregoing clauses shall be deemed to qualify or limit in any manner the operation of the Agreement dated the 18th February, 1892 between the Governments of Madras and Mysore in regard to matters other than those to which this Agreement relates.

12. The Government of Madras and the Government of Mysore hereby agree that if at any time there should arise any dispute between them touching the interpretation or operation or carrying out of this Agreement such dispute shall be referred for settlement by two Arbitrators, one to be appointed by each Government and in case of differences of opinion between the Arbitrators the matter shall be referred to an umpire appointed by both the Governments.

## PART II

### RELATING TO THE SIVASAMUDRAM ROYALTY

13. In consideration of Government of Mysore agreeing to the foregoing clauses in Part I, the Government of Madras agree, in modification of the terms accepted by the Government of Mysore in their letter No.150-D.C, dated 26<sup>th</sup> May, 1900 regarding the royalty payable by the Government of Mysore for the utilisation of the waters of the Cauvery falls at Sivasamudram for the generation of electrical power to accept (in lieu of the payment Rs.5 per electric horse power per annum for half the total water power utilised) a consolidated sum of Rs. 20,000 per annum with effect from the date of the expiry of the previous agreement.

Provided always that any water diverted from the river above falls for the generation of power shall be returned to the river below Falls without being fouled or diminished in quantity as explained in letter No.4221.221-302-94 dated 24<sup>th</sup> August 1900 from the First Assistant to the Hon'ble the Resident to the Diwan and that the other terms and conditions of the previous agreement

namely, those contained in sub-paragraphs (iv) and (v) of paragraph 3 of the Government of Mysore's continue to remain in full force.

Other terms and conditions referred to:

- " (iv) that a cessation on the part of the Durbar to utilise the water of the Falls for the generation of electrical power for two years shall operate to terminate the agreement.
- (v) that for the purpose of the power works the Durbar to be vested with the control over the discharge in the river and its branches at and above the Falls and to be permitted to build two low dams, subject to the following stipulations:
- (a) that the Durbar shall not restrict or interfere with the amount of water for irrigation or other purposes to which amount the Jagirdar of Sivasamudram may be legally entitled; and
- (b) that the Durbar shall reimburse and make good to the Madras Government all loss or damage which under the decision of a competent Civil Court may secure in consequence of the Durbar's operations through the infringement of the legal rights of private persons.

Sd/-  
27.7.1944  
(G.W.PRIESTLEY)  
Representative  
Government of Madras

Sd/  
( N. MADHAVA RAO )  
Representative  
Government of Mysore



**SUPPLEMENT<sup>66</sup> TO 1944 AGREEMENT EXECUTED IN DECEMBER 1945 BY THE REPRESENTATIVES OF GOVERNMENTS OF HYDERABAD, MYSORE, MADRAS AND INDIA.**

A. Mysore may proceed with the construction of the Sacrebyle anicut on the Tunga river subject to the condition that pending the construction of the Tungabhadra Dam, Mysore shall not extract supplies from the Tunga at the Sacrebyle anicut during low flow period when such extraction is likely to adversely affect the existing pre-Moghul irrigation. To ensure that the spirit of this clause is complied with regulation rules in this respect shall be framed by the Chief Engineers of the three Governments.

B. With regard to allowance for the rights of the Government of Mysore to draw off water for factories and towns from the water course in the Tungabhadra basin or the right of the riparian land owners to take water to which they may be entitled under the law or for the minor tanks in the Tungabhadra basin Hyderabad agrees to a specific figure limited to 4,000 M.c.ft. of water.

C. Regarding the quantity of 57,000 M.c.ft. exclusive of evaporation losses at the Lakkavalli reservoir under Clause (1) of the Mysore-Madras Agreement, Hyderabad does not commit herself either way to its acceptance, or otherwise and shall be free to act under Clause (10) sub-para (2) of that agreement. Subject to the above, Hyderabad does not object to the construction of the Lakkavalli reservoir.

D. The extension of irrigation from the existing Bhadra Anicut provided for under Clause (1) (b) of the Madras-Mysore Agreement, shall be permitted to subject to the same condition as laid down for the irrigation from the Sacrebyle scheme, mentioned under (A) above.

E. The Governments of Hyderabad, Madras and Mysore recognise the claims of Sangli, Bombay and any other riparian areas (excluding those of Mysore, Madras and Hyderabad which are already covered by the two Agreements between Madras and Hyderabad and Madras and Mysore) to an equitable share of waters which shall be decided by a tribunal set by the Government of India for the purpose of final apportionment of the Tungabhadra water between all the interested parties. Further the three Governments agree that the schemes under the two Agreements mentioned above are not intended to prejudice in any way the claims of Bombay, Sangli, etc.

F. In clause (2) of Madras-Mysore Agreement substitute "Below" for "Above" in the sentence" .....river Bhadra above the existing Bhadra Anicut  
....."

Sd/  
( ALI NAWAZ JUNG )

Sd/  
( A.N. KHOSLA )  
24.12.1945

Sd/-  
( S .M. YUNUS )  
24.12.1945

Sd/- 27.12.1945  
( M. NARASIMHAIYA )  
Chief Engineer for  
Irrigation (Mysore).

Sd/-  
26.12.1945  
A.R.VENKATACHARI  
Chief Engineer for  
Irrigation (Madras)

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<sup>66</sup> This agreement has been superseded by Decision of KWDT-1976.

**SUPPLEMENTAL AGREEMENT<sup>67</sup> OF 1946 AMONG MADRAS, MYSORE AND HYDERABAD**

No.15/2/45-G.G.(A)  
SECRETARIAT OF THE GOVERNOR-GENERAL (PUBLIC)

From

Rao Bahadur V.P.Menon, C.I.E.,  
Secretary to the Governor General (Public).

To

The Secretary to the Government of Madras,  
Public Works Department.

New Delhi 3, the 23<sup>rd</sup> April, 1946

SUBJECT:- Agreement between the Madras, Hyderabad and Mysore Governments on the distribution of the waters of the Tungabhadra River.

Sir,

I am directed to invite a reference to your letter No.495-D/45-9, dated 31<sup>st</sup> January, 1946 on the above subject, and to forward a copy of Supplements I and II to the Madras-Mysore and the Madras-Hyderabad Agreements which were agreed to by technical representatives of the three Governments in December last.

2. The following minor verbal changes were proposed by His Exalted Highness the Nizam's Government for incorporation in the Madras-Mysore Agreement, and are understood to have been accepted by the Government of Madras and Mysore:- (1) In Sub paragraph 2 of the preamble, the word "near" should be substituted for the word "at" before "Lakkavalli" and the words "or at any other place" should be deleted after "Lakkavalli"; and (2) In Sub-paragraph 2 clause 10 after the words "other party" the words "such as Hyderabad" should be inserted.

3. Attention is also invited to an alteration in Clause (2) of the Madras-Mysore Agreement, which is understood to have been proposed by the Government of Madras and accepted by the Mysore Government, viz., the substitution of the word "below" for the word "above" in the phrase reading "river Bhadra above the existing Bhadra anicut".

4. The Government of Bombay and the Sangli Durbar have also been consulted on the terms of the agreement, and their concurrence obtained.

5. I am now to invite the Government of Madras to ratify the agreement and to request that this ratification may kindly be communicated to me at a very early date. His Exalted Highness the Nizam's Government and the Government of Mysore are also being addressed with a view to their ratification being obtained.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/

( V. P. MENON )

Secretary to the Governor General (Public)

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<sup>67</sup> This agreement has been superseded by Decision of KWDT-1976

Suplement-I (Page 1)

A. Mysore may proceed with the construction of the Sacrebyle anicut on the Tunga river subject to the condition that pending the construction of the Tungabhadra Dam, Mysore shall not extract supplies from the Tunga at the Sacrebyle anicut during low flow period when such extraction is likely to adversely affect the existing pre-Moghul irrigation. To ensure that the spirit of this clause is complied with regulation rules in this respect shall be framed by the Chief Engineers of the three Governments.

B. With regard to allowance for the rights of the Government of Mysore to draw off water for factories and towns from the water course in the Tungabhadra basin or the right of the riparain land owners to take water td which they may be entitled under the law or for the minor tanks in the Tungabhadra basin Hyderabad agrees to a specific figure limited to 4,000 M.c.ft. of water.

C. Regarding the quantity of 57,000 M.c.ft. exclusive of evaporation losses at the Lakkavalli reservoir under Clause (1) of the Mysore-Madras Agreement, Hyderabad does not commit herself either way to its acceptance, or otherwise and shall be free to act under Clause (10) sub-para (2) of that agreement. Subject to the above, Hyderabad does not object to the construction of the Lakkavalli reservoir.

D. The extension of irrigation from the existing Bhadra Anicut provided for under Clause (1) (b) of the Madras-Mysore Agreement, shall be permitted to subject to the same condition as laid down for the irrigation from the Sacrebyle scheme, mentioned under (A) above.

E. The Governments of Hyderabad, Madras and Mysore recognise the claims of Sangli, Bombay and any other riparian areas (excluding those of Mysore, Madras and Hyderabad which are already covered by the two Agreements between Madras and Hyderabad and Madras and Mysore) to an equitable share of waters which shall be decided by a tribunal set by the Government of India for the purpose of final apportionment of the Tungabhadra water between all the interested parties. Further the three Governments agree that the schemes under the two Agreements mentioned above are not intended to prejudice in any way the claims of Bombay, Sangli, etc.

F. In clause (2) of Madras-Mysore Agreement substitute "Below" for "Above" in the sentence" .....river Bhadra above the existing Bhadra Anicut ....."

Sd/  
( ALI NAWAZ JUNG )

Sd/  
( A.N. KHOSLA )  
24.12.1945

Sd/-  
( S .M. YUNUS )  
24.12.1945

Sd/- 27.12.1945  
( M. NARASIMHAIYA )  
Chief Engineer for  
Irrigation (Mysore).

Sd/-  
26.12.1945  
A.R.VENKATACHARI  
Chief Engineer for  
Irrigation (Madras)

Supplement-II (Page 5)

Regarding the Madras-Hyderabad Agreement the question raised by Mysore in respect of safeguarding her irrigation interest in the Vedavati Basin does not concern Hyderabad and should therefore be settled between Madras and Mysore.

Sd/  
( ALI NAWAZ JUNG )

Sd/-  
(S.M. YUNUS)  
21.12.45

Sd/  
NARASIMHAIYA )  
C.E. for Irrigation, Mysore  
27.12.45

Sd/-  
(A.R.VENKATACHARI)  
C.E. for Irrigation,  
26.12.45

Sd/  
( A. N. KHOSLA )  
24.12.45

Enclosure to Supplement I and II (Page 6)

On the Memorandum of Hyderabad relating to Vedavati, Madras would agree to the following remark provided Mysore agrees too:

The agreement between Madras and Hyderabad does not affect the rights of Mysore or Madras in regard to the utilization of the waters of the Vedavati.

On the main Memorandum of six paragraphs A to F it is provisionally agreed to and:

We agree to the Memorandum subject to the remark that as regards paragraph F of the Memorandum, Madras would agree provided Mysore agrees to let down the water into the river not lower than just below the Bhadra Anicut.

Sd/-26.12.45  
( A.R. VENKATACHARI )  
Cheif Engineer, Irrigation  
Madras

Sd/-27.12.45  
( A.N. KHOSLA )  
Chief Engineer to the  
Government of India

Sd/  
( M. NARASIMHAIYA )  
Chief Engineer for Irrigation  
Mysore 27.12.45  
27-1 DD/CWC/79

Sheet III (Page 7 )

With regard to the technical details for settlement provided under clause (14) of the Madras-Hyderabad Agreement, Hyderabad requests very early action with a view to settlement of these details without which there will be the possibility of delays at different-stages of the project.

Sd/  
( ALI NAWAZ JUNG )

Sd/- 24.12.45  
( A. N. KHOSLA )

Sd/ 24.12.45  
(S.M. YUNIS)

Sheet IV (Page 8)

Hyderabad reiterates her request for the setting up of a tribunal for the final apportionment of the Tuhgabhadra waters and requests for a very early action in this respect.

Sd/  
( ALI NAWAZ JUNG )

Sd/- 24.12.45  
( A.N. KHOSLA )

Sd/- 24.12.45  
( S.M. YUNUS)

( PLANNING COMMISSION)  
NATURAL RESOURCES DIVISION

A copy of the Summary Record of the Proceedings of the Inter-State Conference on the Tungabhadra High Level Canal held at Residency Building, Bangalore on 18th June, 1956 is forwarded herewith.

Sd/- 3.7.1956  
( S. SWAYAMBU )  
Chief, Natural Resources Division

PLANNING COMMISSION

Adviser (Shri Nawab Singh)

Adviser (Shri Ramamurty) JS(PC)

CENTRAL WATER AND POWER COMMISSION

Shri Kanwar Sain, ISE, Chairman (3 copies)

Shri George Ommen, Director (Dam Designs)

MINISTRY OF IRRIGATION AND POWER

Shri Ripudaman Singh, I.S.E.,

(with 3 copies)

MINISTRY OF HOME AFFAIRS

Shri Hari Sharma

GOVERNMENT OF ANDHRA PRADESH

Shrii V.V. Subramaniam, I.C.S.,

Secretary, P.W.D. (3 copies)

GOVERNMENT OF MYSORE

Shri D.K. Srinivasachar, I.A.S.,

Secretary, P.W.D. (3 copies)

PLANNING COMMISSION CIR.U.O.No.PC(V)/II(4) (1)/56 DATED 3.7.1956.

**SUMMARY RECORD OF THE PROCEEDINGS OF THE INTER-STATE CONFERENCE  
ON THE TUNGABHADRA HIGH LEVEL CANAL HELD AT RESIDENCY BUILDING,  
BANGALORE ON 18<sup>th</sup> JUNE, 1956**

The conference was held under the chairmanship of Shri V.T. Krishnamachari, Deputy Chairman, Planning Commission, and the following participated:-

GOVERNMENT OF ANDHRA PRADESH

1. N.Sanjeeva Reddy, Deputy Chief Minister of Andhra
2. Shri . V.V.Subramaniam, , I.C.S., Secretary, P.W.D
3. Shri L.Venkatakrishna Iyer, I.S.E., Sepecial Chief Engineer for Irrigation.

GOVERNMENT OF MYSORE

1. Shri Kadilal Manjappa, Minister for Revenue and Public Works
2. Dr. R. Nagan Gowed, Minister for Agriculture.

3. Shri D.K.Srinivasachar, I.A.S., Secretary, P.W.D
4. Shri Balasubramaniam, Secretary, Planning.
5. Shri Ananthachar, Chief Engineer.
6. Shri D'Sa, Chief Electrical Engineer.

#### GOVERNMENT OF INDIA.

1. Shri Kanwar Sain, I.S.E., Chairman, Central Water and Power Commission, New Delhi.
2. Shri S.Swayambhu, Chief, Natural Resources Division.
3. Shri Ripudaman Singh, I.S.E., Deputy Secretary, Ministry of Irrigation and Power, Delhi.
4. Shri Geogre Ommen, Director (Darn Designs), Central Water and Power Commission, New Delhi.

#### TUNGABHADRA BOARD

- 1 Shri B.K.Gokhale, I.C.S.(Retd.), Chairman, Tungabhadra Board
- 2 Shri A.R.Venkataraman, I.S.E. Chief Engineer (Irrigation Branch) and Secretary,  
Tungabhadra Board

Opening the discussion, the Deputy Chairman invited reference to the provisions regarding the High level Canal in the States Reorganisation Bill. He stressed the need for an agreement between the parties so that work could start urgently.

2. Shri Kanwar Sain made a brief Comment on the Central Water and Power Commission's technical report which was circulated earlier as a basis for the sharing of waters. On page 9 he pointed out a correction to the factor  $6 + \frac{2}{3}$  (6.66) which should be changed to 8.2 and that as a consequence the share of water would become 30 : 70 instead of 28 : 72 for Mysore and Andhra.

3. The Deputy Chairman then enquired from the State Engineers what would be the quantity of water available for release through the High Level Canal. The Chief Engineers of both Mysore and Andhra stated that a figure of 50,000 million cubic feet would be a reasonably correct estimate and this was also confirmed by Shri A.R.Venkataraman. It was however agreed that allowing for some marginal adjustment, the availability could be taken to be in the range of 45 T.M.C.ft. .

4. After exchanges of views, it was unanimously agreed that the waters of the High level canal should be shared in the ratio of 35:65 between Mysore and Andhra.

In regard to the implementation of the scheme, it was agreed that the execution of all the common works in respect of the High Level Canal should be undertaken by the Tungabhadra Board and that the Chief Engineer of the Board should undertake immediately the planning and design of the canal with such changes as may be required as a result of the sharing now agreed to. In doing this the Chief Engineer or the Board should act as the convenor and evolve the designs in close consultation with the Chief Engineers of Andhra and Mysore.

It was also agreed<sup>68</sup> that the sharing of the cost of the common works of the canal should generally be on cuse-cmle basis.

5. Shri V.T. Krishnamachari congratulated the representatives of the two States on the spirit of accommodation shown by them. He observed that the preliminary works should be taken in hand as early as possible with a view to utilising fully the services of the staffs with the Tungabhadra Board.

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<sup>68</sup> This agreement is no longer in use in view of decision of KWDT-1976.

**CONCLUSIONS REACHED AT INTER-STATE CONFERENCE OF CHIEF MINISTERS AND MINISTERS IN CHARGE OF IRRIGATION AND POWER OF ANDHRA PRADESH AND MYSORE HELD AT HYDERABAD ON THE 25<sup>th</sup> FEBRUARY, 1959.**

**PRESENT**

**ON THE ANDHRA PRADESH SIDE:**

Sri N. Sanjeeva Reddy,  
Chief Minister of Andhra Pradesh,  
Sri J.V. Narsinga Rao,  
Minister for Irrigation & Power,

Sri V.R. Rao, I.C.S.,  
Secretary to the Government,  
Public Works Department,

Sri L. Venkatakrishna Ayyar, I.S.E.,  
Special Chief Engineer, Irrigation.

Sri A. R. Venkataraman, I.S .E.. ,  
Special Chief Engineer, Irrigation.

Sri S.A. Quader, M.I.E.,  
Chief Engineer for Electricity.

**ON THE MYSORE SIDE:**

Sri B.D. Jatti,  
Chief Minister of Mysore .  
Sri H.M. Channabasappa,  
Minister for Public Works Department.

Sri M.N. Naghnoor,  
Deputy Minister for Public Works Department.

Sri D.K. Srinivasachar, I.A.S.,  
Secretary to Government, Public Works Department.

Sri J.L. D'sa, B.Sc., (Hons), AMIEE. Chief Engineer,  
Mysore State Electricity Board.

Sri H. V. Narayana Rao, B. Sc., (Lond), Chief Engineer,  
Hydro Electric Construction Projects.

Sri. G.S. Ganapathy, C.E.,  
Chief Engineer,(General).

Sri L.C. J Uniswamy Reddy, B.A., B. E.,  
Chief Engineer, Major Irrigation (North).

**ON THE TUNGABHADRA BOARD SIDE:**

Sri B.K. Gokhale, I.C.S., (Retd.),



Chairman.

Sri G.N. Pathak, I.A.S., Secretary .

1. Tungabhadra Project: Allowance-Project Allowances: and amenities -Sanction of - Regarding.

The agreed conclusion reached at the Interstate Conference of Secretaries to the Governments of Andhra Pradesh and Mysore and the decision of the Tungabhadra Board to the effect that the existing Projects allowances and amenities may be continued for the time being were noted.

2. Tungabhadra Project Division of Liabilities under the common portion of the Low Level Canal.

As no agreement could be reached in regard to the basis for apportioning the liability, it was decided to refer the matter to the Government of India for a decision.

3. Tungabhadra Project - Division of assets under common portion of the Low level Canal.
4. Sharing of the cost of distributaries of the Tungabhadra Low Level Canal.

As a decision on these subjects depends on the decision in regard to subject No. (2) viz., division of liabilities under the common portion of Low Level Canal the decision of the Governments of India on the latter subject will be awaited and the basis of that decision will be made applicable to these case also.

5. Cost of compensation under River diversion pertaining to Tungabhadra project - Headworks sharing by the former Government of Hyderabad (Present Government of Mysore) and the Board.

The following conclusions reached at the Inter-State Conference of Secretaries to the Government of Andhra Pradesh and Mysore were ratified:

(i) the expenditure incurred on the river diversion works sides of the river as certified by audit should be pooled together equally between the Board on one side and the Government of Mysore on the other:

(ii) the expenditure as certified by audit, on account of acquisition of land in the Districts of Bellary, Raichur and Dharwar due to the formation of the Tungabhadra Reservoir should be pooled together and shared equally between the Board on one side and the Government of Mysore on the other; and

(iii) the expenditure as certified by audit on account of the rehabilitation of persons affected by the formation of the Tungabhadra Reservoir should be pooled together and shared equally between the Board on one side and the Government of Mysore on the other.

The two representatives further agreed that whatever sums have been spent on account of rehabilitation of the Munirabad side of the Project but have not been charged to the funds of the Project on that side, and whatever expenditure is incurred in future in that manner, should be added to the cost of the rehabilitation on account of the Tungabhadra Project, (Left side) for purposes of determining the total cost on this account.

6. Closure of the Low Level Canal-splitting up into two periods.

The agreed conclusion reached at the Inter-state Conference of Secretaries to the effect that the matter may be remitted to the Tungabhadra Board for decision, was noted.

7. Scheme for the future set up for the Tungabhadra project workshop.

It is agreed that the Tungabhadra project workshop be taken over and managed as a Joint venture of the two State Governments in the form of a Corporation registered under the Companies Act, providing for

(i) an authorised capital of Rs. 2 crores, an issued capital of Rs. 50 lakhs, and a subscribed capital which will cover roughly the existing assets, the two State Governments subscribing in equal proportion:

(ii) the appointment of the Board of Directors with an equal of Directors from each of the participating States, the appointment of the Chairman from among the Directors by the Government of Andhra Pradesh and the appointment of the Managing Director from among the Directors by the Government of Mysore , and

(iii) a suitable delegation of powers to the Managing Director on the lines generally of the Central Government Industries like Hindustan Machine Tools, Bharat Electronics, etc.

It was further agreed that action be taken to bring the corporation into existence as early as possible, and that in the meantime questions arising for decision such as labour disputes, etc. be dealt with on the basis of the arrangement agreed to already by the Government of Andhra Pradesh in Andhra Pradesh Chief Minister's Letter No. 1741/1/ 57 - 1, dated 24.10.1958 addressed to the Chief Minister of Mysore.

8. Development of fisheries in the Tungabhadra Reservoir.

It was decided that as agreed to at the Inter-State Conference of Secretaries, the cost on account of the development of fisheries and revenue derived therefrom be shared, without prejudice to the Interests of either the Government of Andhra Pradesh or the Government of Mysore, by the Government of Mysore and Andhra Pradesh in ratio of 13:5 for a period of 2 years beginning with the financial year 1958-59 and that this ratio be reviewed at the end of that period.

9. Tungabhadra Hydro Electric Scheme-Division of Assets and Liabilities adjustment due to change in the ratio power utilised by the participating states from the date of commissioning of the first of the Sharavathi Project - Regarding.

The following decision reached at the Inter-State Conference of Secretaries was agreed to::

"It was agreed at the Inter-State Conference held in October, 1957 that the Power benefits from both the Stages of 'the Project be shared between the Governments of Mysore and Andhra Pradesh in the ratio of 1:3 until the first generating unit of the Sharavathi Hydro Electric project of Mysore is commissioned and that thereafter the ratio be altered to 1:4.

It was further agreed that assets and liabilities on account of both the stages of the development of power be allocated between the two states in the ratio in which the benefits are shared by them, and that necessary adjustments in regard to assets and liabilities be carried out in view of the fact that the ratio in which the benefits are shared will get altered.

"The question of this adjustment was discussed. It was agreed by the Representatives of the

two States that the Government of Mysore would pay to the Government of Andhra Pradesh interest at 5% and depreciation at 0.786% on 5% of the total capital outlay on the Tungabhadra Hydro Electric Scheme from the date the ratio 1:3 is effective till the first generating Unit of the Sharavati Hydro Electric Project of Mysore is commissioned. Subject to this adjustment, the capital and the revenue expenditure, incurred and to be incurred on both the Stages of the Power Development of the Tungabhadra Hydro Electric Scheme will be shared by the Government of Mysore and Andhra Pradesh in the ratio of 1:4."

10. Tungabhadra Dam and Bellary sub-station Transmission lines Transfer of control.

It was agreed that the 66 K.V. line and the ancillary telephone line between the Tungabhadra Dam and the Bellary sub-station be transferred to the Board subject to:-

(i) the Government of Mysore being allowed to run a carrier communication system on this Power line for their use,

(ii) the Government of Mysore being allowed to tap the power line, at their cost and with the concurrence of the Board at suitable points for supplying power in their area, where such tapping is technically feasible, and

(iii) the Board bearing the appropriate debit in regard to the cost of the lines if that has not ready been done.

11. Sharing of power generated between the Governments of Andhra Pradesh and Mysore Decision of the Inter-State Conference-Implementation of Regarding

The agreed conclusion reached at the Inter-State Conference of Secretaries that the change in the ratio of power benefits from 1:4 to 1:3 between the States of Mysore and Andhra Pradesh be effective from 6.10.1957 and be extended till the first generating unit of the Sharavathy Hydro Electric Project is commissioned for commercial use was ratified.

In regard to Bhairvanithippa project, bridge with essential approaches at Obalapuram site selected by the Government constructed by the Andhra Pradesh Government designs and specifications drawn up jointly chief Engineers of the two States.

**AGREEMENT AMONG THE GOVERNMENTS OF ANDHRA PRADESH, KARNATAKA  
AND MAHARASHTRA FOR SUPPLY OF 5 TMC EACH OF KRISHNA WATERS TO  
TAMIL NADU (APRIL, 1976)**

Considering the acute scarcity of drinking water for the Metropolitan City of Madras in Tamil Nadu and the limited water resources available to the State of Tamil Nadu to meet such requirement, the Governments of Maharashtra, Karnataka and Andhra Pradesh hereby agree to spare 5 TMC each out of their respective shares of the Krishna waters, that may be allocated finally by the Krishna Water Disputes Tribunal, to enable the Government of Tamil Nadu to draw 15 TMC of Krishna waters per annum from a convenient location, for water supply to Madras City.

The Officers of the Department of Irrigation, Government of India, the Irrigation Engineers of the three States and the concerned Officers of the Government of Tamil Nadu shall meet to decide the location from and the manner in which the Government of Tamil Nadu would draw waters for Madras City.

The expenditure to be borne by the Government of Tamil Nadu towards construction, maintenance and operation of storage works and conveyance system leading up to the point from where Tamil Nadu would draw 15 TMC of waters shall be decided between the State Governments concerned under guidance of the Officers of the Govt. of India where necessary.

Sd/-  
(B. J. KHATAL )  
Minister of Irrigation,  
Law & Judiciary  
Maharashtra 14-4-76

Sd/-  
(SUBASH ASTURE)  
Minister of State of  
Major Irrigation,  
Karnataka 14-4-1976

Sd/-  
(K.K.SHAH )  
Governor of Tamil Nadu  
14-4-76  
Maharashtra 14-4-76

Sd/-  
(JAGJIVAN RAM)  
Minister of Agriculture  
and Irrigation,  
Government of India  
14-4-1976

Subject to the reservation made in my letter  
D.O. No. 1914 Irr. V(I) 75-13 dated 17-4-76.

Sd/-  
(J.VENGALA RAO)  
Chief Minister  
Andhra Pradesh  
14-4-76

**AGREEMENT DATED 28<sup>th</sup> OCTOBER, 1977 AMONGST THE STATES OF ANDHRA PRADESH, KARNATAKA, MAHARASHTRA AND TAMIL NADUR REGARDING CONVEYING OF 15 T.M.C. OF KRISHNA WATERS FOR WATER SUPPLY TO MADRAS CITY**

Whereas an agreement was reached in April, 1976 that the Governments of Andhra Pradesh, Karnataka and Maharashtra will each allow the use of 5 T.M.C. of Krishna waters to Tamil Nadu for water supply to Madras City.

And whereas in pursuance of the said agreement various alternative schemes were formulated and their costs estimated by the officers of the concerned States and the Government of India.

The aforesaid studies were considered at a meeting convened by the Union Minister of Agriculture and Irrigation on 27<sup>th</sup> October, 1977, which was attended by the Chief Ministers of Karnataka, Tamil Nadu and Maharashtra and the Minister for Medium Irrigation of Andhra Pradesh, the Minister for Major Irrigation of Karnataka and the Minister for Works, Tamil Nadu under the Chairmanship of the Union Minister of Agriculture and Irrigation and the following decisions are taken.

(i) The Government of Tamil Nadu shall be permitted to draw not more than 15 T.M.C in a water year from Srisailem reservoir during the period of 1<sup>st</sup> July to 31<sup>st</sup> October through an open lined channel from Srisailem to Pennar designed to carry a discharge not exceeding 1500 cusecs which will enable conveyance of water to Madras City. The arrangements for the conductor system shall be agreed upon by Andhra Pradesh and Tamil Nadu.

(ii) The Government of Andhra Pradesh will co-operate in the acquisition of land and in providing necessary storages. Andhra Pradesh will also provide facilities for the construction of the canals and others structures and also for the maintenance and operation of the water supply system.

(iii) Tamil Nadu shall bear the cost of the arrangements for conveying of water from Srisailem to Poondi and will bear the maintenance and operational charges. The details can be worked out by the Governments of Andhra Pradesh and Tamil Nadu.

(iv) The lined channel between Srisailem and Somasila from the point of off-take to be agreed upon by Andhra Pradesh and Tamil Nadu shall not be utilised for irrigation or other consumptive purposes.

(v) The Central Government will make arrangements to inspect the system during operational stages and ensure that the withdrawal of water into this water supply system from Srisailem does not exceed 15 T.M.C. in a water year and that the system is utilised only for water supply to Madras City and for no other purpose.

This agreement is subject to formal ratification by the respective States.

Sd/-  
(M. GOPALAKRISHNAN)  
Secretary,  
Department of Irrigation  
and Power,  
Government of Andhra Pradesh

Sd/-  
(K.S. SHANKER RAO)  
Deputy Secretary  
Department of Irrigation,  
Government of Maharashtra

Sd/-  
(R.ANANDA KRISHNA)  
Commissioner & Secretary  
Department of Public  
Works & Electricity  
Government of Karnataka

Sd/-  
(B.VIJAYARAGHAVAN)  
Commissioner & Secretary  
Public Works Department,  
Govt. of Tamil Nadu

Sd/-  
(C.C.PATEL)  
Secretary to the Government of India,  
Ministry of Agriculture & Irrigation,  
(Department of Irrigation).

Dated: New Delhi, 28<sup>th</sup> October, 1977.

GOVERNMENT OF TAMIL NADU  
Letter No.18597/I.Spl/76-37, Public Works Department, Fort St. George, Madras-9  
Dated: 3<sup>rd</sup> November, 1977

From,

Thiru B. Vijayaraghavan, I.A.S.,  
Commissioner and Secretary to Govt.

To

The Secretary to the Government of India,  
Ministry of Agriculture & Irrigation,  
(Department of Irrigation) ,  
New Delhi.

Sir,

Subject: Krishna Waters.

I am directed to convey the concurrence of the Government of Tamil Nadu to the Agreement signed by the representatives of the States concerned at Delhi on the 28<sup>th</sup> October, 1977 in regard to the conveyance of 15 T.M.C. of Krishna Waters to Madras City.

Yours faithfully,

Sd/-  
for Commissioner & Secretary to Govt.

GOVERNMENT OF ANDHRA PRADESH  
From Hyderabad-500022  
Dated: 6-12-1977.  
M.Gopalakrishnan, IAS;  
Secretary to Government,  
Irrigation & Power Department.

Lr.No.4454-Irr.V.I/77/-

To  
The Secretary to the Government of India,  
Ministry of Agriculture & Irrigation,  
(Department of Irrigation),  
New Delhi -1.

Sub: - Supply of drinking water to Tamil Nadu- Agreement concluded on 28-10-1977 –  
Ratification -requiring.

Ref: - From the Govt. of India D.O. Lr. No. 5/25/73-WD, dated 14.11.77.

I am directed to invite attention to the reference cited and to state that the Government of Andhra Pradesh have ratified the Agreement concluded on the 28<sup>th</sup> Oct., 1977 at Delhi amongst the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu regarding conveying of 15 T.M.C. of Krishna waters for water supply to the Madras City, subject specifically to the condition that the terms of the agreement are confined only to the scheme of conveying 15 T.M.C. of water to Madras City with restrictions as to user applicable only between the agreed off-take point of the lined channel upto Somasila and that they do not in any way affect the rights of the States of Andhra Pradesh to utilise the waters of Krishna river for purposes of irrigation and other consumptive uses in any area and in any manner in conformity with the decision of the Krishna Water Disputes Tribunal.

Yours faithfully,

Sd/-  
Secretary to Government  
Irrigation & Power Dept.

#### GOVERNMENT OF KARNATAKA

B.C. ANGADI,  
Special Secretary to Government  
Irrgn. Department.

Vidhan Soudha, Bangalore  
Dated: 22nd Dec.1977.

D.O. No. PWD 22LCA 75

Dear Sri Khare,

Please refer to my letter no. D.O. PWD 153 SS 77 dated 24.11.77. I am desired to convey ratification of Government of Karnataka to the Agreement dated 28-10-77 amongst the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu regarding conveying of 15 T.M.C ft. of Krishna Waters for water supply to Madras City.

Yours Sincerely,  
Sd/-  
(B.C. ANGADI)

Sri S.B. Khare,  
Joint Secretary(GB), Govt. of India,

Ministry of Agriculture &  
Irrigation (Dept. of Irrqn.),  
New Delhi.

GOVERNMENT OF MAHARASHTRA

By Registered Post./A.D  
No. ISW 1077/7077-KG

V.R. Deuskar,  
Secretary

IRRIGATION DEPARTMENT  
MAHARASHTRA, Bombay-400032.

Dated the 27<sup>th</sup> Feb. 1978

To

The Secretary to the Government of India,  
Ministry of Agriculture and Irrigation,  
(Department of Irrigation),  
NEW DELHI.

Subject: Agreement amongst the States of Andhra Pradesh, Karnataka, Maharashtra and  
Tamil Nadu regarding conveying of 15 TMC of Krishna Water for water supply to  
Madras City.

Ref: D.O. Letter No. 5/25/73—WD dated the 14<sup>th</sup> November, 1977 from Shri S.B. Khare,  
Joint Secretary (GB), Government of India, Ministry of Agriculture and Irrigation.

Sir,

I have the honour to refer to the Agreement concluded on 28<sup>th</sup> October, 1977 at New Delhi amongst the States of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu (as per Photostat copy enclosed) regarding conveying of 15 TMC of Krishna waters for water supply to Madras City and to state that the Government of Maharashtra is hereby pleased to ratify the said agreement.

Yours faithfully,  
Sd/-

(V.R. DEUSKAR)  
Secretary to the Government of  
Maharashtra  
Irrigation Department  
Tel.No.291201

D.A.: A copy of Agreement

Copy together with a photostat copy of Agreement forwarded to:

- (i) the Secretary to the Government of Andhra Pradesh, Irrigation and Power Department, Irrum Manzil, Andhra Pradesh, Hyderabad.
- (ii) The Commissioner and Secretary to the Government, Public Works and Electricity Department, Government of Karnataka, Bangalore;
- (III) the Commissioner and Secretary to Government, Public Works Department, Government of Tamil Nadu, Madras; for information



**AGREEMENT ENTERED INTO BETWEEN THE GOVERNMENTS OF ANDHRA PRADESH AND TAMILNADU FOR DRAWAL OF WATER FROM RIVER KRISHNA FOR MADRAS CITY DRINKING WATER SUPPLY**

DATED: 18.4.83

Whereas considering the acute scarcity of drinking water supply for the Metropolitan city of Madras and the limited water resources available to the State of Tamil Nadu to meet such requirements, the Governments of Maharashtra, Karnataka and Andhra Pradesh agreed on the 14<sup>th</sup> April 1976 to spare 5 TMC each out their respective shares of Krishna waters, to enable the Government of Tamil Nadu to draw upto 15 TMC of Krishna Water per annum for water supply to the city of Madras;

And whereas it was thereafter agreed at a meeting convened by the Union Minister of Agriculture and Irrigation on the 27th October, 1977 and attended by the representatives of the States of Karnataka, Tamil Nadu, Maharashtra and Andhra Pradesh, that the Government of Tamil Nadu shall be permitted to draw not more than 15 TMC in a water year from Srisailem Reservoir during the period from 1<sup>st</sup> July to 31<sup>st</sup> October, through an open lined channel from the point of off-take to be agreed upon by the Governments of Andhra Pradesh and Tamil Nadu, between Srisailem and Somasila designed to carry a discharge not exceeding 1500 cusecs and that the arrangements for the conductor system shall be as agreed upon by the Governments of Andhra Pradesh and Tamil Nadu and that the Government of Tamil Nadu shall bear the cost of arrangements for conveying water from Srisailem Reservoir to Poondi and the maintenance and operation charges thereto;

And whereas the aforesaid 1977 agreement was subject to formal ratification by the respective State Governments;

And whereas the Governments of Karnataka, Tamil Nadu and Maharashtra had ratified the aforesaid 1977 agreement and the Government of Andhra Pradesh had ratified the agreement subject to the specific condition that the restrictions imposed in the agreement do not in any way affect the rights of the State of Andhra Pradesh to utilise the waters of Krishna River for purposes of Irrigation and other consumptive uses;

And whereas following the decisions above mentioned the Chief Ministers of Andhra Pradesh and Tamil Nadu met on the 15<sup>th</sup> June 1978 at Hyderabad and agreed to commence investigations on the above project and to get the progress of investigations monitored by a Liaison Committee:

And whereas the investigations carried out by the Governments of Andhra Pradesh and Tamil Nadu have established the technical feasibility of the project;

And whereas the Government of Andhra Pradesh have schemes for utilisation of Krishna waters for irrigation and other purposes within the State and schemes of both the State have common components.

Now, therefore, these presents witness that the Government of Andhra Pradesh and Tamil Nadu do hereby agree and bind themselves, their successors and representatives as follows:-

(i) The Governments of Andhra Pradesh and Tamil Nadu agree that the point of off-take of the lined channel referred to in Clause (iv) of the 1977 Agreement shall be near about Chennamukkapalli, Cuddapah Taluk.

(ii) The Government of Andhra Pradesh agree to construct the components of Madras City water Supply Scheme specified in Schedule 'A' which are within Andhra Pradesh boundaries, with its own men and materials, the cost being shared as described in the following clause.

(iii) The Governments of Andhra Pradesh and Tamil Nadu agree to share the expenditure on the construction improvements including lining and maintenance of the components specified in Schedule 'A' and Srisailem reservoir in accordance with the guidelines specified in schedule 'B'.

(iv) The Governments of Andhra Pradesh and Tamil Nadu agree that in respect of the Madras Water Supply Scheme transmission losses in the Water Conductor system from Srisailem reservoir to Andhra Pradesh – Tamil Nadu border be restricted to 3 TMC in a water year. The Government of Andhra Pradesh agree to carry out necessary remedial measures to restrict the losses to 3 TMC. The

cost of such remedial measures will be shared by Andhra Pradesh and Tamil Nadu in the Water conductor system proportionate to the benefit derived where the water conductor system is common and where the water conductor system is intended exclusively for Tamil Nadu, the entire cost of remedial measures shall be borne by Tamil Nadu.

(v) The Government of Andhra Pradesh also agree to provide a storage space of 5 TMC in Kandaleru reservoir for Madras City water supply and arrange to issue water required for Madras City water Supply at the Tamil nadu border from a combined irrigation-cum-water supply canal on the lines indicated in the schedule of supplies made out in Schedule 'C' subject to the limitation that total quantity of water made available at State border is 15 TMC less losses in any water year as per sub-clause (iv) of this clause.

2. The Governments of Andhra Pradesh and Tamil Nadu agree that the component works detailed in Schedule 'A' will be executed by the Government of Andhra Pradesh in accordance with the details furnished in the Joint Project Report mutually agreed upon by both the Governments. Any change in the Joint Project Report in respect of Hydraulic particulars of bed levels and full supply levels of canals governing the water supply to Madras City, shall be effected only with the approval of the Liaison Committee.

3. The Government of Tamil Nadu do hereby agree bear the proportionate cost of the project as determined by the guidelines detailed in the Schedule 'B'. The broad pattern of provision of funds by both the Governments will be agreed to in advance of the commencement of the execution of the Project. The payments by Tamil Nadu will be made in advance for half year in April and October against the forecast of expenditure by the Andhra Pradesh Government for the ensuing half year, the accounts of sharing cost being finalised at the end of each half year, to be adjusted in the succeeding half year. The forecast will be for each component of the Project and the payment by the Government of Tamil Nadu will be regulated as may be agreed by both the Governments.

4. The Government of Tamil Nadu also agree to bear the proportionate cost of maintenance of the entire storage-cum-conveyance system in accordance with the guidelines included in Schedule 'B'. The amount will be paid in advance every year in April against the forecast of expenditure that will be made by the Andhra Pradesh Government, the actual expenditure being adjusted in the succeeding financial year.

5. The Liaison Committee now functioning will continue to monitor the progress in the implementation of the scheme and also ensure effective coordination between the two Governments after the completion of the scheme.

6. The Government of Tamil Nadu shall utilise the Krishna waters exclusively for drinking water supply and not for any other purposes.

7. The Governments of Andhra Pradesh and Tamil Nadu agree that the Madras water Supply Project will require a minimum of three years and a maximum of six years for completion. The two Governments will take all possible measures for early completion. In furtherance of this objective and pursuant to the provisions of clause 3 of this agreement, the Government of Tamil Nadu agrees to pay to the Government of Andhra Pradesh in Advance of each half year a sum of Rs. 30 crores in April and October commencing from April, 1983 in each of the years 1983-84, 1984-85 and 1985-86 together with additions on account of cost adjustments based on actuals to cover the cost of component works mentioned in Schedule 'A'.

8. Subject to the foregoing provisions, nothing in this agreement shall be construed as abridging or taking away the rights of the Government of Andhra Pradesh to utilise the waters of the Krishna River for any purposes including irrigation

9. Without prejudice to the components mentioned in schedule "A" the Government of Andhra Pradesh may add any further component from time to time for the maximum utilisation of the waters of the Krishna River within the State for any other purposes.

Sd/-  
(N.T.RAMA RAO)  
Chief Minister  
Andhra Pradesh

Sd/-  
(M.G.RAMACHANDRAN)  
Chief Minister  
Tamil Nadu

**SCHEDULE-A  
COMPONENTS OF THE SCHEME**

The Project will consist of the following components:-

1. Approach channel from SrisaillamReservoir foreshore to the Headregulator at Pothireddipadu.
2. The Head regulator at Pothireddipadu.
3. Lined Canal from Pothireddipadu Head regulator to Banakacherla cross regulator across Mittakondala ridge.
4. Banakacherla cross Regulator .
5. Main canal system from Banakacherla cross regulator to the point of off-take.
6. Open lined channel from the point of off-take to Somasila.
7. Somasila reservoir II stage.
8. Canal from Somasila reservoir to Kandaleru reservoir.
9. Kandaleru Reservoir.
10. Canal from Kandaleru reservoir to Andhra Pradesh,Tamil Nadu border.

Sd/- (18.4.83)  
(N.T.RAMA RAO)  
Chief Minister  
Andhra Pradesh

Sd/- (18.4.83)  
(M.G.RAMACHANDRAN)  
Chief Minister  
Tamil Nadu

**SCHEDULE- B**

|   |  |
|---|--|
| 1. Srisaillam Reservoir   | Irrigation components of the cost of the project to be shared in proportion to the contemplated regulated quantitythrough the reservoir by both the States |
| 2. Approach channel from Srisaillam reservoir foreshore to the Head regulator at Pothireddipadu.              | On the basis of contemplated Annual utilisation quantities.  |
| 3. The Head regulator at Pothireddipadu   |  |
| 4. Lined Canal from Pothireddipadu Head regulator to Banakacherla cross regulator across Mittakondala bridge. |  |
| 5. Banakacherlacross regulator.   |  |
| 6. Main canal system from Banakacherla to the Point of off-take   |  |
| 7.Open lined channel from the pointof off-take to Somasila.   | Full cost to Tamil Nadu  |
| 8. Somasila II stage  | In proportion to the contemplated quantities diverted for Tamil Nadu and quantity stored and diverted for Andhra   |

|  |   |
|--|---|
|  | Pradesh in second stage.  |
| 9. Link canal from Somasila to Kandaleru       | Prorata on contemplated annual utilisation basis  |
| 10. Kandaleru reservoir                        | In the ratio of storage space allotted to Tamil Nadu to the designed capacity of the reservoir. |
| 11. Canal from Kandaleru to Tamil Nadu border. | One cusec mile rate reservoir.  |

NOTE: Guidelines for cost sharing in respect of additions and alterations in any of the component works, if it others, will have to be arrived at afresh.

Sd/- (18.4.83)  
(N.T.RAMA RAO)  
Chief Minister  
Andhra Pradesh

Sd/- (18.4.83)  
(M.G.RAMACHANDRAN)  
Chief Minister  
Tamil Nadu

SCHEDULE - C  
SCHEDULE OF SUPPLIES TO BE MADE AT TAMILNADU BORDER

| Month     | Discharge              | Remarks                    |
|-----------|------------------------|----------------------------|
| July      | Not exceeding 1000 c/s | The delivery at the border |
| August    | -do- 1000 c/s          | will be at a constant rate |
| September | -do- 1000 c/s          | of 1000 c/s restricting    |
| October   | -do- 1000 c/s          | number of days to limit    |
| November  | Nil                    | the totalsupply at border  |
| December  | Nil                    | to 8.00 TMC during the     |
| January   | -do- 1000 c/s          | period from July to        |
| February  | -do- 1000 c/s          | October and 4 TMC          |
| March     | -do- 1000 c/s          | during the period from     |
| April     | -do- 1000 c/s          | January to April           |
| May       | Nil                    |                            |
| June      | Nil                    |                            |

Joint observation of gauge reading shall be conducted at a site near Tamil Nadu border to be mutually agreed upon by both the States to determine the flow released to Tamil Nadu at the border.

Sd/- (18.4.83)  
(N.T.RAMA RAO)  
Chief Minister  
Andhra Pradesh

Sd/- (18.4.83)  
(M.G.RAMACHANDRAN)  
Chief Minister  
Tamil Nadu

## **INTER-STATE AGREEMENT ON DUDHGANGA PROJECT**

This Agreement made at Mumbai this day of Eighteenth August in the year Two Thousand One between the GOVERNOR OF MAHARASHTRA exercising the executive powers of the Government of the state of Maharashtra, herein after called the “Government of Maharashtra”( which expression shall, unless the context does not so admit, include his successors in office representing the State of Maharashtra and assigns) of the one part and the GOVERNOR OF KARNATAKA exercising the executive powers of the Government of the State of Karnataka, hereinafter called the “Government of Karnataka”( which expression shall, unless the context does not so admit, include his successors in office representing the State of Karnataka and assigns) of the other part.

WHEREAS the Government of Maharashtra and Government of Karnataka have agreed that an Irrigation Project on the river Dudhganga (hereinafter referred to as “the Dudhganga Project”) shall be executed as herein set out as a joint project of the said two Governments;

AND WHEREAS it has been agreed between the parties hereto that the Dudhganga Project is to be executed and maintained after completion and the total cost thereof is to be shared and paid by the parties in the manner herein after set out and the rights, duties and liabilities of the parties in connection herewith shall be as hereinafter specified;

AND WHEREAS the Planning Commission, Government of India has allowed the execution of the Dudhganga Project in accordance with financial provisions therefor made in the State Plans as have been approved by the Planning Commission;

NOW THEREFORE, THIS AGREEMENT WITNESS AND IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO IN CONNECTION WITH THE DUDHGANGA PROJECT AS FOLLOWS:

### **DUDHGANGA PROJECT**

- 1.1 Pursuant to the directives of the Central Water Commission, Government of India in September, 1969, the project report of Dudhganga Project was recast and the Government of Karnataka was requested to agree to the provisions of irrigation in Karnataka State as contemplated in the revised project report. The Government of Karnataka agreed before the Krishna Water Disputes Tribunal to undertake Dudhganga Project as a joint venture between the two States of Maharashtra and Karnataka.
- 1.2 With a view to ensuring efficient, economic and speedy execution of the Dudhganga Project, Government of Maharashtra and Government of Karnataka hereby agree that the Dudhganga Project shall be constructed, operated and maintained as a joint venture of the Government of Maharashtra and Government of Karnataka.

### **EXECUTION OF WORK**

- 2.1 The Dudhganga Project envisages execution of the following works viz.,:
  - (a) Construction of masonry dam of about 73.08 mtr. Height at the deepest bed level across Dudhganga river near village Asangaon in Radhanagaritaluka of Kolhapur District in Maharashtra State to impound about 719.12 Mcum(25.40 TMC) of water and
  - (b) Construction of Left Bank Canal and branches of 200 km and Right Bank Canal and branches of 204.5 km in the Dudhganga, Panchaganga and Vedganga river valleys to provide irrigation partly by flow and partly by lift.
- 2.2 Total irrigation proposed is 59,933 ha of which 46,948 ha will be in Maharashtra State and the balance 12,985 ha in Karnataka. The utilisation of water for Maharashtra would be 664 Mcum(23.43 TMC), inclusive of proportionate lake evaporation losses ( about 27.6 Mcum) and losses in conveyance system, and for Karnataka it would be 113 Mcum.(4.00 TMC)

inclusive of proportionate lake evaporation losses ( about 4. Mcum.) and losses in conveyance system. Thus, the total use would be about 777 Mcum. (27.43 TMC). Out of 113 Mcum. (4 TMC) of water for Karnataka 16.14 Mcum.(0.57 TMC) of water will be released to Karnataka on demand through Bidri and Nidheri branches of the canals during the monsoon season. The control levels of the dam across the Dudhganga river near village Asangaon are as under

|            |          |
|------------|----------|
| M.D.D.L.   | 607.16 m |
| F.R.L.     | 646.00 m |
| M.W.L.     | 647.06 m |
| Top of Dam | 649.10 m |

- 2.3 Surplus or deficit of water compared to the planned use of 777 Mcum. Of water at 75% dependability, will be shared by each State in the proportion of planned gross water utilisation of each State, viz. 85:15. However, for deciding whether there is surplus or deficit of water the opinion of Standing Committee shall be taken.

#### SUBMERGENCE AREA

- 2.4 The total submergence area under the Dudhganga Project shall be about 4,624 ha. from 9 villages in Radhanagari taluka of Kolhapur district in Maharashtra. The forest land going under submergence is about 1,160 ha. From Radhanagari taluka in Kolhapur district in Maharashtra.

#### DUDHGANGA PROJECT COST

- 2.5 A detailed revised project report of the Dudhganga Project incorporating the irrigation in Karnataka was prepared and submitted to the Central Water Commission, New Delhi, for obtaining clearance from the Planning Commission. The Government of Karnataka communicated its concurrence in the technical aspects of the Dudhganga project on 19.11.1981. The Government of Maharashtra accorded revised administrative approval to the project for Rs. 169.05 crore in May, 1985. However, the revised estimated cost as per the note prepared by the Central Water Commission, New Delhi, for consideration of the Technical Advisory Committee of Planning Commission in August 1988 was Rs. 204.78 crore.

#### CONSTRUCTION WORKS

- 2.6(i) The construction of the dam and the head-works will be carried out by the State of Maharashtra and the construction of the common lengths of canals and branches will be carried out by the Government of Maharashtra upto the first entry into the Karnataka territory.
- 2.6(ii) The construction of the portion of the canals, branches and distributaries lying in Maharashtra territory and serving Maharashtra areas exclusively will be carried out by the Government of Maharashtra and those lying in Karnataka areas exclusively will be carried out by the Government of Karnataka. Provided, however, that the construction work in respect of Nidhori and Bidri branch canal where only a small portion of the canal lies in Maharashtra State after first entry into Karnataka will be executed by the Government of Karnataka for the sake of continuity and convenience in construction.
- 2.6(iii) The lift irrigation schemes will be prepared, executed and maintained by the respective States at their own cost.
- 2.6(iv) The construction of the head works under the Dudhganga Project has already been started in November 1979 by the Government of Maharashtra and the construction of the head works is almost complete.
- 2.6(v) The Left Bank (L.B) and Right Bank (R.B) Canals envisaged in the Dudhganga Project are designed taking into consideration the irrigation in Maharashtra and Karnataka States. Out of 200 km. of L.B. main canal and branches to be constructed, the construction of first 31 km is nearly completed and the remaining length of main canal 32 to 76 km. will be constructed in due course.
- 2.6(vi) Out of 204.5 km of Right Bank main canal and branches to be constructed at present the works of the R.B. main canal is practically completed except lining to some sensitive patches. The work of Nidhori branch canal km. 1 to 25 is completed.

- 2.6(vii) The Dudhganga project also contemplated incidental hydro-electric power generation of about 24 megawatt (MW) through canal power house. The administratively approved cost of the hydro-electric power generation was about Rs.20.86 crore and the construction work is now completed. The latest estimated cost of hydro-electric power generation is about Rs.52.03 crore.

#### SHARING OF COST OF DUDHGANGA PROJECT

- 2.7 It is hereby agreed that the revised administratively approved cost of Rs.159.05 crore subject to further revision from time to time, for the construction works under the Dudhganga Project shall be shared between the Government of Maharashtra and the Government of Karnataka in the following proportion, viz.:

a) The cost of the Dam and the Headworks under the Dudhganga Project, as revised from time to time, shall be shared in the same proportion based on the proposed gross utilisation of water in the respective territories of the two states, viz., in the ratio of 85:15 between Maharashtra State and Karnataka State respectively.

b) The cost of the common portions of the left bank canal, right bank canal and the branches, as revised from time to time, shall be shared by the Government of Maharashtra and Government of Karnataka on the basis of cumec-kilometers apportionable as per the requirement of each State. Provided, however, that the cost of the main canals, branches and distributories serving exclusively the territories of one State only will be borne by that State alone.

c) There shall be no sharing of the hydro-electric power generated and the entire power shall be utilised by the Government of Maharashtra. Similarly, the entire cost of the hydro-electric power component shall be borne by the Government of Maharashtra.

d) The cost of the other required common works and services, shall be shared between the two State Governments in the proportion of the projected utilisation of water by the two States as stipulated in clause 2.7(a)

The Government of Karnataka shall forthwith pay to the Government of Maharashtra the share of its proportionate cost in respect of the works already executed, whether partly or wholly as on 18<sup>th</sup> August, 2001, failing which Government of Karnataka shall be liable to pay to the Government of Maharashtra penal interest at the rate of 15% per annul on such delayed payments.

#### OPERATION AND MAINTENANCE OF THE WORKS

- 2.8(i) The operation and maintenance of the headworks and common length of the canals in Maharashtra shall be looked after and carried out by the Government of Maharashtra while the operation and maintenance of common length of canal in Karnataka shall be looked after and carried out by the Government of Karnataka.
- 2.8(ii) Common branches (with distributories) of canals serving areas in both the States shall be maintained and operated by the State Government which is major beneficiary of the branches (with distributories)
- 2.8(iii) The operation and maintenance of canals, branches and distributories lying in and serving exclusively one State shall be done by the State concerned at its cost.
- 2.8(iv) The cost of operation and maintenance of the headworks and the common portions of canals, branches and distributories will be shared according to clauses 2.7 (a) and 2.7(b) above respectively.
- 2.8(v) The Government of Karnataka shall pay its proportionate share of the cost of operation and maintenance of the headworks and common portions of the canals and branches and distributories operated and maintained by the State of Maharashtra to the Government of Maharashtra, and the Government of Maharashtra shall pay its proportionate cost of operation and maintenance of common portions of canals and branches operated and maintained by the State of Karnataka to the Government of Karnataka every year in advance and in any event before the end of the financial year in which the expenditure is incurred.

- 2.8(vi) The map showing common length of canal and branches in Maharashtra and Karnataka along with area to be irrigated is attached<sup>69</sup> to this agreement as Annexure 1

#### PROVISIONS OF FUNDS

- 2.9(i) During the subsistence of this Agreement the Government of Maharashtra and the Government of Karnataka shall make available every year adequate funds as per their respective shares for execution of the works included in the budgetary year so as to ensure that the Dudhganga Project is executed in accordance with the agreed time schedule and completed within the stipulated period.
- 2.9(ii) The Government of Karnataka shall pay to the Government of Maharashtra in the first week of every quarter beginning April of every financial year, according to the annual schedule of payments as may be mutually agreed to 75% of its share of cost which is to be incurred during the quarter for the construction of head works and services and the balanced 25% before the end of next quarter.
- 2.9(iii) In the event of two consecutive defaults in payment of a quarterly instalment by Government of Karnataka, interest at the rate of 15% per annum will be charged to Government of Karnataka from the 1<sup>st</sup> day of the next quarter.
- 2.9(iv) In the event of defaults in payment by Government of Maharashtra in respect of sharing of cost of maintenance of common canals and branches running in the State of Karnataka before the end of financial year in which the expenditure is incurred, interest at the rate of 15% per annum will be charged to Government of Maharashtra from the beginning of the next financial year.
- 2.9(v) Similarly, in the event of defaults in payment by Government of Karnataka in respect of sharing of cost of maintenance of common canals and branches running in the State of Maharashtra before the end of the financial year in which the expenditure is incurred, interest at the rate of 15% per annum will be charged to the Government of Karnataka from the beginning of the next financial year.
- 2.9(vi) The Government of Maharashtra shall inform the Government of Karnataka about the yearly requirement of funds for works as shown in the budget by December of the previous year.

#### INTERIM ARRANGEMENT

- 2.10 Government of Maharashtra has recently taken a decision to complete the balance portion of Left Bank Canal (L.B.C.) i.e. 32 to 76 km. on priority basis. As headworks are completed, for utilisation of water arrangement is made by releasing it in the Dudhganga, Panchganga and Vedganga river valleys. The irrigators will be encouraged to use water by lift, either individually or on cooperative basis. This arrangement will continue till the final execution of all works hereunder is completed as per the time schedule, subject to the availability of funds. This is an interim arrangement, which will cease to operate when the execution of all canals and related works will be completed. Hence the areas to be irrigated by lift should be within the water share of the Maharashtra state and Government of Karnataka may also consider similar arrangements, as the construction of canals will take considerable time enabling the use through canals and regular distribution system in the respective States. Karnataka will decide about continuing the arrangement on a permanent basis or otherwise after Maharashtra supplies full details regarding programme and cost of completion.

#### STANDING COMMITTEE

- 3.1 For coordinating the construction of the Dudhganga project and its operation and maintenance after completion, a Standing committee comprising the following officers shall be constituted, viz.
- |   |          |
|---|----------|
| 1. Chief Engineer (Specified Projects), Irrigation<br>Department, Government of Maharashtra, Pune | Chairman |
|---|----------|

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<sup>69</sup> Map not attached with the Agreement.



|  |                       |
|--|-----------------------|
| 2. Chief Engineer, Water Resources Dept., Government of Karnataka, Belgaum                                       | Co-Chairman           |
| 3. Superintending Engineer, Irrigation Department, Government of Maharashtra ( connected with Dudhganga Project) | Member                |
| 4. Superintending Engineer, Water Resources Dept., Government of Karnataka ( connected with Dudhganga Project)   | Member                |
| 5. Collector, Kolhapur   | Member                |
| 6. Deputy Commissioner, Belgaum  | Member                |
| 7. Executive Engineer, Irrigation Department, Government of Karnataka (in-charge of Dudhganga Project)           | Member& Co-Secretary. |
| 8. Executive Engineer, Irrigation Department, Government of Maharashtra (in-charge of Dudhganga Project)         | Member-Secretary      |

- 3.2 The Standing Committee shall meet not less than once in three months. The minutes of the meeting of the Standing Committee incorporating therein the decisions taken by the said Committee shall be placed before the Control Board constituted under clause 4.1 hereof.

#### CONTROL BOARD

- 4.1 For overall supervision and control over planning and construction of the Dudhganga project and its maintenance after completion, a Control Board comprising the Ministers and officers of the two State Governments shall be constituted. The composition of the Control Board shall be as under--

|  |                  |
|--|------------------|
| 1. Minister for Irrigation, Maharashtra  | Chairman         |
| 2. Minister for Water Resources, Karnataka   | Co-Chairman      |
| 3. Minister of State for Irrigation, Maharashtra   | Member           |
| 4. Minister of State for Water Resources, Karnataka  | Member           |
| 5. Secretary, Irrigation Department, Maharashtra   | Member           |
| 6. Secretary, Water Resources Department, Karnataka  | Member           |
| 7. Secretary, Finance Department, Maharashtra  | Member           |
| 8. Secretary, Finance Department, Karnataka  | Member           |
| 9. Secretary (Rehabilitation), Revenue and Forest Department, Maharashtra                  | Member           |
| 10. Secretary, Revenue Department, Karnataka   | Member           |
| 11. Chief Engineer (Specified Projects), Irrigation Department, Pune, Maharashtra          | Member           |
| 12. Chief Engineer, Water Resources Department, Belgaum, Karnataka                         | Member           |
| 13. Superintending Engineer, (connected with Dudhganga project), Government of Maharashtra | Member-Secretary |

- 4.2 One Superintending Engineer from the Government of Karnataka connected with the execution of the Dudhganga project works shall be nominated by the Government of Karnataka to work as a Joint Secretary of the Control Board. The Joint Secretary shall have access to the concerned documents. The office of the Superintending Engineer nominated by Government of

- Maharashtra as the Secretary of the Board and all records of the Control Board shall be kept in this office.
- 4.3 Normally at least one meeting of the Control Board shall be held in a year to sort out the problems concerning various aspects of the Dudhganga Project. Additional meetings may be called with the permission of the Chairman.
- 4.4 The Control Board will frame its own rules of procedures for the conduct of its business.

#### PROGRAMME OF DESIGN AND MATERIALS

- 5.1 The programme of construction of the headworks and the portion of the Canal and distributories in territories in the State of Maharashtra shall be prepared by the Government of Maharashtra and the programme for the construction of the canal and distributories in the State of Karnataka shall be prepared by the Government of Karnataka and thereafter the same shall be got approved by the Standing Committee and the Control Board. This being a joint project, the designs, plans and estimates of the Dudhganga project prepared by one State shall be made available to the Engineers of the other State for reference and suggestions. Designs of the canals and canal structures in Karnataka territory shall be prepared by the Government of Karnataka.
- 5.2 For the construction of dam, canals and other structures of the Dudhganga Project, it may become necessary for either State to extract materials like sand, rubble etc., from convenient locations in the other State for the bona fide works. Both the States shall allow such use of materials for the bona fide works of the Dudhganga Project on a request from proper authority and as per terms and conditions applicable for such extraction of material applicable in that State.

#### RESETTLEMENT OF PROJECT AFFECTED PERSONS

- 6.1 The submergence area of the Dudhganga project lies entirely in Maharashtra. The project displaced persons from the submergence area shall be rehabilitated in the benefited zone and the necessary facilities will be given to them by the Government of Maharashtra and the Government of Karnataka to resettle in their respective territories in accordance with the provisions of the Maharashtra Project Affected Persons Act, 1986.
- 6.2 In addition to the facilities of providing houses or housing plots and agricultural lands to the project affected persons who are desirous of settling either in the State of Maharashtra or Karnataka State, the respective Governments will give priority in the appointment to Class-II and Class-IV services in the public employment of the State to the extent of 5 percent of the total available seats. The project affected persons desirous of settling in Karnataka should also be given loan by that Government for construction of houses on the plots allotted to them on the basis of schemes existing in Maharashtra State.
- 6.3 The cost of resettlement of project affected persons will be shared by the State of Maharashtra and Karnataka in the proportion of 80:20, Maharashtra being both the affected and beneficiary while Karnataka being only beneficiary. If the project affected persons have undertaken their own resettlement and also given in writing that they would not go to the court of law against the compensation awarded to them. Government of Maharashtra has devised a scheme of payment of rehabilitation grant in addition to the compensation paid for their land under Government Resolution, Revenue and Forests Department No. RPA-1364/CR-3355/1(A), dated the 15<sup>th</sup> December, 1983. Expenditure incurred on payment of rehabilitation grant will be shared by both the States in proportion of 80:20 as mentioned above.
- 6.4 In lieu of forest land of about 1,167 ha. Required for Dudhganga Project, alternate land for compensatory afforestation is required to be made available. Government of Karnataka shall make available in Karnataka such alternate land in proportion to their own use.
- 6.5 Cost of compensatory afforestation and catchment area treatment will be shared in the ratio of planned gross water utilisation of each State, viz. 85:15 between the States of Maharashtra and Karnataka.

#### ADJUDICATION IN CASE OF DISPUTES AND DIFFERENCES

- 7.0 In the event of any dispute or difference arising out of this Agreement between the parties hereto, the same shall be referred to the Chief Ministers of the two States for resolution. In the event of non-resolution of the dispute by the Chief Ministers the same shall be referred for adjudication to such person(s) as may be mutually agreed by both the parties whose decision thereon shall be final and binding. The provision of Arbitration and Conciliation Act, 1996 shall apply to such disputes. The Arbitration proceedings shall be held at Mumbai.

#### STAMP DUTY

- 8.0 The Government of Maharashtra shall bear and pay the Stamp Duty on this Agreement and duplicate thereof.

IN WITNESS WHEREOF the Governor of Maharashtra has caused the Chief Secretary to the Government of Maharashtra to set his hand and affix his official seal hereto for and on his behalf and the Governor of Karnataka has caused the Chief Secretary to the Government of Karnataka to set his hand and affix his official seal hereto for and on his behalf the day, month and year first herein above written.

SIGNED, SEALED AND DELIVERED BY

Shri. V. Ranganathan.  
Chief Secretary to the  
Government of Maharashtra  
for and behalf of the  
Governor of Maharashtra

In the presence of  
WITNESSES

1) Shri. S.Y.Shukla  
Secy. Irrigation Dept.

2) Shri. N.D.Vadnere  
Executive Director, M.K.V.D.C

SIGNED, SEALED AND DELIVERED BY

Smt. Teresa Bhattacharya,  
Chief Secretary to the  
Government of Karnataka  
for and on behalf of the  
Governor of Karnataka

In the presence of  
WITNESSES

1) Shri. S.J.Chennabasappa,  
Secy. Water Resources Dept

2) Shri. M.R. Hegde,  
Secy. Parliamentary Affairs  
and Legislation Dept.

**FINAL AGREEMENT<sup>70</sup> BETWEEN THE MYSORE AND THE MADRAS GOVERNMENTS  
IN REGARD TO THE CONSTRUCTION OF A DAM AND A RESERVOIR AT  
KRISHNARAJASAGARA**

18<sup>th</sup> February, 1924

(Accompanimental to G.O. No.228 I, dt.3<sup>rd</sup> July,1924)

1. Whereas by an agreement, dated 18<sup>th</sup> February, 1892 commonly known and cited as the 1892 agreement, entered into between the Government of His Highness the Maharaja of Mysore, hereinafter referred to as the Mysore Government, and the Government of Madras, hereinafter referred to as the Madras-Government, certain rules and schedules defining the limits within which no new irrigation works are to be constructed by the Mysore Government without previous reference to the Madras Government were framed and agreed to; and
2. Whereas under Clause III of the said agreement the Mysore Government asked for the consent of the Madras Government to the construction of a dam and a reservoir across and on the river Cauvery at Kannambadi now known as the Krishnarajasagara dam and reservoir; and
3. Whereas a dispute arose as to the terms under which the Mysore Government were to construct the dam in the manner and form proposed by them; and
4. Whereas such dispute was referred to the arbitration of Sir H.D.Griffin who gave an award in the year 1914 as to the terms and conditions under which the Madras Government should consent to the construction of the said dam and reservoir; and
5. Whereas the Madras Government, after the said award of the said arbitrator ratified by the Government of India, appealed to the Secretary of State for India who reopened the question; and
6. Whereas thereupon the Mysore Government and the Madras Government with a view to an amicable settlement of the dispute entered into negotiations with each other; and
7. Whereas as a result of such negotiations, certain Rules of Regulation of the Krishnarajasagara reservoir were framed and agreed to by the Chief Engineers of the Mysore and Madras Governments on the 26<sup>th</sup> day of July of the year 1921, such Rules of Regulation forming Annexure I to this agreement; and
8. Whereas, thereafter, the technical officers of the two Governments have met in conference and examined the question of extension of irrigation in their respective territories with a view to reaching an amicable arrangement; and
9. Whereas as the result of such examination and conference by the technical officers of the two Governments, certain points with respect to such extension were agreed to respectively by the Chief Engineer for Irrigation, Madras and the Special Officer, Krishnarajasagara Works at Bangalore, on the 14<sup>th</sup> day of September, 1923, such points forming Annexure III to this agreement.
10. Now these presents witness that the Mysore Government and the Madras Government do hereby agree and bind themselves, their successors and representatives as follows:

- (i) The Mysore Government shall be entitled to construct and the Madras Government do hereby

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<sup>70</sup> This agreement has been superseded by decision of CWDT of 5.2.2007 and is no longer valid.

assent under Clause III of the 1892 agreement to the Mysore Government constructing a dam and a reservoir across and on the river Cauvery at Kannambadi, now known as the Krishnarajasagara, such dam and reservoir to be of a storage capacity of not higher than 112 feet above the sill of the undersluices now in existence corresponding to 124 feet above bed of the river before construction of the dam, and to be of the effective capacity of 44,827 million cubic feet, measured, from the sill of the irrigation sluices constructed at 60 feet level above the bed of the river upto the maximum height of 124 feet above the bed of the river; the level of the bed of the river before the construction of the reservoir being taken as 12 feet below the sill level of the existing undersluices and such dam and reservoir to be in all respects as described in schedule forming Annexure II to this agreement.

- (ii) The Mysore Government on their part hereby agree to regulate the discharge through and from the said reservoir strictly in accordance with the Rules of Regulation set forth in the Annexure I, which Rules of Regulation shall be and form part of this agreement.
- (iii) The Mysore Government hereby agree to furnish to the Madras Government within two years from the date of the present agreement dimentioned plans of anicuts and sluices or open heads at the offtakes of all existing irrigation channels having their source in the rivers Cauvery, Lakshmanathirtha and Hemavathi, showing thereon in a distinctive colour all alterations that have been made subsequent to the year 1910, and further to furnish maps similarly showing the location of the areas irrigated by the said channels prior to or in the year 1910.
- (iv) The Mysore Government on their part shall be at liberty to carry out future extentions of irrigation in Mysore under the Cauvery and its tributaries to an extent now fixed at 110,000 acres. This, extent of new irrigation of 110,000 acres shall be in addition to and irrespective of the extent of irrigation permissible under the Rules of Regulation forming Annexure I to this agreement, viz. 125,000 acres plus, the extension permissible under each of the existing channels to the extent of one third of the area actually irrigated under such channel in or prior to 1910.
- (v) The Madras Government on their part agree to limit the new area of irrigation under their Cauvery Mettur Project to 301,000 acres, and the capacity of the new reservoir at Mettur, above the lowest irrigation sluice to ninety three thousand five hundred million cubic ft.  
  
Provided that, should scouring sluices be constructed in the dam at a lower level than the irrigation sluice the dates on which such scouring sluices are opened shall be communicated to the Mysore Government.
- (vi) The Mysore Govt. and the Madras Govt. agree, with reference to the provisions of clauses (iv) and (v) preceding, that each Government shall arrange to supply the other as soon after the close of each official or calendar year, as may be convenient, with returns of the areas newly brought under irrigation, and with the average monthly discharges at the main canal heads as soon after the close of each month as may be convenient.
- (vii) The Mysore Government on their part agree that extensions of irrigation in Mysore as specified in clause (iv) above shall be carried out only by means of reservoirs constructed on the Cauvery and its tributaries mentioned in Schedule A of the 1892 Agreement. Such reservoirs may be of an effective capacity of 45,000 million cubic feet, in the aggregate and the impounding therein shall be so regulated as not to make any material diminution in supplies connoted by the gauges accepted in the Rules of Regulation for the Krishnarajasagara forming Annexure I to this agreement, it being understood that the rules for working such reservoirs shall be so framed as to reduce to within 5 per cent any loss during any impounding period, by the adoption of suitable proportion factors, impounding formula or

such other means as may be settled at the time.

- (viii) The Mysore Govt. further agree that full particulars and details of such reservoir schemes, and of the impounding therein, shall be furnished to the Madras Govt. to enable them to satisfy themselves that the conditions in clause (vii) above will be fulfilled. Should there arise any difference of opinion between the Madras and Mysore Govts as to whether the said conditions are fulfilled in regard to any such scheme or schemes, both the Madras and Mysore Governments agree that such difference shall be settled in the manner provided in clause (xv) below.
- (ix) The Mysore Govt and the Madras Govt agree that the reserve storage for power generation purposes now provided in the Krishnarajasagara may be utilised by the Mysore Govt. according to their convenience from any other reservoir hereafter to be constructed, and the storage thus released from the Krishnarajasagara may be utilised for new irrigation within the extent of 110,000 acres provided for in clause (iv) above.
- (x) Should the Mysore Govt. so decide to release the reserve storage for power generation purposes from the Krishnarajasagara, the working tables for the new reservoir from which the power/water will then be utilised shall be framed after taking into consideration the conditions specified in clause (vii) above and the altered conditions of irrigation under the Krishnarajasagara.
- (xi) The Mysore Govt. and the Madras Govt. further agree that the limitations and arrangements embodied in clauses (iv) to (viii) supra shall, at the *expiry* of fifty years from the date of the execution of these presents, be open to reconsideration in the light of the experience gained and of an examination of the possibilities of the further extension of irrigation within the territories of the respective Govts. and to such modifications and additions as may be mutually agreed upon as the result of such reconsiderations.
- (xii) The Madras Government and the Mysore Govt. further agree that the limits of extension of irrigation specified in clauses (iv) and (v) above shall not preclude extensions of irrigation effected solely by improvement of duty, without any increase of the quantity of water used.
- (xiv) The Madras Government shall be at liberty to construct new irrigation works on the tributaries of the Cauvery in Madras and, should the Madras Government construct, on the Bhavani, Amravati or Noyil river in Madras, any new storage reservoir, the Mysore Govt. shall be at liberty to construct, as an offset, a storage reservoir in addition to those referred to in clause (vii) of this agreement on one of the tributaries of the Cauvery in Mysore, of a capacity not exceeding 60 per cent of the new reservoir in Madras.  
Provided that the impounding in such reservoirs shall not diminish or affect in any way the supplies to which the Madras Govt. and the Mysore Govt. respectively are entitled under this agreement, or the division of surplus water which, it is anticipated, will be available for division on the termination of this agreement as provided in clause (xi).
- (xv) The Madras Government and the Mysore Govt. hereby- agree that, if at any time there should arise any dispute between the Madras Govt. and the Mysore Govt. touching the interpretation or operation or carrying out of this agreement, such dispute shall be referred for settlement to arbitration, or, if the parties so agree, shall be submitted to the Govt. of India.

(A.R. BANERJI)  
Diwan of Mysore,  
18<sup>th</sup> February, 1924

(P. HAWKINS )  
Secretary to Govt PWD Madras  
18<sup>th</sup> February, 1924

## RULES OF REGULATION OF THE KRISHNARAJASAGARA RESERVOIR UNDER CONSTRUCTION OF THE CAUVERY IN THE MYSORE TERRITORY

### PREAMBLE

The following rules of regulation of the Krishnarajasagra (formerly known and referred to, in the rules of regulation previously in force, as the Kannambadi reservoir) shall supersede in toto those forming part of the award dated 21<sup>st</sup> April, 1914, on term of reference 3(a) given by the Arbitrator appointed by the Government of India to arbitrate between the Madras and the Mysore Governments on the question of the storage of the waters of the river Cauvery within Mysore territory.

The rules, with the exception of Nos. 1 to 9 inclusive 10 (except in so far as it relates to Kn.) 11,12,14(ii), 15 to 17 inclusive 22,23,26(i), (iii) and (v), 27 to 30 inclusive and 32, shall be subject to amendment as may be desirable, subject to the conditions below:

- (a) The rules may be altered tentatively for one or two years, by agreement of both parties.
- (b) At the end of the tentative period the amended rules may be confirmed by the consent of both parties.
- (c) Subject to conditions (a) and (b) above, amendment of any rule shall not be a bar to further amendment or reversion to the original rules by consent of both parties.

### I. Rules of Regulation, General

1. The carrying out of these rules of regulations shall, in so far as they relate to the regulation of the Krishnarajasagara, be the duty of a Controlling Officer appointed by the Government of Mysore, and of a subordinate staff working under his orders.

2. The only discretion to be exercised by the Controlling Officer in operating the rules of regulation shall be as to the means by which the water to be passed from the, reservoir to the river shall be passed and such discretion shall be exercised in general accordance with the instructions of the Mysore Govt.

3. The curves of discharge of all gauging places in the Mysore State shall be verified by gauging at intervals of three years. Cross-sections of the rivers at the gauging site shall be taken twice a year, in the first fortnight in June and in the first fortnight of October. If a cross-section taken in June, at any gauging site, indicates a marked change in cross-sectional area, gauge for gauge, joint gaugings shall be made at once, on the request of either party, to verify the discharge curve for the station. Any modification in the curve, found necessary shall not however be applied to regulation for the year in which the gaugings are made.

4. The verification of curves of discharge, referred to in rule 3 above, shall be made jointly by Mysore and Madras; and if such verification shows that modification is necessary such modification shall be made by mutual agreement.

5. All formulae and coefficients in such formulae of discharge, referred to in the rules, shall be subject to revision by mutual agreement.

6. All quantities and readings of gauges to be telegraphed in accordance with these rules

shall be expressed in works.

## II. Limit Gauges and Discharges at the Upper Anicut

7. The minimum flow of the Cauvery that must be ensured at the Upper Anicut before any impounding is made in the Krishnarajasagara as connoted by the readings of the Cauvery dam north gauge, shall be as follows:

| Month         | Readings of the Cauvery Dam with North Gauge |
|---------------|--|
| June          | Six and a half feet                          |
| July & August | Seven and a half feet                        |
| September     | Seven feet                                   |
| October       | Six and a half feet                          |
| November      | Six feet                                     |
| December      | Three and a half feet                        |
| January       | Three feet                                   |

8. The discharges connoted by the gauge readings set forth in rule 7 shall in the case of regulation during the irrigation season (vide rule 9) of 1921, be deduced from the average discharge curve derived from the joint gaugings of the Cauvery at the Cauvery Dam made in the four years ending 1920. The said discharges shall be revised, if necessary, after completion of the joint gaugings of 1921 and shall be used for the purpose of regulation for the five years ending 1926. The said discharges shall be finally revised and adopted for all subsequent regulation, at the conclusion of the joint gauging of the year 1926, on the basis of the joint gaugings of the ten years ending 1926.

9. The south-west monsoon shall, for the purpose of these rules, be considered to extend from the 1<sup>st</sup> June to the 30<sup>th</sup> September, both days inclusive, and the north-east monsoon from the 1<sup>st</sup> October to the 31<sup>st</sup> January both days inclusive. The irrigation season shall be taken to extend from the 1<sup>st</sup> June to the 31<sup>st</sup> January, both days inclusive. All dates in this rule shall have reference to the Upper Anicut.

## III. Impounding Formula

10. Impounding in the Krishnarajasagara during the irrigation season shall be regulated in accordance with following formula:

$$I = \frac{Kn}{P} - C \quad \text{Where}$$

I = quantity that may be impounded.

Kn= Inflow at Krishnarajasagara, that is, the measured flow at the three "standard" gauging stations at Chunchinkattle on the Cauvery, Akkilibbal on the Hemavathi and Unduvadi on the Lakshmanathirtha to which shall be added allowances for -

- (i) the yield from the catchment between the 'standard' gauging stations and the Krishnarajasagara calculated in accordance with paragraphs 61 and 62 of Colonel Elli's Manual of Irrigation (1920 Edition) less the quantity of water required for tank irrigation in the tract in question. In the catchment, the discharges of the major streams shall be deduced, if feasible, from gauge readings by mutual agreement. The duty of water for the areas irrigated under tanks shall be taken as 40.
- (ii) The drainage from the ayacuts of channels which drain back into the rivers below the standard gauging stations, the quantity in cusecs of such drainage for a particular channel being taken to be 3/16 of the area irrigated in acres divided by 40.



C = Flow connoted by the gauge reading for the particular month concerned given in rule 7 above. The month at Krishnarajasagara corresponding to that at the Upper Anicut is to be taken as commencing and ending four days earlier than at the Upper Anicut.

P = The proportion which the natural flow in the Cauvery at the Krishnarajasagara bears to the corresponding natural flow at the Upper Anicut.

I, Kn and C to be expressed in the same units.

11. (i) Until the 31<sup>st</sup> January, 1927 the values of 'P', in the formula in rule 10 shall be taken as 0.625 during the south-west monsoon and 0.300 during the north east monsoon. .

(ii) An examination of the effect of impounding in the Krishnarajasagara on the supplies realized at the Upper Anicut shall be made in the form and in accordance with the instructions given in Part II of the Appendix to these rules for each or the ten years ending with the irrigation season of 1926-27 to see, whether the tentative factors of 0.625 and 0.300, provided in part (i) of this rule should be permanently adopted or whether they should be increased (vide instructions 25 and 26 of Part II of the Appendix). For the five irrigation seasons, ending 1921-22 the average discharge curve for the Cauvery Dam north gauge, obtained from the gaugings of the five-year period ending and including 1921, shall be prepared and adopted for the examination. For subsequent years the discharge curve of the year concerned shall be used. For the months for which it is found necessary, from the examination referred to above, to increase the 'values of 'P' such values shall be finally adopted and brought into use in lieu of those in part (i) of this rule at the beginning of the irrigation season 1927-28. For months when no increase in the value of 'P' is found to be necessary, the values given in part (i) of this rule shall be finally retained and brought into use at the beginning of the same irrigation season.

12. (i) The whole flow of the river at Krishnarajasagara may be impounded in the reservoir from the 28<sup>th</sup> January to the 27<sup>th</sup> of May, both days inclusive, but issues from the reservoir shall be made when necessary to maintain such a flow as will pass to Madras not less than 900 cusecs below Sivasamudram anicut.

(ii) Until the dam is completed to a height admitting of F.R.L. 98 feet above sill level of the existing low level sluices in the dam or until the 28<sup>th</sup> May 1931, whichever date is the earlier, as an alternative to part (i) of this rule impounding from the 28<sup>th</sup> January to the 24<sup>th</sup> February, both inclusive, shall be in accordance with rules 7, 10 and 11 as far as they relate to the month of January, measurement being made at the Krishnarajasagara; and from the 25<sup>th</sup> February to the 27<sup>th</sup> May, both days inclusive, the whole flow at the Krishnarajasagara may be impounded, subject to a flow of 750 cusecs being maintained below Sivasamudram anicut. The Mysore Darbar may at any time before the year 1931 elect to regulate their reservoir as provided in part (i) of this rule, subject to notice being given to the Government of Madras before the 31<sup>st</sup> December of the year preceding that in which the rule will come into operation. In the event of the Mysore Darbar electing to regulate in accordance with part (i) of this rule no change shall be made thereafter.

#### IV Gauge Readings and Inflow Computations

13. (i) The standard gauges at the gauging stations on three rivers above the Krishnarajasagara and the gauging stations below the same shall be read three times daily, that is, 6 a.m., noon and 6 p.m.

(ii) All gauge readings shall be telephoned immediately after reading to the Controlling

Officer at the Krishnarajasagara.

14. (i) The computation of the inflow into the Krishnarajasagara shall be made by the said Controlling Officer from the electric water level records of the three rivers above the Krishnarajasagara with due allowance for the yield from the intermediate catchment, such allowances being made as provided in rule 10. In the event of an electric recorder differing from the telephone gauge readings, the latter shall be adopted for computing the inflow for the time being.

(ii) Until the 27<sup>th</sup> May, 1923 the discharges at the standard gauging stations shall be computed from the average curves based on the discharge observations of the four years 1915-1918. For the irrigation seasons 1923-24 to 1927-28, inclusive, the discharges at the standard gauging stations shall be computed on the previous season's curves. For irrigation seasons subsequent to that of 1927-28 the discharges at the standard gauging stations shall be computed on the latest annual curves available.

(iii) In the event of an electric recorder differing from the telephoned gauge readings, the Controlling Officer shall, as soon as possible, proceed to the gauging station, check and, if possible, rectify the electric recorder. If the mechanical record is found to differ from the telephoned gauge readings and the mechanical recorder is registering accurately a correction shall be made in the tentative inflow recorded in the regulation register in accordance with the mechanical record.

(iv) In the event of the both recorders breaking down telephoned gauge readings shall be the basis of computation.

#### V. Allowance for Extension of Irrigation in Mysore after the year 1910

15. The area to which Mysore is entitled to extend irrigation, without passing compensation water to Madras, by improvement of duty in canals or channels, in existence prior to the year 1910, taking off from the following rivers in Mysore:

- (i) the Hemavathi
- (ii) the Lakshmanathirtha
- (iii) the Cauvery (above and below the reservoir)

shall be limited to 1/3 of the existing area prior to the extension under each channel being considered separately.

16. In lieu of 9,274 acres of old irrigation to be submerged by the Krishnarajasagara with F.R.L. at 118 feet above bed of river or 106 feet above the sill of the low level sluices now in existence, Mysore shall be entitled to extend irrigation, to an area of 12,500 acres without passing compensation water to Madras, under canals or channels taking off from the Hemavathi, the Lakshmanathirtha or the Cauvery, constructed subsequent to the year 1910 and above the Krishnarajasagara. In the event of the Krishnarajasagara being constructed of such a capacity as to submerge less than 9,274 acres, the permissible extension shall be reduced according to then area actually submerged and in the ratio of 12,500 to 9,274 and when a larger area is submerged owing to the capacity of the reservoir being increased to 44,827, millions cubic feet (F.R.L. 124 feet above bed of river or 112 feet above the sill of the low level sluices now in existence) the permissible extension shall be similarly increased in the same proportion on such larger area as may be actually submerged.

17. The quantity of water in cusecs due to Madras as compensation for water utilized by Mysore for the area in excess of that provided in rules 15 and 16 shall be calculated by dividing such excess area irrigated by 40.

## VI. Computation of Issue

18. The quantity of water to be passed to Madras, shall be computed every 12 hours from the records of inflow of the previous 12 hours.

19. (i) For the purpose of orders for the regulation of the sluice shutters, the quantities of water to be passed through the sluices shall be computed by the application of the formula

$$D = C.A. \sqrt{2gh}$$

D= Discharge in cusecs

C= Co-efficient

A= Height of shutter raised, multiplied by width of vent, both in feet,

g= 32

h= Effective head in feet

Joint observations shall be made annually to determine the value of C until values covering the whole range of water level in the Krishnarajasagara have been determined by mutual agreement.

(ii) A suitable formula arrived at by mutual agreement for the discharge over the waste weir shall also be applied when details are known.

20. The quantity of water actually passed down shall be verified by observation between the Krishnarajasagara and the Chickdevarayasagar anicut. The means of such verification shall be decided on by mutual agreement.

## VII. Hot Weather Computation of Issues from the Krishnarajasagara

21. From the 28<sup>th</sup> January to the 27<sup>th</sup> May, both days inclusive, when rule 12 (i) is in operation, or from the 25<sup>th</sup> February to the 27<sup>th</sup> May, both days inclusive, when rule 12 (ii) is in operation, the Controlling Officer shall receive information from Sivasamudram at least twice daily of the flow during the previous 12 hours at Sivasamudram anicut and shall by occasional visits verify the same.

22. The quantity to be issued from the Krishnarajasagara shall be such quantity as will ensure the passing at Sivasamudram anicut of the quantity provided for in rule 12.

## VIII. Regulation Register

23. All regulation calculations and computations provided in any of the previous rules shall be recorded in a register called the 'Regulation Register' and the orders for regulation which result from the computation shall also be recorded under the signature of the Controlling Officer.

## IX. Regulation

24. Regulation of sluices shall be made at 12 hourly intervals, the times of commencement and completion of regulation being entered in the "Regulation Register".

25. The Controlling Officer shall satisfy himself personally when the sluices are finally adjusted that the regulation has been accurately carried out in accordance with recorded orders and certify that he has done so in the "Regulation Register". Under extraordinary circumstances only shall the sluices be manipulated other than at 12 hour intervals and in such cases full information regarding the reasons and necessity for this and the nature of the intermediate regulation shall at once be communicated by the Controlling Officer to each Government.

26. (i) Any deficit or excess in quantity due/to Madras indicated by the water level in the reservoir shall be adjusted in the next period of regulation.

(ii) A computed issue from the reservoir in excess of that computed as due to Madras may be recouped by Mysore by subsequent regulation; if however, the over issue was intentional, such recoupment shall be limited to 20 per cent of the computed issue due to Madras when the over issue was made; if the computed correct water level of the reservoir has been higher than the actual water level for each of the previous eight 12 hourly periods the actual water level, if below the computed correct water level, shall be taken as the correct water level whether the over issue was unintentional or intentional. The computed correct water level of the reservoir shall take account of actual issues for irrigation and losses due to evaporation.

(iii) The rates of evaporation shall be taken as given below until the end of the irrigation season 1924-25:-

| <u>Month</u>     | <u>Inches per month</u> |
|------------------|-------------------------|
| June             | 5                       |
| July to February | 4                       |
| March , 2006     | 5                       |
| April            | 7                       |
| May              | 8                       |

After 1924-25 the rates for evaporation shall be determined as provided in instruction No.7 of Part I of Appendix to these rules. These rates shall be revised for final adoption in 1927 by mutual agreement..

(iv) In computing the issue to be passed to Madras through the undersluices or over the weir a deduction shall be made from the computed issue due to Madras of an amount equivalent to 1/8 of the issues to the two existing low level irrigation channels taking off from the reservoir subject to a maximum deduction of 25 cusecs. No deduction shall be made from the computed Issue due to Madras for water issued from the reservoir for irrigation other than that for channels specified above.

(v) If the information provided for in rule 21 shows that the quantity of water due to Madras under rule 12 is deficient, the regulation shall at once be altered to ensure the passing at sivasamudram anicut of the quantity by which the flow has been deficient in the previous 12 hours plus the 900 or 750 cusecs, as the case may be, provided for in rule 12, and each special regulation shall be entered in the "Regulation Register" referred to in rule 23.

#### X. Discharge at Cauvery Dam during the Period Ending 31<sup>st</sup> January 1927

27. The exact formula for determining the discharge through the Upper anicut shall be as specified in instruction 18 of the Appendix to these rules.

28. All regulation operations at the Upper anicut and all data for calculating the discharge

through the Upper Anicut Sluices and also all gauge readings at the Cauvery Dam shall be recorded daily in a register under the signature of a responsible officer.

#### XI. Inspection of Records by Either Government

29. The Controlling Officer at the Krishnarajasagara shall afford every facility for inspection of his registers, books, calculations, records of regulation and actual method of regulation and gauge readings and discharge measurements and for testing of instruments in his charge to any officer of the Madras Government appointed and authorised by that Government, to make such inspection or tests on their behalf. The said Controlling Officer and duly accredited inspecting officer shall have full use of telephones, telegraphs or other means of communication installed in connection with the work.

30. The responsible officer at the Upper anicut referred to in rule 29 shall afford the same facilities for inspection and testing up to the end of the irrigation season of 1926-27 as those provided for in rule 29, to any Officer of the Mysore Government appointed and authorised by that Government to make such inspection or tests on their behalf.

#### XII. Miscellaneous

31. The Controlling Officer at Krishnarajasagara shall make the following returns to each Government:

- (a) By post mail daily a copy of the entries made each day in the 'Regulation register' referred to in rules 23 to 26.
- (b) By telegram daily or at such intervals as may be agreed on the quantity of inflow into and issue from the Krishnarajasagara during the previous 24 hours or during such intervals as may be agreed upon.

32. From the 1<sup>st</sup> June to the 31<sup>st</sup> January, both days inclusive, upto the 31<sup>st</sup> January, 1927 a copy of the entries made each day in the register referred to in rule 28 shall be furnished to the controlling Officer at the Krishnarajasagara by the Superintendent in charge of the Upper anicut.

33. Photo copies of all diagrams of the self-recording instrument maintained by each Government shall be forwarded to the other Government monthly.

Such diagrams shall not be required from the Madras Government after the 31<sup>st</sup> January, 1927.

A.H.MORIN, Colonel  
Chief Engineer for Irrigation  
Madras.  
26-7-21

S. CADAMBI,  
Chief Engineer, Mysore P.W.D.

**APPENDIX TO THE RULES OF REGULATION**  
**INSTRUCTIONS FOR THE PREPARATION OF WORKING TABLES OF (i) IMPOUNDING IN**  
**THE KRISHNARAJASAGARA AND (ii) AGANDA CAUVERY DISCHARGES FOR MAKING**  
**THE EXAMINATION REFERRED TO IN RULE 11 (ii) OF THE RULES OF REGULATION**

The period covered by the working tables and the examination of the effect of the Krishnarajasagara on supplies due to Madras at the Upper anicut shall be from the 1<sup>st</sup> June, 1917 to the 31<sup>st</sup> January, 1927. Of these the Krishnarajasagara working tables will be made in sample form A, for each year during the ten year period; and the Cauvery Dam discharge tables will be made in sample form B for only such periods when there is any impounding in the Krishnarajasagara as shown in sample form A.

**PART I KRISHNARAJASAGARA WORKING TABLES (VIDE SAMPLE FORM A)**

The full effective capacity of the reservoir is to be taken as that connoted by the full reservoir level at 112 feet above sill level of the existing under sluices (124 feet above bed of the river before the construction of the dam), namely, 44,827 millions cubic feet. The actual balance as obtained from the previous year's working tables or 5,000 millions cubic feet, whichever is the greater, should be taken as the starting balance on the 28<sup>th</sup> May of each year.

The balance on the 28<sup>th</sup> May, 1917 should be that obtained from working tables of the year 1916 or 5,000 millions cubic feet, whichever is the greater and the opening balance on the 28<sup>th</sup> May, 1916 should be taken as 5,000 millions cubic feet.

2. Column (1) - The twelve-hourly period to be that ending 6a.m. or 6 p.m.

3. Column (2) - The flow into the reservoir to be the measured flow at the three "standard" gauging stations plus an allowance for the yield from the intermediate catchment; that is, 'Kn' in rule 10 of the Rules of Regulation computed from the readings provided in rule 13 (i) of the Rules of Regulation. From June, 1916 to June, 1922 the curves of discharge for the standard gauging stations above the reservoir shall be, the average curves based on the discharge observations of the four years 1915 to 1918. From 1922 to 1926, both years inclusive, gauging shall be made at the three standard gauging stations and the annual discharge curves obtained shall be used for the years concerned.

4. Column (3) - Regulation to be assumed to have been made in accordance with the rules of Regulation for the whole period of eleven years and the quantity that may be impounded so derived to be entered in this column for each twelve hourly period, the working tables in this form for 1916 being intended only for arriving at the starting balance in the reservoir on 28<sup>th</sup> May, 1917.

The value of C in the impounding formula to be obtained from the curve used for arriving at the discharges at the Upper anicut for the respective years vide rule 11 (ii).

5. Columns (4) and (5) - The average draw-off in millions cubic feet for each twelve-hourly period for irrigation to be taken as follows for entry in column (4) and (5):

| Month               | Monsoon crop | Perennial crop |
|---------------------|--------------|----------------|
| June, first half    | ..           | 27             |
| June, second half   | 51.5         | 27             |
| July to November    | 51.5         | 27             |
| December            | 34.5         | 27             |
| January, first half | 25.7         | 27             |

|                        |    |    |
|------------------------|----|----|
| January, second half   | .. | 27 |
| February to end of May | .. | 27 |

6. Column (6)- The issues for power to be those actually recorded but subject to a minimum of 900 cusecs measured at Sivasamudam during the period 28<sup>th</sup> January to 27<sup>th</sup> May, both days inclusive, and entered in this column.

7. Column (7) - The allowances for evaporation to be determined for each month by mutual agreement after making joint observation during the three irrigation seasons ending and including 1924-25, quantities being deduced on the opening balance of the reservoir every day at 6 a.m. and 6 p.m.

8. Column (8) - Instruction in heading to be followed.

9. Column (9) – Instruction in heading to be followed.

10. Column (10)- Balance of previous twelve-hourly period plus column (9) or 44,827 millions cubic feet, whichever is less, to be entered in this column .

11. Column (11)- Any excess of the algebraic sum of the quantity in column (9) and that of the previous twelve-hourly period in column (10) over 44,827 millions cubic feet to be entered in this column.

12. Column (12) – Instruction in the heading to be followed.

26.7.21 Sd/-. (Col. A.H .MORIN )  
Engineer for Irrigation , Madras

26.7.21 Sd/- ( S. CADAMBI)  
Chief Engineer for Mysore, PWD

SAMPLE FORM 'A'  
 QUANTITY OF THE NATURAL FLOW OF THE CAUVERY IMPOUNDED IN THE KRISHNARAJASAGARA  
 (All quantities in million cubic feet)

| Twelve-hourly period ending |      | Flow into the Krishna raja-sagara | Quantity that may be impounded | Draw off     |                |       |             | Total Draw off (col 4+5+6+7) | Net quantity that may be impounded (col 3 – col 8) | Balance in reservoir | Surplus from reservoir | Quantity impounded in the Krishna-rajasa-gara (col 3 – col 11) | remarks |
|-----------------------------|------|-----------------------------------|--------------------------------|--------------|----------------|-------|-------------|------------------------------|--|----------------------|------------------------|--|---------|
| Date                        | Hour |                                   |                                | Monsoon crop | Perennial crop | Power | evaporation |                              |  |                      |                        |  |         |
| 1-a                         | 1-b  | 2                                 | 3                              | 4            | 5              | 6     | 7           | 8                            | 9  | 10                   | 11                     | 12   | 13      |
|                             |      |                                   |                                |              |                |       |             |                              |  |                      |                        |  |         |



## PART II. AGANDA CAUVERY DISCHARGE TABLES (VIDE SAMPLE FORM B)

13. The examination of the effect of impounding in the Krishnarajasagara to be made in sample form B. Entries will only be made in this table for actual impounding periods of six consecutive twelve-hourly periods and over a exhibited in sample form A.

14. Column (1) - The number to refer to the whole impounding period

15. Column (2) - The entry in this column to refer only to dates of impounding period shown in sample form A and not to date in column (3). For the purpose of this examination the impounding period will be taken to include any interval upto and including six twelve-hourly periods between actual impounding period and the succeeding actual impounding period as defined in instruction 15 above.

16. Column (3)- The date and hour of the first entry of an impounding period made in this column to be those 24 hours prior to the end of the first twelve hourly period of impounding shown in sample form A. The date and hour of the last entry of an impounding period be above 48 hours after the last twelve hourly period of impounding shown in sample form A, as determined by instruction 15 above.

17. Column (4)-The time for transmission from the Krishnarajasagara to the Upper anicut shall be taken as the average indicated by a comparison of such peak gauge readings of the Chickdevarayasagar and Upper anicuts as are available upto the end of 1921, fractions of a twelve-hourly period less than six hours in the average result being neglected and those greater than six hours being taken as one twelve-hourly period. Only peak gauges from half a foot below the limits in rule 7 of the Rules of Regulation upto 9 feet in the south-west monsoon and 7 1/2 ft. in the north-east monsoon to be taken into account. Separate averages to be deduced for the south-west and north-east monsoons.

18. Column (5) - The total discharge in the Agenda Cauvery (a) and (b) below to be calculated from the records of the automatic water level recorder, if the readings of the gauge made at 6 a.m. noon and 6 p.m., show the recorder to have registered accurately, otherwise the readings of the gauges made at 6 a.m., noon and 6 p.m. to be used and the discharges averaged for each twelve-hourly period:

(a) The discharge of the Cauvery shall be that given by the discharge curves for the Cauvery Dam gauge provided in rule 11 (ii) of Rules of Regulation.

(b) The discharge through the Upper anicuts regulators to be calculated as laid down in paragraph 13 of Part II of Volume III of Papers regarding the Cauvery Reservoir Project (pages 7 and 8) account being taken of any intermediate regulation.

19. Column (6) (a)- The quantity to be entered in this column, that due to the actual rise in the reservoir, as shown from the Regulation records, plus the loss due to evaporation, plus the recorded issue for irrigation after making the deduction provided for in rule 26 (iv) of the Rules of Regulation.

Column (6) (b)- The quantity to be entered in this column is that due to the actual fall in the reservoir, as shown from the Regulation records, minus the loss due to evaporation, minus the recorded issue for irrigation after adding the deduction provided for in rule 26.(iv) of the Rules of Regulation.

20. Column(7)- A percentage allowance, if decided to be necessary, to be made for loss in transmission between the Krishnarajasagara and Upper anicut. This allowance to be settled by mutual

agreement in June 1926 after further examination of the subject and any joint observations made to determine it, in the event of disagreement, the case to be referred to the Government of India for final decision. Figures corresponding to column (6) (a) will be a plus entry in this column and those corresponding to column (6) (b) a minus entry.

21. Column (8) - Instruction in heading to be followed.

22. Column (9)- The quantity due to Madras in any twelve-hourly period to be the whole natural flow of the Aganda Cauvery or the discharge connoted by the gauge readings in rule 7 of the Rules of Regulation obtained from the discharge curves referred to in rule II(ii) of the Rules of Regulation, whichever is less.

23. Columns (10), (12) , (13) and (14) - Instructions in headings to be followed.

24. Column (11)- See instruction 20 above.

25. The several periods in column (1) should be sorted out against the several months showing against each month the percentage of deficit obtained in column (14) .If the actual impounding period extends over portions of two months as noted in column (2) , then the resulting percentage *in* column (14) to be counted against both the months.

26. After thus sorting out the periods for all the ten years against the several months, the resulting deficit *in* excess of 5 per cent is to be neglected if it happens in only one period of examination relating to a particular month. If it happens in more than one period the proportion factor is to be increased so as to reduce the number of such deficit periods to one only in any month.

26-7-21 (Col. A. H. MORIN)  
Chief Engineer for Irrigation, Madras

26-7-21 S.CADAMBI  
Chief Engineer, Mysore P.W.D.

# SAMPLE FORM B

[illegible]

(All quantities in million cubic feet)

(A.R. BANERJI)

Diwan of Mysore  
18<sup>th</sup> February, 1924

(P. HAWKINS)

Secretary to Govt.  
Public works Department, Madras  
18<sup>th</sup> February, 1924

## ANNEXURE II

The construction of a masonry dam and reservoir on the Cauvery river, \_\_\_\_\_ now known as the Krishnarajasagara, \_\_\_\_\_ at Kannambadi, 8 miles west of Seringapatam north latitude  $12^{\circ}33'20''$  and east longitude  $76^{\circ}37'15''$ ; such dam and reservoir to be of a storage capacity not higher than 112 feet above the sill of the under sluices constructed in the body of the dam across the old river bed portion, corresponding to 124 feet above the bed of the river before the construction of the dam; such reservoir to be of an effective capacity of 44,827 millions cubic feet measured from the sill of the irrigation sluices constructed at 60 feet level above the bed of the river upto the maximum height of 124 feet above the said bed of the river. (Note that the level of the bed of the river before the construction of the dam is taken as 12 feet below the sill level of the said undersluices). Subject to the above specified modifications in regard to the maximum height of water stored, and the effective capacity; such dam and reservoir to be constructed in accordance with the design accompanying the Project Report furnished with the Diwan of Mysore's demi official letter No.2311, dated 16<sup>th</sup> May 1911.

(A.R.BANERJI)  
Diwan of Mysore,

18-2-24

(P. HAWKINS)  
Secretary to Govt. P.W.D. Madras  
18-2-24

### ANNEXURE III

#### POINTS AGREED TO AT THE CONFERENCE BETWEEN THE CHIEF ENGINEERS OF THE MADRAS AND MYSORE GOVERNMENTS REGARDING THE CAUVERY DISPUTE

The technical agreement of the Krishnarajasagara, come to in 1921 between the Chief Engineers of the two Governments, will be taken as finally settled subject to the alterations in rules 15 and 17 now agreed to as shown in Appendix-I and the Krishnarajasagara question also settled according to that agreement.

2. The extent of future extension of irrigation in Mysore under the Cauvery and its tributaries mentioned in Schedule A of the 1892 Agreement shall be fixed at 110,000 acres and Madras shall have their Cauvery-Mettur Project as revised in 1921 with their new area of irrigation fixed at 301,000 acres, as specified in paragraph 11, page 4 of the project Report (1921) Volume V.

3. Such extensions of future irrigation in Mysore will be carried out only by means of reservoirs on the Cauvery and its tributaries mentioned in Schedule A of the 1892 Agreement. Such reservoirs may be of an effective capacity of 45,000 millions cubic feet in the aggregate; and the impounding therein shall be so adjusted as not to make any material diminution of the supplies connoted by the gauges accepted in the technical agreement for the Krishnarajasagar, it being understood that the rules for the working of such reservoirs shall be so framed as to reduce to within 5 percent, any loss during any impounding period in excess of 5 percent by the adoption of suitable proportion factors, impounding formula, or other means that may be settled at the time.

4. Full particulars and details of such reservoir schemes shall be furnished to the Madras Government to enable them to satisfy themselves that the conditions in paragraph 3 above will be fulfilled. If there arise any difference of opinion between the Madras and Mysore Governments regarding any scheme sent by the Mysore Government, the matter shall be settled in accordance with (clause IV of the 1892 Agreement).

5. The reserve storage for power generation purposes now allowed in the Krishnarajasagara may be utilised from any other reservoir, according to the convenience of Mysore; and the storage released from the Krishnarajasagara may be utilised for irrigation within the extent of 110,000 acres noted above. In that case, the working tables of the new reservoir from which power water will be utilised will be framed after taking into consideration the conditions specified in paragraph 3 above and the altered conditions of irrigation under the Krishnarajasagara.

6. It is suggested that the present limitation in regard to the extension of new irrigation as in paragraph 2 above shall hold good for a period of 50 years; at the end of that period it may be subject to reconsideration.

14-9-23 (A.V.RAMALINGA AYYAR)  
Chief Engineer for Irrigation  
Madras

14-9-23 (S.CADAMBI)  
Special Officer, Krishnarajasagara Works

## APPENDIX I

Alterations in rules 15 and 17 of the Technical Agreement of 1921.

Rules 15- After the word 'the year 1910' at the end of the rule, add the words, 'the extension under each channel being considered separately'.

Rules 17- In line 1 after the words 'The quantity of water' add the words 'in cusecs'.

(A .R.BANERJI)  
Diwan of Mysore  
18-2-24

(P.HAWKINS)  
Secretary to Govt. P.W.D.  
Madras

18-2-24

ACCOMPANIMENT II TO G.O.NO.228 I, 3<sup>RD</sup> JULY,1924  
PRESS COMMUNIQUE  
Dated Fort St. George, July 3,1924  
(MYSORE-MADRAS CAUVERY AGREEMENT)

On the 18<sup>th</sup> February last, an agreement was executed on behalf of the Government of Madras and the Mysore Darbar which finally settled the long standing dispute relating to the utilisation of the waters of the river Cauvery in Madras and Mysore, respectively. This agreement has just been ratified by the Right Honourable the Secretary of State.

The history of dispute is well known. In 1913 the question was referred to arbitration, but the Award given in 1914 was of a nature which the Government of Madras were unable to accept and they therefore appealed to the Secretary of State who thereupon suspended the Award. Negotiations between the Government of Madras and the Mysore Darbar were then commenced with a view to an equitable and friendly settlement of the points at issue. The principal objection, in the interests of this Presidency, to the Award of 1914 lay in the fact that, although the Award provided, in terms of gauge readings at the Cauvery Dam (Upper anicut), for the supplies which were assumed by the Arbitrator to represent the established rights of Madras in regard to existing irrigation in the Cauvery Delta, it afforded inadequate protection to Madras in respect of the surplus waters of the river and of future extension of irrigation. These negotiations were conducted on behalf of Madras by the Chief Engineer for Irrigation Mr. W.J.J. Howley, C.S.I. Sir Thomas Ward, the Inspector General of Irrigation was consulted from time to time and visited this residency in this connection.

From the date of the award, further gaugings of the supply available in the river in each month of the year and of the discharges represented by gauge readings at the Cauvery, Dam were continuously maintained and registered and on the basis of these observations, and of calculations based on the more exact data which thus became available, the first stage in the settlement was reached in 1921, when after very careful and prolonged study of the latter results by the late Colonel Morin, who was then Chief Engineer for Irrigation, and Mr.F.E.Morgan, the Assistant Chief Engineer for irrigation, the first step in the final settlement was taken in July, 1921 when rules limiting the impounding in the Krishnarajasagara reservoir in Mysore, minimum gauge readings to be maintained at the Cauvery Dam and the limitation of extension of irrigated area in Mysore were agreed to by both sides. During the course of the subsequent negotiations, however, the Mysore Darbar claimed the right to prohibit any further extension of irrigation under the river Cauvery or its tributaries in Madras, whether by improvement of duty or otherwise, to prohibit the construction of any reservoir on any tributary of the Cauvery in Madras territory, and to limit the effective capacity of the Madras Cauvery reservoir at Mettur to 82,000 m.c.ft. This Government was unable to accept these restrictions, which would have seriously affected irrigation, facilities in Madras for fifty years at least, and further negotiations took place. The matter was discussed at meetings which took place in Mysore and Ootacamund during June and July 1922 between the Member then in charge of the Irrigation portfolio, Sir K. Srinivasa Ayyangar, and the Diwan of Mysore. No conclusions were however arrived at. Subsequently several tentative draft agreements were framed and in April, 1923 a further discussion took place at Bangalore between Sir Charles Todhunter and the Hon'ble Mr.C.P.Ramaswami Ayyar and the Diwan of Mysore at which were present Mr.Narasimha Ayyangar, the Under Secretary to the Government of Madras (Irrigation), and Mr. Cadambi, the Special Officer, Krishnarajasagara works, and in June 1923, the Hon'ble Mr. C.P Ramaswami Ayyar discussed the matter in Simla with the Government of India. In September and November 1923 further conferences were held in Bangalore and Madras between Mr A. V. Ramalinga Ayyar, Chief Engineer, assisted by Mr Narasimha Ayyangar, the under Secretary and the Mysore Engineers. During this period the assistance of Gebbie, the consulting Engineer to the Government of India, was obtained, and he attended the September conference. The Mysore authorities, however, found themselves unable to modify their claims already

referred to, and this position was maintained unaltered until February last, when at a final meeting between the representatives in Bangalore at which Mr. Gebbie, the Consulting Engineer to the Govt. of India, was present, an amicable agreement was arrived at. Under this agreement, which was executed on the 18<sup>th</sup> February, the terms of the agreement of July, 1921 were confirmed, the limit of effective capacity of the proposed Madras reservoir was raised to 93,500 m.c.ft. the right to construct new irrigation works on the tributaries of the Cauvery in Madras was preserved and also the right of Government of Madras to extend irrigation.

During the course of these prolonged negotiations, this Government in addition to the opinions of their own professional advisers, have had the advantage of the advice and assistance of the Government of India Irrigation experts and further, before the final settlement was effected they also consulted the late Chief Engineer for Irrigation, Mr. W.J.J. Howley, C.S.I., whose high professional qualifications and long experience of the case were of the greatest value.

A most important factor in the case was the effect of any agreement which might be arrived at on existing interests and rights the Cauvery Delta including French territory. These interests were necessarily regarded as a first charge on any arrangement that might be made. The various representation made by Tanjore Mirasidars and other interested parties were most carefully studied and considered. The advantages which will accrue to this area in the effect of the proposed storage reservoir in affording a regular and reliable supply independent of seasonal conditions, cannot be over-estimated, while pending the completion of the reservoir, the area is fully safeguarded by the limitation of the permissible storage in Mysore which was also definitely pressed for as necessary to safeguard the rights of Tanjore and Trichinopoly ryots and so as to allow further extension.

This Government has further agreed with the Mysore Darbar that Mysore shall utilize the water power available at Mekadatu for the development electric power, subject to the right of Madras to purchase power from the source, if required, at a concessional rate. In view of the very large sources of power which are available in this presidency it is doubtful whether power from Mekadatu will be required.

The agreement is a most satisfactory termination of this prolonged dispute as while it affords complete protection of existing irrigation, it also enable the Madras Government to proceed with their reservoir at Mettur as soon as the secretary of State has sanctioned the project, and to effect a considerable extension of irrigated area.

(P. HAWKINS)  
Joint Secretary to Govt. P.W.D.  
(Irrigation)



**SUPPLEMENTAL AGREEMENT<sup>71</sup> DATED 17-6-1929 BETWEEN THE GOVTS. OF MYSORE AND MADRAS IN REGARD TO THE CONSTRUCTION OF A DAM AND RESERVOIR AT KRISHNARAJASAGARA**

WHEREAS on the 18<sup>th</sup> February 1924 an agreement between the Governments of Mysore and Madras was signed and whereas by clause 10 (2) of the said agreement the Mysore Government agreed to regulate the discharges through and from the Krishnarajasagara reservoir strictly in accordance with the Rules of Regulation being Annexure I to the said agreement; and

WHEREAS disputes had arisen between the two Governments in regard to the interpretation, operation and carrying out of rules 7 and 8 of the said Rules of Regulation; and

WHEREAS both the Governments have submitted the matters in dispute to the Arbitration of the Honourable Mr. Justice Page with Messrs. Howley and Forbes as assessors.

Now the two Governments have agreed in lieu of an award in that behalf to adopt finally for all Regulation subsequent to 1<sup>st</sup> July 1929, the following discharges for the respective months in place of the averages referred to in clause 8 of Annexure I:

|  |               |
|--|---------------|
| June for 6 1/2 feet gauge .....          | 29,800 cusecs |
| July and August for 7 ½ feet gauge ..... | 40,100 cusecs |
| September for 7 feet gauge .....         | 35,000 cusecs |
| October for 6 ½ feet gauge .....         | 29,800 cusecs |
| November for 6 feet gauge .....          | 25,033 cusecs |
| December for 3 ½ feet gauge .....        | 8,913 cusecs  |
| January for 3 feet gauge .....           | 6,170 cusecs  |

and in rule 10, defining the impounding formula, O will denote the said above mentioned discharges. THIS agreement is without prejudice to the other question outstanding between the parties in regard to the clauses. of the agreement other than clauses 7 and 8 of the Rules of Regulation

17th June 1929

Sd/  
(R. RANGA RAO)  
Officiating Chief Secretary  
of Mysore

Sd/  
(A. G. LEACH)  
Secretary to the Govt. to the Govt.  
Public Works and Labour Deptts.  
Madras

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<sup>71</sup> This agreement is no longer valid as Agreement of 1924 has been superseded by decision of CWDT dt 5.2.2007

**MADRAS-MYSORE AGREEMENT, 1924**  
**SUPPLEMENTAL AGREEMENT, DATED 22<sup>nd</sup> JUNE, 1929**  
**(G.O.No.2580,P.W.DATED 12TH SEPTEMBER 1930)**

(1)  
AGREEMENT<sup>72</sup>

"WHEREAS on the 18<sup>th</sup> February 1924 an agreement between the Governments of Mysore and Madras was signed and whereas under clause 10 (ii) of the said agreement the Mysore Government agreed to regulate the discharges through and from the Krishnarajasagara reservoir strictly in accordance with the Rules of Regulation set forth in Annexure I to the said agreement and whereas disputes arose touching certain points provided for in the said Rules of Regulation and whereas a statement of agreements resulting from a discussion at Government House, Mysore between Messrs. W.J.J. Howley and S.G. Forbes, Assessors, nominated by both the Governments relating to those points was arrived at and is annexed to this agreement and whereas in regard to one of these points namely, the mode of passing compensation water conferences were held at Bangalore and Ootacamund between the representatives of both the Governments. Now the two Governments have agreed as follows:

- (1) That P shall be examined for final adoption exactly as provided for in rule 11 (ii) of Annexure I to the agreement of 1924.
- (2) that transmission losses shall be fixed at 10 percent for use in column 7 of the sample form B given in Part II of the Appendix to the Rules of Regulation annexed to the 1924 Agreement.
- (3) that for the calculation of evaporation from the reservoir a correction co-efficient of 0.85 be adopted tentatively pending further observations and that definite proposals should be drawn up and agreed to within two months from the date of this agreement and joint observations started immediately thereafter and continued for not more than three irrigation seasons;
- (4) that the co-efficients for the Krishnarajasagara sluice gates already determined for the several stages should be adopted tentatively for those respective stages and that observations should be continued until the full set of co-efficients have been determined and agreed upon and that the tentative figures adopted should be revised from time to time as additional data become available;
- (5) that no corrections are necessary for vertical velocity observations; and finally
- (6) (i) that the Mysore Government shall restrict the excess area of irrigation under canals and channels above the three standard gauging stations to 5,000 acres;  
  
(ii) That while water is being impounded in the Krishnarajasagara in accordance with the formula laid down in rule 10 of the agreement no compensation water need be passed down to Madras on account of the excess area irrigated under canals and channels taking off above the three standard gauging stations;

(iii) that compensation water (calculated as per the terms of rule 17 of Annexure I to the Agreement of 1924) shall be passed down to Madras during the irrigation season on non-impounding

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<sup>72</sup> This agreement is no longer valid as Agreement of 1924 has been superseded by decision of CWDT dt 5.2.2007

days (a) from the 10<sup>th</sup> June to 10<sup>th</sup> January inclusive irrespective of the level in the Krishnarajasagara as also (b) during the periods from 28<sup>th</sup> May to 9<sup>th</sup> June inclusive and from 11<sup>th</sup> January to 27<sup>th</sup> January inclusive provided that the level in the Krishnarajasagara is not less than 118 on the 15<sup>th</sup> of May and not less than 124 on the 1st January respectively.

( N. MADHAVA RAU )  
Chief Secretary to Government  
Mysore

( A. G. LEACH )  
Secretary to Government,  
Public Works and Labour Departments  
Madras

**STATEMENT OF AGREEMENTS<sup>73</sup> RESULTING FROM A DISCUSSION AT GOVERNMENT HOUSE, MYSORE ON THE 18<sup>th</sup> JUNE 1929, BETWEEN MESSERS W.J.J. HOWLEY AND S.G. FORBES, ASSESSORS NOMINATED BY MADRAS AND MYSORE GOVERNMENTS RESECTIVELY, RELATING TO THE UNDERMENTIONED SUBJECTS (REFERRED TO IN THE PREAMBLE ABOVE)**

A determination of 'P' – we have agreed that 'P' shall be examined for final adoption exactly as provided for in rule 11 (ii) of the Annexure I to the Agreement of 1924 and shall be given effect to from the 1<sup>st</sup> July 1929.

Transmission losses – we have agreed that the transmission losses shall be fixed a 10 percent for use in column 7 of the sample form B given in Part II of the appendix to the Rules of Regulations of 1924 Agreement.

Evaporation from the reservoir - we recommend a tentative adoption of a correction coefficient of 0.85 pending further observations. We consider that definite proposals should be drawn up and agreed to within two months from the 1<sup>st</sup> July 1929 and the joint observations started immediately thereafter and continued for not more than three irrigation seasons.

Krishnarajasagara sluice gates coefficient - It was agreed that the coefficients for the several stages already determined should be adopted tentatively for those respective stages and that observations should be continued until the full set of coefficients have been determined and agreed upon. The tentative figures adopted should be revised from time to time as additional data is available.

Compensation water - we agreed that compensation water shall be calculated and assed down from Krishnarajasagara in exact accordance with rules 15, 16 and 17.

Ootacamund  
22<sup>nd</sup> June, 1929

S.G. FORBES  
W.J.J. HOWLEY

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<sup>73</sup> This agreement is no longer valid as Agreement of 1924 has been superseded by decision of CWDT dt 5.2.2007

## **AGREEMENT<sup>74</sup> DATED 31<sup>st</sup> MAY 1972 BETWEEN THE GOVERNMENTS OF MYSORE, TAMIL NADU AND KERAIA REGARDING CAUVERY WATERS**

Discussions were held on 29<sup>th</sup> May 1972 at New Delhi between the Chief Ministers of Mysore, Tamil Nadu and Kerala. Union Minister for Irrigation & Power and Deputy Ministers were present. The Chief Ministers were assisted by Ministers of respective States. Those present were as follows:

### **I. Tamil Nadu**

- (1) Thiru M. Karunanidhi, Chief Minister.
- (2) Thiru S. Madhavan, Minister for Law
- (3) Thiru S.J. Sadiq Pasha, Minister for Public Works

### **II. Mysore**

- (1) Shri D. Devaraj Urs, Chief Minister
- (2) Shri H.N.Nanje Gowda, Minister of State for Major Irrigation

### **III. Kerala**

- (1) Shri C.Achutha Menon, Chief Minister
- (2) Shri T.K.Divakaran, Minister for Public Works

Union Minister for Irrigation and Power stated that river problems are best settled through negotiations and this was the course the Central Government was adopting for the last few years in settling the differences on the use of waters of Cauvery. Earlier, it was aimed to arrive at an interim agreement to be valid till 1974, when the earlier Agreement of 1924 would have come up for review after 50 years, as provided in the agreement. Now, as 1974 is near, this attempt has been given up in favour of finding, an overall approach to solve the problem amicably amongst the several States. The discussions amongst the Chief Ministers revealed the general consensus on the three following points as in para 2.

2.1. A serious attempt should be made to resolve by negotiations the Cauvery dispute between the States as early as possible.

2.2. The Centre may appoint a fact-finding Committee consisting of engineers, retired judges and, if necessary, agricultural experts to collect all the connected data pertaining to Cauvery waters, its utilisation and irrigation practices as well as projects both existing, under construction and proposed in the Cauvery Basin. The Committee will examine adequacy of the present supplies or excessive use of water for irrigation purposes. The Committee is only to collect the data and not make any recommendations. The Committee may be asked to submit its report in three months' time.

2.3 Making use of the data, discussions will be held between the Chief Ministers of the three States to arrive at an agreed allocation of waters for the respective States.

3. Union Government will assist in arriving at such a settlement in six months, and in the

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<sup>74</sup> In pursuance of this agreement, a Cauvery Fact Finding Committee was constituted. The committee submitted a report in December, 1972 and additional report on 14<sup>th</sup> August, 1973. The data compiled by this Committee were accepted by the Chief Ministers in the meetings convened on 29.04.1973 and 9.10.1973.

meanwhile no State will take any steps to make the solution of the problem difficult either by impounding or by utilising water of Cauvery beyond what it is at present.

*Sd/*  
(K.L. RAO)  
31-5-72  
Union Minister for  
Irrigation and Power

*Sd/-*  
(D. DEVARAJ URS)  
31-5-72  
Chief Minister for Mysore

*Sd/*  
(M .KARUNANIDHI)  
31-5-72 Chief Minister  
for Tamil Nadu

*Sd/-*  
(C .Achutha Menon)  
31-5-72  
Chief Minister for Kerala

# KERALA-TAMILNADU AGREEMENT ON SIRUVANI DRINKING WATER SUPPLY PROJECT

## AGREEMENT

(a) THE AGREEMENT made this the Nineteenth day of August One Thousand Nine Hundred and Seventy-three between the Governor of Kerala (hereinafter referred to as "the Government of Kerala" which expression shall where the context so admits include his successors in office and assigns) of the one part and the Governor of Tamil Nadu (hereinafter referred to as "the Government of Tamil Nadu" which expression shall where the context so admits include his successors in office and assigns) of the other part.

(b) WHEREAS there exists a masonry overflow dam between latitudes 10° -58' North, 10° -57' North and between 76° -37' East and 76° -36' East at Muthukulam across the Siruvani River flowing through the State of Kerala for diverting water for drinking purposes to the Coimbatore Municipal Town in the-State of Tamil Nadu;

(c) WHEREAS the Government of Tamil Nadu now want to augment the supply of drinking water to the Coimbatore Municipal Town.

(d) WHEREAS the Government of Tamil Nadu have sought the permission of the Government of Kerala to construct a new Dam downstream of the existing dam at Muthukulam mentioned above with adequate storage capacity to supply a quantity not exceeding 1,300 M. cft. annually to the Coimbatore Municipal Town for drinking water supply purposes;

(e) AND WHEREAS the Chief Ministers of the State of Kerala and the State of Tamil Nadu met in conference on May 10, 1969 and came to a settlement regarding the construction of the dam and diversion of the water for the said purpose.

(f) Now these presents witness and it is hereby mutually agreed as follows:

- (i) The expression "Coimbatore Municipal Town" used in this agreement shall mean the area notified as such under the Tamil Nadu District Municipalities Act, 1920.
- ii) Nothing contained in this agreement shall prejudicially affect the respective rights of the Government of Kerala or the Government of Tamil Nadu to the Cauvery river system in general or the claims of the respective Governments for the water from Bhavani Basin in particular.  
Explanation:-The Cauvery River system mentioned in this clause shall mean and include the river Cauvery and all its tributaries.
- (iii) The Government of Kerala hereby agree to the diversion of water not exceeding 1,300 M. cft. (one thousand three hundred million cubic feet) measured at the intake tower from the reservoir every year to the Government of Tamil Nadu for the drinking water supply requirements of the Coimbatore Municipal Town and the neighbouring areas with effect from the date on which the new Dam and other appurtenant works are constructed and become operative commissioned partly or completely:

Provided that even before and during the course of construction of such dam and works the Government of Tamil Nadu may divert water upto an extent not exceeding 1,300 M.cft. per year.

Explanation I- For purposes of this agreement drinking water supply shall include the supply of water for domestic, community and industrial needs but shall not include irrigation purposes.

Explanation II- The year shall be the period commencing on the first day of July of every year and ending with the 30<sup>th</sup> day of June of the succeeding year.

- (iv) The Government of Kerala will construct at the cost of the Government of Tamil Nadu the Siruvani Drinking Water Supply Project subject to the rules and regulations governing the execution of 'deposit work' as mentioned in the Kerala Public Works Account Code. The Project shall consist of a dam at latitude 10°-58'-36" north and longitude 76°-38'-30" east across the Siruvani River and other appurtenant works in the Kerala territory (hereinafter referred to as "the Siruvani Drinking Water Supply Project or the project.")
- (v) Notwithstanding the provision of Clause III the project the salient technical features of which are given in Schedule I shall be constructed to make available a regulated flow of not exceeding 5 cusecs of water downstream in order to meet the riparian requirements in Kerala State.
- (vi) The salient technical features of the Project as, agreed to between the parties hereto are incorporated in Schedule I appended to this agreement.
- (vii) Suitable measuring devices will be installed at the cost of the Government of Tamil Nadu at the points of diversion of water from the reservoir in Kerala State and of commencement of the conveying main supplying drinking water to the Coimbatore Municipal Town and measurements recorded.
- (viii) The estimate for the project will be sanctioned on behalf of the Government of Tamil Nadu by the Government of Kerala as a 'deposit work' as defined in the Kerala Public Works Account Code. The Government of Tamil Nadu shall deposit with the Government of Kerala every year in two instalments such amounts as may be required by the Government of Kerala for the construction of the Project. These instalments shall become payable on the first day of January and first day of July every year; provided however that any amount found unspent at the time of payment of an instalment shall be adjusted towards the amount due under that instalment and balance, if any, alone need be paid.
- (ix) In addition to the estimated cost of the construction of the Project, the Government of Tamil Nadu shall also pay to the Government of Kerala, on demand, the excess cost, if any, incurred by the Government of Kerala in the construction of the Project due to the rise in wages of labour, cost of materials, authorised deviation, losses by fire or other unforeseen circumstances.
- (x) The Government of Tamil Nadu shall also pay to the Government of Kerala centage charges, at the rate of 16% (sixteen per cent) of the actual cost of construction of the Project. Such payment shall be made on demand made by the Government of Kerala after the completion of the project.
- (xi) The Government of Kerala shall maintain the project, when completed, at the cost of the Government of Tamil Nadu.
- (xii) The Government of Tamil Nadu shall deposit with the Government of Kerala in advance every year before the end of the financial year the estimated cost of maintenance of the Project for the succeeding financial year. The actual expenditure incurred on maintenance of the project including establishment charges and also agency charges at 6% of the above expenditure (six per cent) will be adjusted by the Government of Kerala against this advance amount and if the advance amount is found insufficient, the deficit amount will be adjusted against the advance to be deposited for the subsequent financial year.
- (xi) The Government of Kerala and the Government of Tamil Nadu agree that a Joint Control Board consisting of officers of both the State Governments constituted for the purpose of regulation



and supply of water for the drinking water supply requirements of the Coimbatore Municipal Town and the neighbouring areas in accordance with the terms and conditions herein contained. The rules relating to the constitution, function and powers of the Joint Control Board are specified in Schedule II to this Agreement.

- (xiv) The project shall be exclusively under the possession and control of the Government of Kerala. The regulation and supply of water from the reservoir shall be done by an officer of the Government of Kerala and the regulation and supply of water through the conveying main shall be done by an officer of the Government of Tamil Nadu. In both these matters, both these officers shall be controlled by the Joint Control Board.
- (xv) It is also agreed that free access shall be given by either Government to the officers authorised by the other government to the Project and all connected installations in both the Kerala and Tamil Nadu States and also to all records and books of accounts relating to the supply and utilisation of such waters.
- (xvi) The Government of Kerala shall make available the extent of Government lands required for the Project within the Kerala State. If any property not owned by the Government of Kerala is found necessary for the reservoir or the Project the Government of Kerala shall acquire such lands at the cost of the Government of Kerala. The Government of Tamil Nadu shall pay to the Government of Kerala every year an amount calculated at the rate of Rs.125 per hectare for the use of the entire land made available for the Project. This amount due for the year shall be paid by the Government of Tamil Nadu to the Government of Kerala on or before 1<sup>st</sup> day of April that year. The cost of rehabilitation of families likely to be evicted or religious institutions to be shifted will be charge to the cost of the construction of the project.
- (xvii) Notwithstanding anything contained in clause (xvi), the rate of Rs.125 per hectare per annum therein mentioned shall be subject to review by mutual agreement once in 20 (twenty) years from the commissioning of the Project.
- (xviii) The Government of Kerala shall construct a road to the dam site from the Kerala side. The Government of Tamil Nadu shall pay to the Government of Kerala on demand a sum of Rs.15 lakhs(Rupees fifteen lakhs) towards the cost of construction of the said road.
- (xix) In case the Project is abandoned by the Government of Tamil Nadu and expressly declared so in writing the entire project shall become the property of the Government of Kerala and the Government of Tamil Nadu shall not have any right to claim any amount as compensation or damage.
- (xx) Every dispute, doubt, or difference of opinion or question which may at any time arise between the parties hereto touching or arising out of or in respect of this agreement or the subject matter thereof shall be referred to the arbitration of an Arbitrator to be agreed upon between the parties and failing such agreement, to two Arbitrators one to be appointed by each party hereto and in case of difference of opinion between the two Arbitrators to an Umpire appointed by the said two Arbitrators not later than one month from the date on which such difference of opinion occurs and the decision of the Arbitrator of such Arbitrators or the Umpire as the case may be shall be final and binding on both the parties. The provisions contained in the Indian Arbitration Act shall apply to the proceedings connected with this arbitration.
- (xxi) The Government of Tamil Nadu shall pay to the Government of Kerala the amounts specified in the various clauses of this agreement at the time or times specified in those clauses. In case the Government of Tamil Nadu fails to make such payment on the due dates, the Government of Tamil Nadu shall pay to the Government of Kerala the actual damages caused to the Government of Kerala due to such breach;

Provided that in case the Government of Tamil Nadu fails to pay the amount of damages when demanded by the Government of Kerala, the Government of Tamil Nadu shall be liable to pay interest at 12 per cent per annum for the entire amounts due under the agreement as also

the damage amount fixed under this clause.

- (xxii) The Government of Kerala agree to take all possible steps to complete the project in about four years.
- (xxiii) This agreement shall come into force with immediate effect and shall remain in full force and effect for a period of 99 (ninety-nine) years provided that this agreement shall, at the option of the Government of Tamil Nadu, be renewed by mutual consent for such period and subject to such terms and conditions as may then be mutually agreed upon.
- (xxiv) The schedules appended to this agreement shall form part of this agreement.

In witness thereof Shri T. Madhava Menon, Special Secretary to the Government of Kerala, Water and Power Department, for and on behalf of the Governor of Kerala and by the order and direction of the Governor of Kerala and Thiru M.M. Rajendran, Secretary to the Government of Tamil Nadu, Public Works Department for and on behalf of the Governor of Tamil Nadu and by order and direction of the Governor of Tamil Nadu have hereunto set their hands the day and year first above written.

(Sd/-)

Signed by Shri T. Madhava Menon,  
Special Secretary to the Government of Kerala,  
Water and Power Department, Trivandrum.  
For and on behalf of the Governor of Kerala.

In the presence of witnesses:

(Sd.)

(1) Shri V.U.K. Nambissan,  
Joint Secretary to Government of Kerala,  
Water and Power Department.

(Sd)

(2) Shri K. Bharathan,  
Chief Engineer, General and projects,  
Kerala Public Works Department,  
Trivandrum.

(Sd)

Signed by Thiru M. M. Rajendran,  
Secretary to the Government of Tamil Nadu  
Public Works Department, Madras.  
For and on behalf of the Governor of Tamil Nadu

In the presence of witnesses:

(Sd. )

(1) Thiru S. Vadivelu,  
Additional Secretary to Government of  
Tamil Nadu, Law Department, Madras.

(Sd. )

(2) Thiru S. M. Sulaiman,  
Joint Secretary to Government of Tamil Nadu,  
Public Works Department, Madras.

## SCHEDULE I

(See Paragraph V of the Agreement)

### SIRUVANI DRINKING WATER SUPPLY SCHEME FOR COIMBATORE TOWN DAM AND APPURTENANT WORKS SALIENT TECHNICAL FEATURES

Main Item:

1. Masonry dam across the Siruvani River consisting of bulk head and spillway
2. An intake tower along with suitable measuring devices
3. Other connected works such as,
  - (i) Approach roads
  - (ii) Buildings for offices, quarters etc.
  - (iii) Campus roads
  - (iv) Electrification, water supply and other facilities

### TECHNICAL FEATURES

#### Masonry dam

|                                  |   |
|----------------------------------|---|
| Location                         | Latitude 10°-58' -36" North and Longitude 76° - 38' -30" East |
| Catchment area                   | 22.47 sq. Km. (8.77 sq.miles)                                 |
| Bed Level at dam site            | 829.02 m. (2723 ft.)  |
| F.R.L. of the proposed reservoir | 878.50 m.   |
| M.W.L. of the reservoir          | 881.50 m.   |
| Live storage capacity            | 18.41 M. M <sup>3</sup> (650 M.cft.)                          |
| Top level of dam                 | 883.00 m.   |
| Width of road way over the dam   | 4.36 m. (14 ft.)  |
| Type of dam                      | Masonry straight gravity                                      |
| Length of dam at top             | 224.00 m. (734 ft.)   |
| Crest Level                      | 878.52 m.   |
| Spillway discharge capacity      | 435 m <sup>3</sup> /Sec. (15300 cusecs).                      |
| Length of spillway               | 49.40 m. (162.0 ft.)  |

Pipe sluice to draw 5 Cusecs of water for meeting riparian rights will be at suitable level

Note: Any change in the above will be effected only with the concurrence of both the Governments.

SCHEDULE II  
(Clause XIII of the Agreement)

CONSTITUTION, FUNCTIONS AND POWERS OF THE JOINT CONTROL BOARD FOR THE  
SIRWANI DRINKING WATER SUPPLY PROJECT

1. Constitution

(1) The Joint Control Board (hereinafter referred to as "the Board") will be constituted with effect from the date of completion of the project.

(2) The Board shall consist of: -

1. The Chief Engineer, Projects, Kerala
2. The Chief Engineer, Public Health Engineering Department, Kerala
3. The Chief Engineer, Tamil Nadu Water Supply and Drainage Board
4. The Chief Technical Officer in charge of the Coimbatore Drinking Water Supply Scheme, Tamil Nadu.

(3) The Chief Engineer, Projects, Kerala and the Chief Engineer, Tamil Nadu Water Supplies and Drainage Board shall function as the Chairman of the Board every alternate year. The Chief Engineer, Projects, Kerala will be the first Chairman of the Board. He will hold office for one year from the date of formation of the Board. Thereafter, the Chief Engineer, Tamil Nadu, Water Supply and Drainage Board and the Chief Engineer, projects, Kerala will function as, Chairman alternately each year.

(4) The Governments of Kerala and Tamil Nadu shall respectively have the power to nominate any other officers in place of any of the officers mentioned above.

II. Power and Functions

The Board shall be responsible for:

(a) the proper regulation of the supply of water from the Project to the Coimbatore Municipal town and the neighbouring areas for drinking water supply purposes in accordance with clause XIII of the agreement:

(b) the proper operation of the outlet, sluices to meet the requirements of the water supply scheme from time to time as decided by the Board.

(c) the measurement of the quantity of water released daily for the water supply scheme; and

(d) any other matter incidental to the above as may be referred to the Board by the two Governments.

III. Meeting of the Board

The Board shall meet each year as often as possible and decide on a judicious management of waters in accordance with the provisions of this agreement.

IV. Communication of Decisions and their Implementation

It shall be the duty of the Chairman to communicate the decisions of the Board to the Chief Engineers concerned. The Chief Engineers concerned shall implement them without delay.

V. Disagreement to be Reported to Government

(a) If there is any disagreement between the members of the Board on any matter within the

purview of the Board, the Chairman of the Board, shall report the matter to the Governments of Tamil Nadu and Kerala at the earliest, and in any case within a week, with a detailed note explaining the facts of the case, the view points expressed by, the representatives of both the Governments and the points of disagreement. He shall also be at liberty to record his recommendations in the matter.

(b) Upon receiving such a report, the two Governments shall as soon as may be, discuss the matter and arrive at a settlement.

Sd/-  
(RAJENDRAN)

**UNDERSTANDING<sup>75</sup> REACHED AT THE INTER-STATE MEETING HELD ON 25<sup>th</sup> AND 26<sup>th</sup> AUGUST 1976 AMONGST THE GOVERNMENTS OF KARNATAKA, KERALA AND TAMIL NADU REGARDING THE USE AND DEVELOPMENT OF CAUVERY WATERS**

It is agreed that optimum use be made of the waters of the Cauvery. It is further agreed that there is scope for effecting economies in the present use of the Cauvery waters without detriment to existing ayacuts and that maximum possible economics in the present use of Cauvery waters be effected. Waters thus saved shall be used to provide additional multipurpose benefits. It is recognised that there is need for integrated operation of the reservoirs in the basin and for regulation of the releases from various reservoirs to ensure optimum utilisation and equitable distribution of the waters. With a view to achieving the aforesaid objectives, it is hereby agreed as under:

- (1) Existing utilisation of Cauvery waters is agreed as 671 TMC comprising 489 TMC by Tamil Nadu, 177 TMC by Karnataka and 5 TMC by Kerala.
- (2) In a normal year, the existing areas under irrigation shall be fully protected.
- (3) In the lean years, the manner of sharing the available waters shall be worked out by a Committee of representatives of the Central and State Governments and submitted for consideration at the next meeting of Chief Ministers.
- (4) This Committee shall also work out the quantities of surplus waters presently available for use. The waters surplus over the existing use of 671 TMC shall be shared in the ratio of 30 : 53 : 17 amongst the States of Tamil Nadu, Karnataka and Kerala respectively.
- (5) Tamil Nadu and the Karaikal region of Pondicherry shall take steps to effect a saving of 100 TMC from present use and Karnataka shall take steps to effect a saving of 25 TMC from its present use by various measures such as modernisation of existing irrigation

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<sup>75</sup> The provisions of the Understanding could never be implemented. In the end Cauvery Water Disputes Tribunal was constituted on June 2, 1990. The Tribunal submitted a report and decision on 5.02.2007. The Tribunal determined the utilisable quantum of waters of the Cauvery at Lower Coleroon Anicut site on the basis of 50% dependability to be 740 thousand million cubic feet-TMC (20,954 M.cu.m.). The Tribunal allocated the waters of the river Cauvery in three States of Kerala, Karnataka and Tamil Nadu and U.T. of Pondicherry for their beneficial uses as mentioned hereunder:-

|      |                           |         |
|------|---------------------------|---------|
| i)   | The State of Kerala-      | 30 TMC  |
| ii)  | The State of Karnataka -  | 270 TMC |
| iii) | The State of Tamil Nadu - | 419 TMC |
| iv)  | U.T. of Pondicherry -     | 7 TMC   |
|      |                           | 726 TMC |

In addition, Tribunal reserve some quantity of water for (i) environmental protection and (ii) inevitable escapages into the sea as under:-

|  |                          |
|--|--------------------------|
| i) Quantity reserved for environmental protection.             | - 10 TMC                 |
| ii) Quantity determined for inevitable escapages into the sea. | - 4 TMC                  |
|  | 14 TMC                   |
|  | Total (726 + 14) 740 TMC |

The order has been published in the official Gazette on 19<sup>th</sup> Feb, 2013.

systems, improvement in water management, reducing seepage losses etc.

(6) The savings shall be effected within a maximum period of 15 Years. The Central Govt. will devise ways and means to provide necessary outlays (made up of States' contribution and Central assistance) in Plan for the improvement measures aforesaid. At the end of five years, Tamil Nadu shall save 20 TMC and Karnataka 5 TMC. These savings shall be distributed in the ratio of 4:138:63 amongst Tamil Nadu, Karnataka and Kerala respectively. In the sixth year, a review will be made of the progress achieved, by the three Chief Ministers and the Union Minister of Agriculture and Irrigation who will lay down programme for next five years and give appropriate directions.

(7) At the end of 15 years, the savings shall be distributed amongst the three States as under:

|            |                   |
|------------|-------------------|
| Tamil Nadu | ... 4 TMC         |
| Karnataka  | ... 87 TMC        |
| Kerala     | ... <u>34 TMC</u> |
|            | <u>125 TMC</u>    |

(8) Out of the quantity so distributed 2 TMC each shall be allowed for industrial and domestic water supply.

(9) Both states of Karnataka and Kerala shall be allowed to use the quantities of water allocated out of the savings on such projects as they may consider necessary for the efficient use of water in their territory. The sub-basinwise break-up of use by Kerala of 34 TMC shall be decided in a meeting of the representatives of the three States and the Centre.

(10) A Cauvery Valley Authority consisting of one Irrigation Engineer of appropriate status from each of the States, namely, Tamil Nadu, Karnataka, Kerala as Members and an Irrigation Engineer of appropriate status not belonging to any of the three States nominated by the Central Govt. as Chairman shall be constituted.

(11) The functions and rules of procedure of the Cauvery Valley Authority as drafted by the Committee of Secretaries of 3 States shall be considered at the next meeting of the Chief Ministers.

(D. DEVARAJ URS)  
Chief Minister Karnataka

(K.G. ADIYODI)  
Minister for Irrigation  
and Forest, Kerala

(MOHAN LAL SUKHAPIA)  
Governor, Tamil Nadu

(JAGJIVAN RAM)  
Union Minister of Agriculture & Irrigation  
Dated: New Delhi, the 26<sup>th</sup> August, 1976.