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MOST IMMDEDIATE

File No. T-40011/4/2019-GW
Government of India
Ministry of Water Resources, River Development & Ganga Rejuvenation
(Ground Water Desk)
****

635, Shram Shakti Bhawan
Rafi Marg, New Delhi
Dated: 06.02.2019

To

The Chairman
Central Water Commission
R.K. Puram
Delhi.

Sub: Petition of Shri Jaysukhbhai O Patel, Oreva Hoouse, 2nd Floor, Thaltej Cross Road, S G Highway, Ahmedabad, Gujarat – 380054.

Sir,

I am directed to enclose herewith the petition received from PMO referred above and to request that input on the above proposal/petition may be submitted to the Ministry.

Encl: A/a

Yours faithfully

(A. K. Wahi)
Under Secretary to the Govt. of India
Telephone No. 23716928
e-mail: usgw-mowr@nic.in

OREVA®

Ajanta Manufacturing Pvt. Ltd. (OREVA Group)

Ahmedabad Office: OREVA House, 2nd Floor, Thaltej Cross Road, S.G. Highway, Ahmedabad - 380 054, Gujarat, India
Ph.: +91-79-71304445, E-mail: info@oreva.com, Web: www.oreva.com
Morbi Office: Rajkot-Morbi Highway, Morbi-363641, Dist.: Rajkot, Gujarat, India, Ph.: +91-2822-254444.
Plant: OREVA Nagar, 8-A National Highway, Vandhiya, Pin: 370 150 (Kutch), Gujarat, India. Ph.: +91-2837-278244/45/46, Fax: +91-2837-278273

To,

January 25, 2019

OFFICE OF SECRETARY (WR, RD&GR)
568106
Date 31/1/2019

Respected Mr. U P Singh Saheb (IAS),
Secretary,
Ministry of Water Resources, River Development and Ganga Rejuvenation,
Government of India
Room No. 412, Shram Shakti Bhavan,
Rafi Marg,
New Delhi-110 001

Subject : **Petition of Shri Jaysukhbhai O. Patel M/s Ajanta Manufacturing Pvt. Ltd.(AMPL),Ahmedabad (Gujarat)**

PMO's Reference : **PMOPG/D/2019/0018695 dated 16.01.2019**

Our Reference :**1. Our Letter dated 11.01.2019 addressed to your office**

2. Our meeting dated 15.05.2018 at 4.00 PM at your office to discuss salient features of our project called "RANN Sarovar"; a proposal to create storage facility in the Little Rann of Kutch (Gujarat) with a focus on harvesting flood water of rivers terminating.

Respected Mr. U.P.Singh (IAS),

Happy Republic Day !!

In response to our letter dated 08.01.2019 addressed to Honorable Prime Minister Shri Narendrabhai Modi on the captioned project of Rann Sarovar, the PMO has referred the matter to Ministry of Water Resources, River Development and Ganga Rejuvenation treating the same as petition vide their letter No. PMOPG/D/ 2019/ 0018695 dated 16.01.2019 (Copy enclosed)

In this connection, we reminiscence our meeting held at your office on the 15th May, 2018, wherein the following dignitaries, 3 from each side, were present:

1. Mr. U P Singh, Secretary Saheb, Ministry Water Resources, RD & GR
2. Mr.Akhil Kumar, Jt. Secretary Saheb Ministry Water Resources, RD & GR

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3. Mr.Sanjay Kundu, Jt. Secretary Saheb Ministry Water Resources, RD & GR
4. Mr. Jaysukhbhai O. Patel MD, AMPL (Proponent of Rann Sarovar Project)
5. Shri R. G. Bhatt (Ex. Chief Engineer, GOG)
6. Shri Ajay Nathwani (PRO, AMPL)

The captioned meeting was chaired by your good selves; wherein salient features of our aforesaid proposed project was discussed.

Sir, as detailed in the initial paragraph the matter has now been referred to your office. We shall indeed be grateful to your good self if you kindly take our proposal forward suitably ASAP. We are confident that under your strong and meritorious leadership and guidance, the project will get momentum to set an innovative milestone to bring about a permanent solution to water scarcity of Kutch and its surrounding districts in the State of Gujarat. If need be, we, (me and my technical team), are ready to visit your office at your convenience.

We enclose the followings for your ready reference:

1. Copy of our letter dated 11.01.2019 written to your office.
2. Copy of a PMO's letter No. PMOPG/D/2019/0018695 dated 16.01.2019
3. Booklet on captioned project of Rann Sarovar.

We solicit your meritorious guidance & support in the matter, please

Thanking You

Best Regards

Yours Truly,

Jaysukh O. Patel
Proponent of the Project & Managing Director
Ajanta Manufacturing Pvt Ltd.
Ajanta Oreva Group-Morbi (Gujarat)

Encl : As stated above

Ajanta Manufacturing Ltd. (OREVA Group)

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Date: 11/01/2019

To,

U.P. Singh, IAS
Secretary
Ministry of Water Resources
River development & Ganga Rejuvenation
Government of India.
Room no- 412,Shram shakti bhavan,
Rafi marg, New delhi – 110001.

Subject: Development of Little Rann of Kutch – "Rann Sarovar".

Respected Sir,

Namaskar....!!

I am writing this letter, in continuation with my previous letters and our personal discussion regarding Development of Little Rann of Kutch- "Rann Sarovar".

Subsequent to our meeting, we have fine-tuned the proposal with significant technical and other inputs. I have personally discussed the concept and its details with many eminent personalities, and I am happy to inform that their response is highly encouraging.

Sir, our State Government has been the pioneer in the field of "Water Resources Management" and has taken various path-breaking initiatives, both, at micro and macro levels, with successful implementation and results.

Development of "Rann Sarovar" would be one of the most essential and important project for our state, as water, the critical scarce resource is depleting very fast.

Sir, with our per capita water availability of @700 cum/person/year has already put us under "Water Stressed" condition and our state has started feeling the heat of the issue.

Creation of large storages and harnessing water resources, which otherwise would go waste to the sea, is one of the most immediate measure, that we need to takeup. This project, apart from the water resources development, would entail many other added advantages like

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- **Irrigation**
- **Land Reclamation**
- **Salinity Ingress Prevention**
- **Development of agriculture and allied agro based industries**
- **Tourism Development**
- **Aqua culture and fishing**
- **Provision of adequate water and grass for the wild life (Wild Ass- Ghudkhar)**
- **Ground water recharge and improvement of groundwater quality**
- **Overall economic development of the area and appreciation in land value**
- **Economic upliftment of rural population, particularly salt pan workers, fisher-folk with creating self-employment opportunities with good economic and social returns.**
- **Development of Animal Husbandry and dairy industry**
- **Effective utilization of wind and solar energy**

Sir, I am submitting a brief note along with the salient features of the concept, few sketches and a master map.

The proposal comprises broadly of two main components

i. **Construction of Earthen-Bunds, along the fringe area, cutting canals and allied structures.**

ii. **Conversion of Surajbari old bridge into Bandhara cum Weir.**

Preliminary studies indicates that with this concept we can harness

i. **The excess flood water from rivers from North Gujarat and part of Saurashtra region (e.g. Banas, Sarswati, Rupen, Umai, Chandrabhaga, Pulka, Godra, Kankavati, Brahmni, Machhu etc.)**

ii. **Excess water from Narmada, through the existing canal distribution network**

iii. **Excess flood water of Mahi-Kadana through SujlamSuflam Spreading canal (with**

iv. **same up gradation)**

v. **Even excess waters of river of central Gujarat and some rivers of the Saurashtra region could also be utilized.**

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Sir, I appreciate the fact that this being the challenging and complex project, detailed surveys, investigations and studies are essential. A list of surveys, investigations and studies is attached.

After consideration of detail, I request you to take up the issue and direct the respective department to initiate the working.

I am sure, with your visionary guidance and leadership; our state would achieve another milestone in the field of "Innovative Water Resources Management".

Regards,

Thanking you

Ajanta manufacturing Pvt.Ltd.

JaysukhBhai O. Patel

(Managing Director)

Mobile No :- 8980008816

Mobile No :- 9825030346

Ajanta OREVA Group Of Companies

Morbi (GUJARAT)

सत्यमेव जयते

प्रधान मंत्री कार्यालय
Prime Minister's Office

नई दिल्ली- 110011
New Delhi- 110011

Sub: Petition of SHRI JAYSUKHBHAI O PATEL
OREVA HOUSE 2ND FLOOR
THALTEJ CROSS ROAD
S G HIGHWAY
AHMADABAD
GUJARAT-380054

A letter/gist of oral representation dated 08/01/2019 received in this office from SHRI JAYSUKHBHAI O PATEL is forwarded herewith for action as appropriate. Reply may be sent to the Petitioner and a copy of the same may be uploaded on the portal.

[SONU KUMAR]
SECTION OFFICER

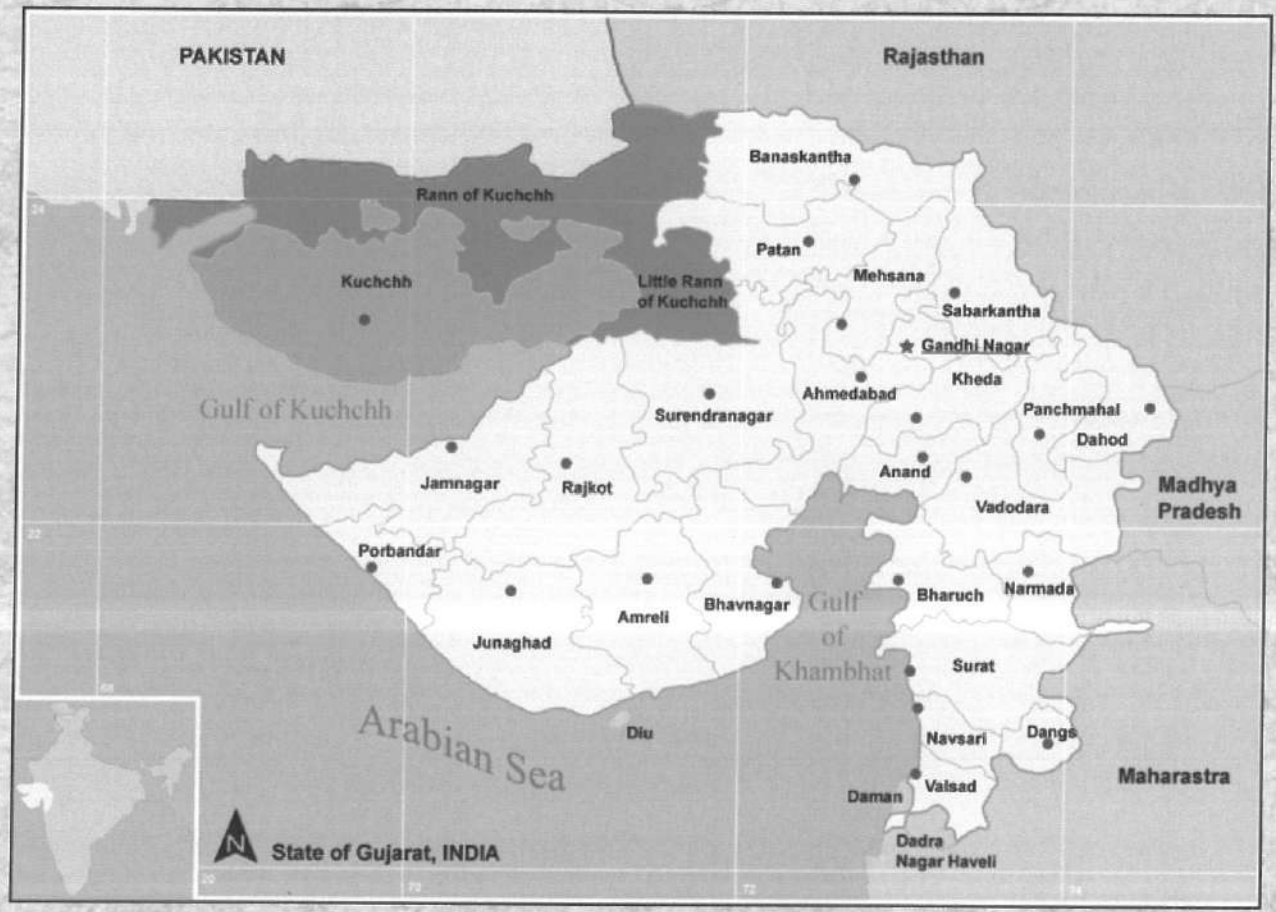
SECRETARY,MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUV

PMO ID No.:PMOPG/D/2019/0018695 Dated: 16/01/2019

Copy for information to :
SHRI JAYSUKHBHAI O PATEL
OREVA HOUSE 2ND FLOOR
THALTEJ CROSS ROAD
S G HIGHWAY
AHMADABAD
GUJARAT-380054

Note:- Status of the grievance can be tracked through internet at https://pgportal.gov.in/status by entering registration no. PMOPG/D/2019/0018695

Proposed "Rann Sarovar"



Presented By:
Jayshukhbhai Patel
Managing Director
Ajanta- OREVA Group

Ajanta® QUARTZ SINCE 1971

OREVA® LED LIGHTING

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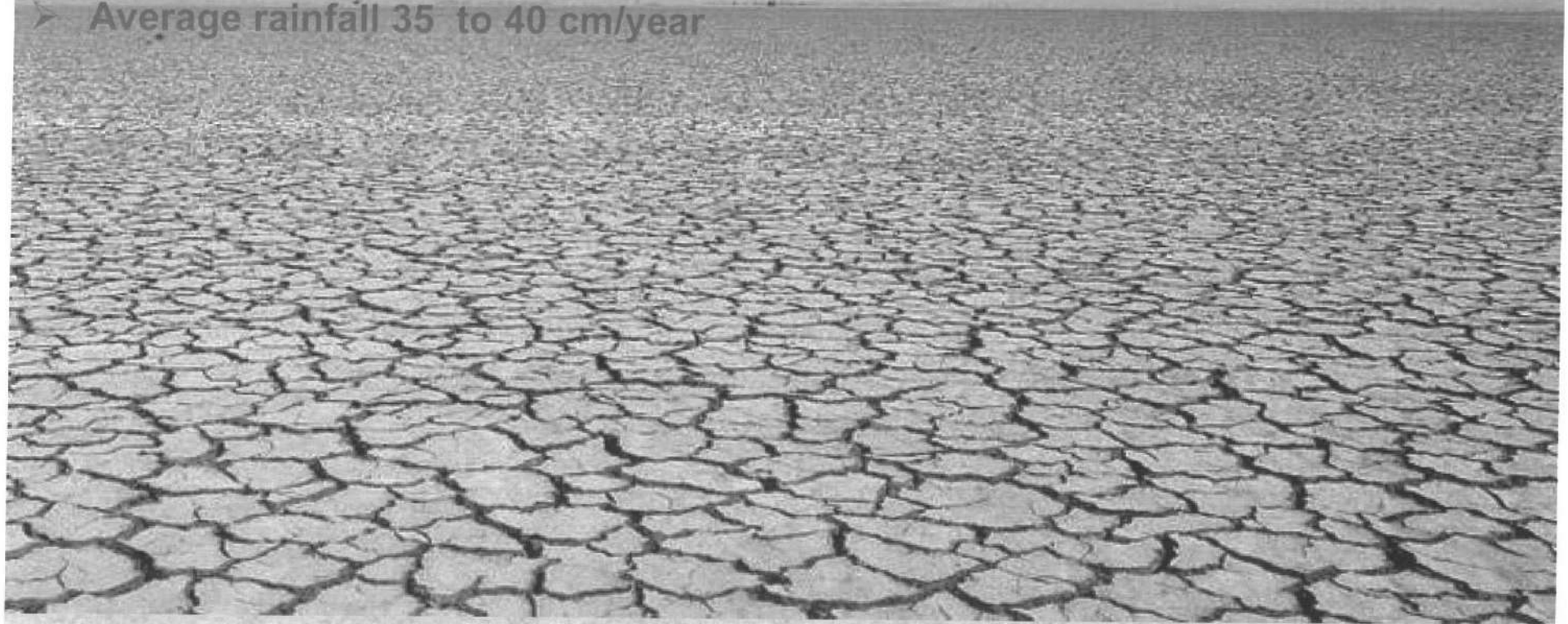
-:Salient Feature of Little Rann of Kutch:-

- Rann of Kutch @ 17,000 Sq.km.
- Little Rann of Kutch @ 5,000 Sq.km.
- 74 bets and islands
- Annual flooded with @ 0.5m to 1.0m water depth
- Inundation with tidal water + river flows
- Average rainfall 35 to 40 cm/year



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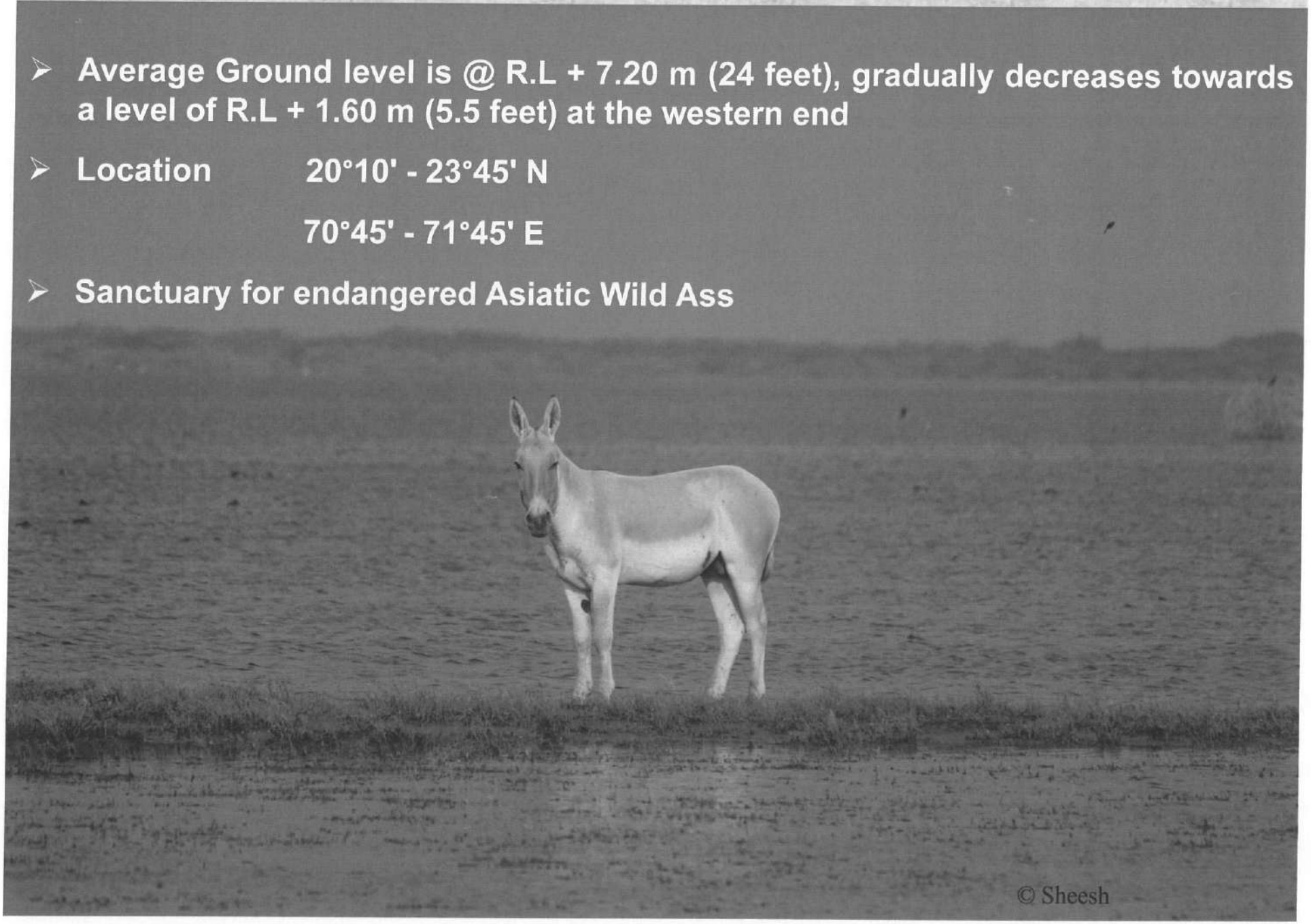
-:Salient Feature of Little Rann of Kutch:-

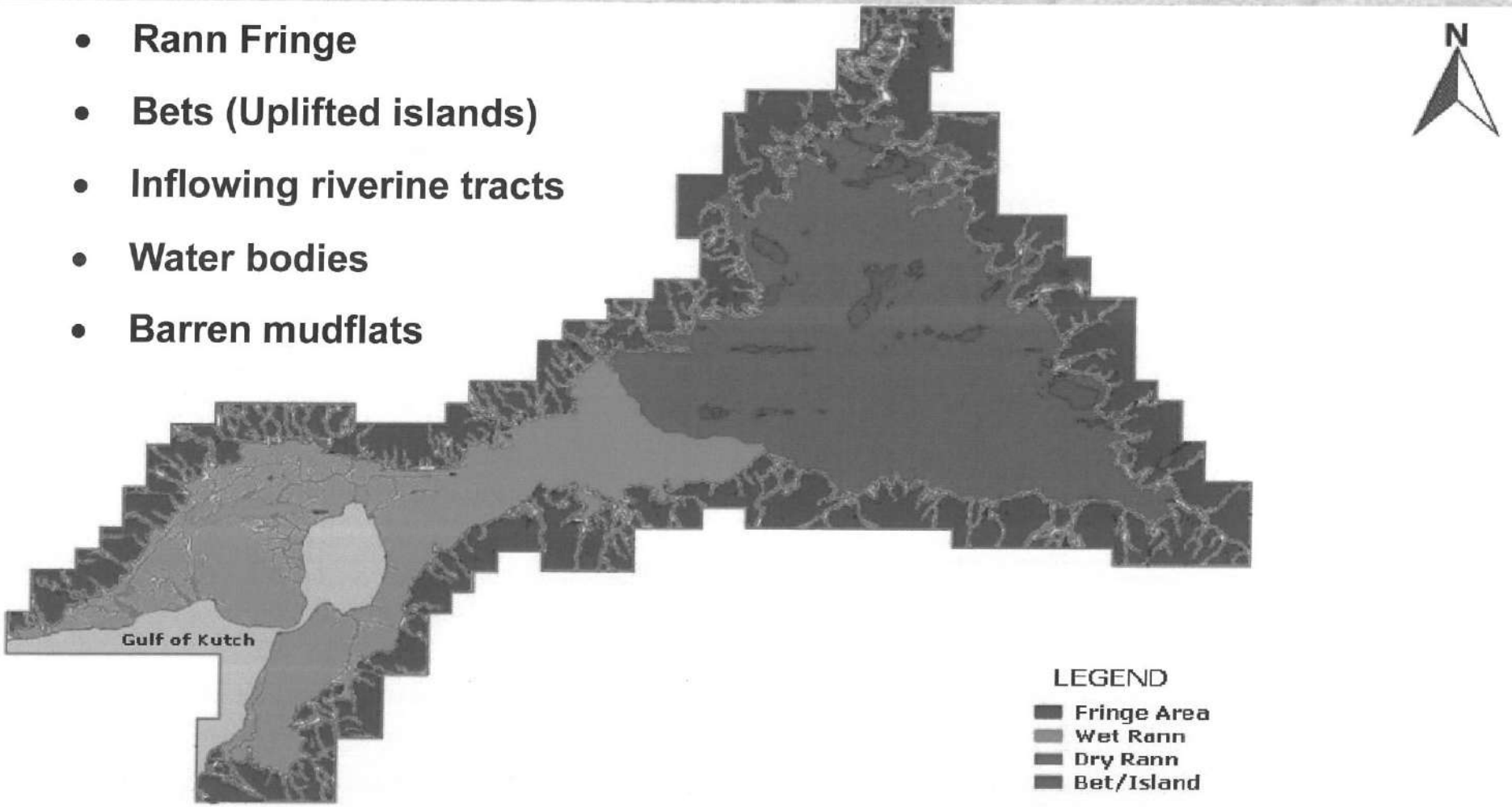
- Average Ground level is @ R.L + 7.20 m (24 feet), gradually decreases towards a level of R.L + 1.60 m (5.5 feet) at the western end
- Location 20°10' - 23°45' N

  70°45' - 71°45' E
- Sanctuary for endangered Asiatic Wild Ass



-:Salient Feature of Little Rann of Kutch:-

- Little Rann of Kutch, roughly triangular in shape is a monotonously saline flat surface with annual inundation, have executed the Rann a mysterious piece of terrain.
- **Area can be divided into**
  - **Rann Fringe**
  - **Bets (Uplifted islands)**
  - **Inflowing riverine tracts**
  - **Water bodies**
  - **Barren mudflats**



-:Salient Feature of Little Rann of Kutch:-

- **Rann as a singularly flat region which is neither land nor sea which dries up during some part of a year and again inundated by saline water from the sea side and fresh water from the adjoining land area during monsoon.**

-:Salient Feature of Little Rann of Kutch:-

- This geomorphic region encompasses parts of seventy eight villages of twelve talukas of Kutch, Patan, Surendranagar, Rajkot and Jamnagar.
- The entire area act as a transition zone between the main land and the Rann, where both mingle together, loosing their characteristics.
- Rivers flowing in the entire surrounding area ultimately drains itself into the centrally lying depression that is the Little Rann of kutch.
- The rivers draining this area from north to east and towards south and south west are Banas, Saraswati, Rupen, Okaro, Umai, Chandrabhaga, Phulka, Godra, Kankavati, Brahmini, Machchhu and many more minor streams.
- Since Rann landscape is saline and remains submerged during monsoon and early winter months, few of the Wild Ass population moves to the surrounding agricultural landscape. Such seasonal migration in agricultural field results crop raiding, which causes conflict between Wild Ass and agro-pastoral communities.
- Many salt pans are operational in the area.

Salient feature of the Proposal

A. Earthen Bunds:-

- It is proposed to harvest the water of rivers, draining into Little Rann of Kutch, which includes Banas, Saraswati, Rupen, Umai, Chandrabhaga, Phulka, Godra, Kankavati, Brahmni, Machhu and many more minor streams.

- The earthen bunds are proposed to be constructed in a phased manner, starting from the fringe area and progressing towards Dry Rann.

- Partition of fringe areas with construction of multiple, low height (7m to 7.5 m) earth bund.

- Bunds' outer slopes proposed to be protected with 30 cm dry rubble pitching.

- Bund should be provided with multiple interconnecting pipes at full reservoir and level at regular intervals of 300 m to 500 m along the length.

- If feasible, the area enclosed between two parallel bunds be further subdivided by constructing cross bunds; with pipe drains.

Contd...

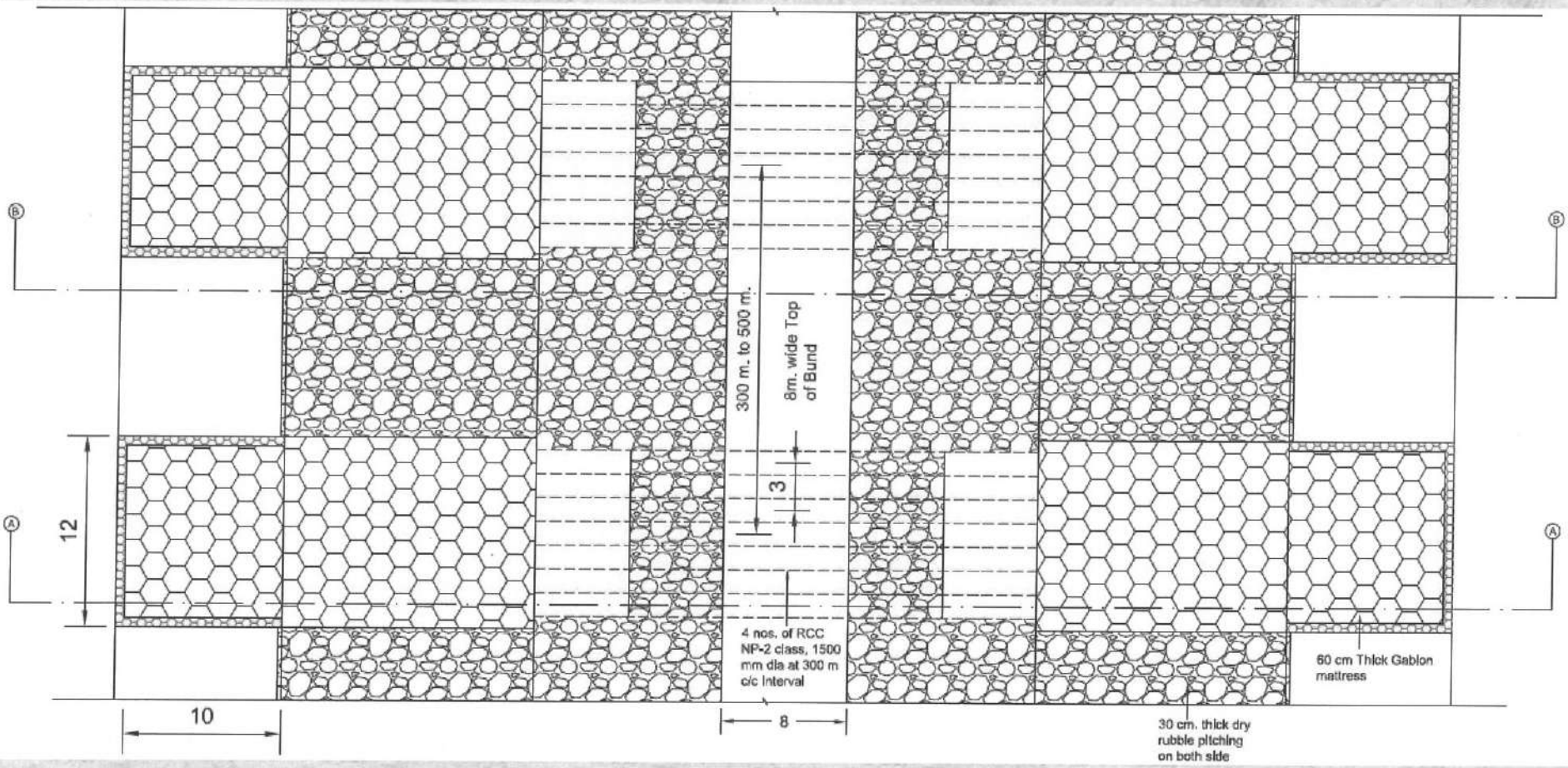
Salient feature of the Proposal

A. Earthen Bunds:-

- The slopes of bunds be kept 4:1 (H: V) with top width of 8.0 m.
- As far as possible, bunds be constructed from the local soils available. Borrow pits to be located atleast 100 m away from the toe of the bund and shall not be more than 1.5 m deep.
- It is proposed to construct cutting canals along the periphery, from which farmers can lift water. This would also help in ground water recharge. Excavated soil/ Earth from the cutting canals is to be used for construction of earthen bunds.
- **These bunds would also join few "bets" and thereby ensuring all weather connectivity.**

Contd...

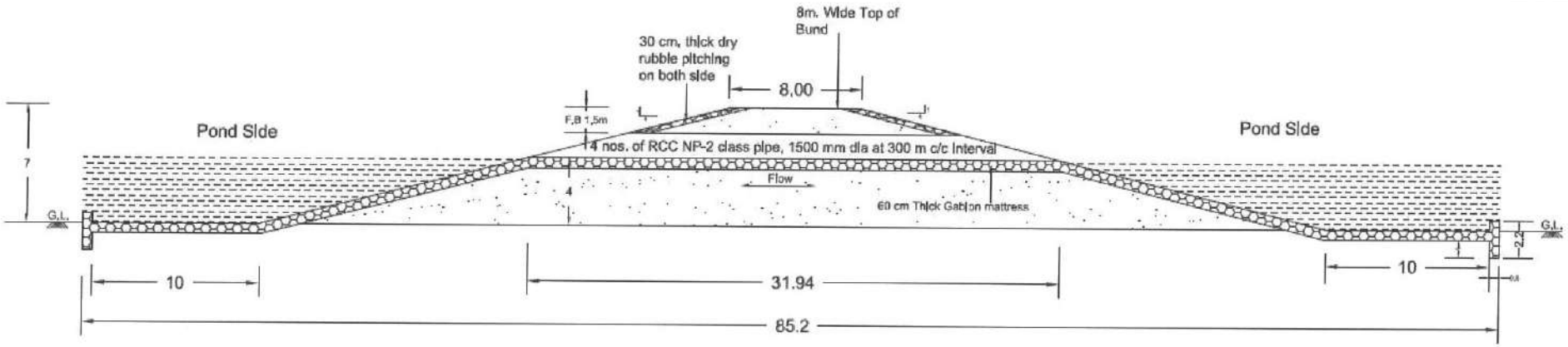
Salient feature of the Proposal



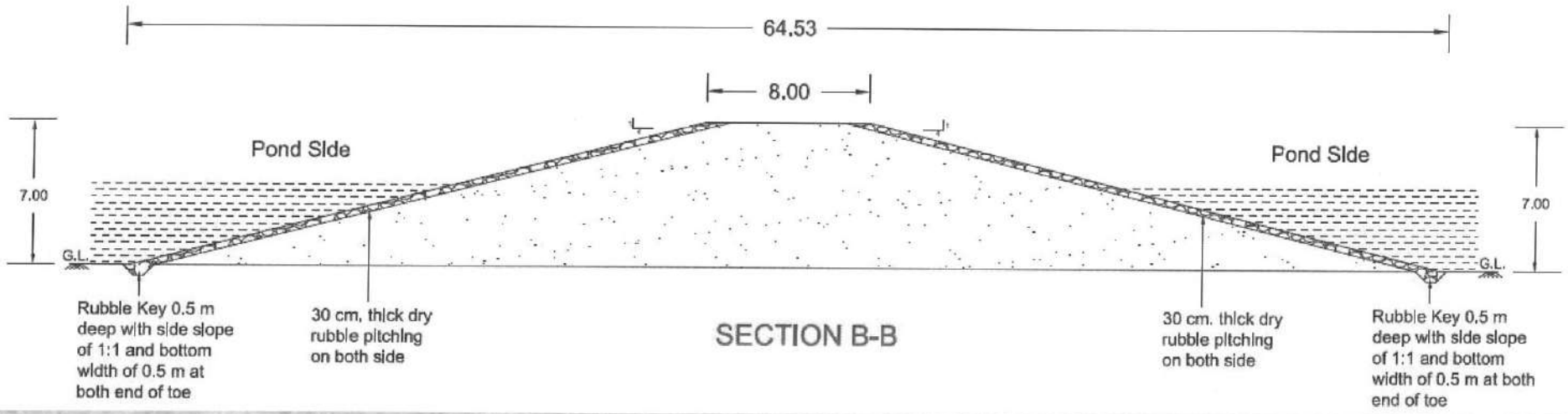
Typical Plan of Earthen Bund

Contd...

Salient feature of the Proposal



SECTION A-A

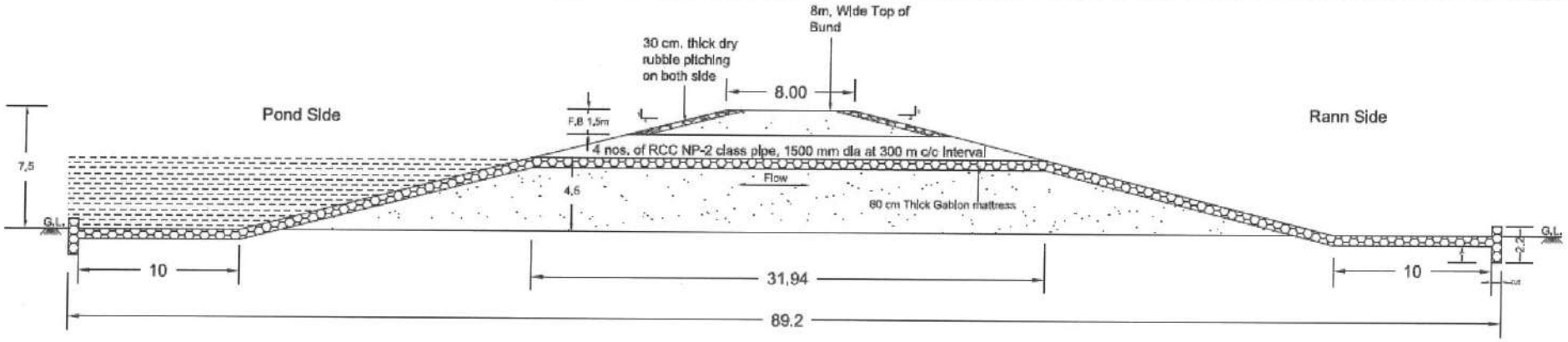


SECTION B-B

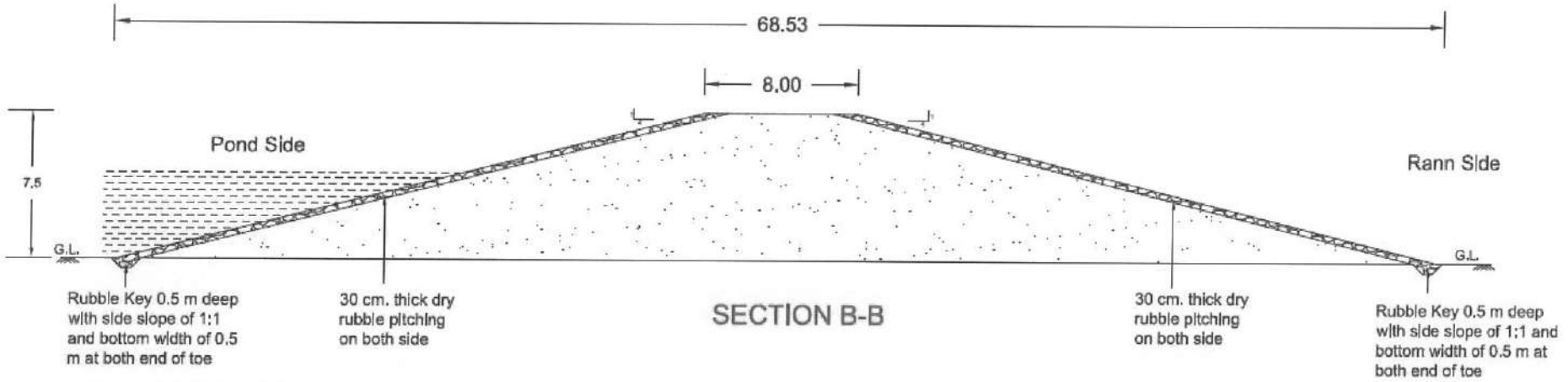
Typical Cross-Section of Earthen Bund

Contd...

Salient feature of the Proposal



SECTION A-A



SECTION B-B

Typical Cross-Section of Earthen Bund

Contd...

Salient feature of the Proposal

B. Present proposal excludes underground (subsurface) measures, because:-

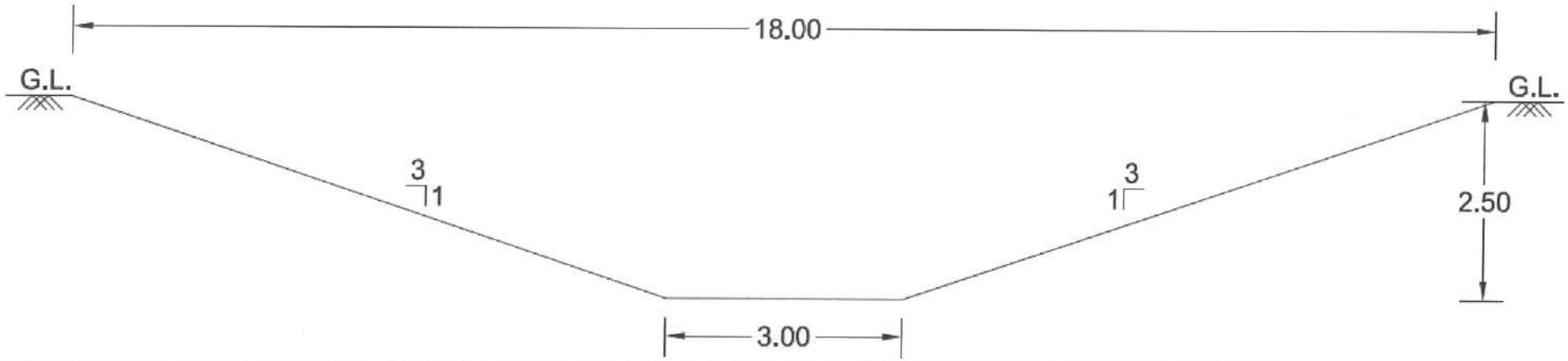
- The periphery of Little Rann of Kutch is too long (more than 200 km) to propose a continuous underground cut-off/ check dam / diaphragm.
- Ensuring structural integrity, of underground measure, in such a long stretch will be impossible. Without which, the effectiveness of underground measures will get considerably reduced.
- As per limited data available, there is inherent salinity in underground water, which extends much inland and hence prevention of subsurface salinity ingress is not first priority.
- Free movement of fresh subsurface water below the proposed bunds will in long term push the subsurface salinity towards Rann side.

Contd...

Salient feature of the Proposal

C. Cutting Canals:-

- It is proposed to construct unlined cutting canals with a flat slope, at regular intervals such cutting canal would be useful for ground water recharge and farmers can lift water from such canals.
- This being low height pumping, solar pump-sets could easily be used.



Typical Cross section of Cutting Canal

Contd...

D. Balancing of Earth Work:-

Quantity of earth/soil required for earthen bund for Phase 1		
For Internal Earthen Bund	255.41	Lakh m^3
For Outer Earthen Bund	206.72	Lakh m^3
Total Quantity for Earthen Bund	462.13	Lakh m^3
Quantity of earth/soil available from excavation of cutting canal	472.50	Lakh m^3

- Majority of the soil quantity required for the construction can be obtained from the excavation of cutting canals

Contd...

Salient feature of the Proposal

E. Conversion of Old Surajbari Bridge in Bandhara:-

- The Existing old bridge was opened to traffic in the late 1960 and was the first direct link between the regions of Kachchh and Saurashtra in the State of Gujarat.
- It has 37 spans of 32.2 m giving an overall length of 1191m.
- The form of construction is a two cell reinforced concrete box girder, with alternate spans comprising a simply supported span with cantilevers to the third point of the adjacent spans, and drop in spans between the cantilevers to complete the deck.
- The sub-structure comprise reinforced concrete piers on well caissons.
- Considerable deterioration has occurred to the structure due to reinforcement corrosion in the extremely hostile environment of salt water combined with high temperatures.

Contd...

Salient feature of the Proposal

C. Conversion of Old Surajbari Bridge in Bandhara:-

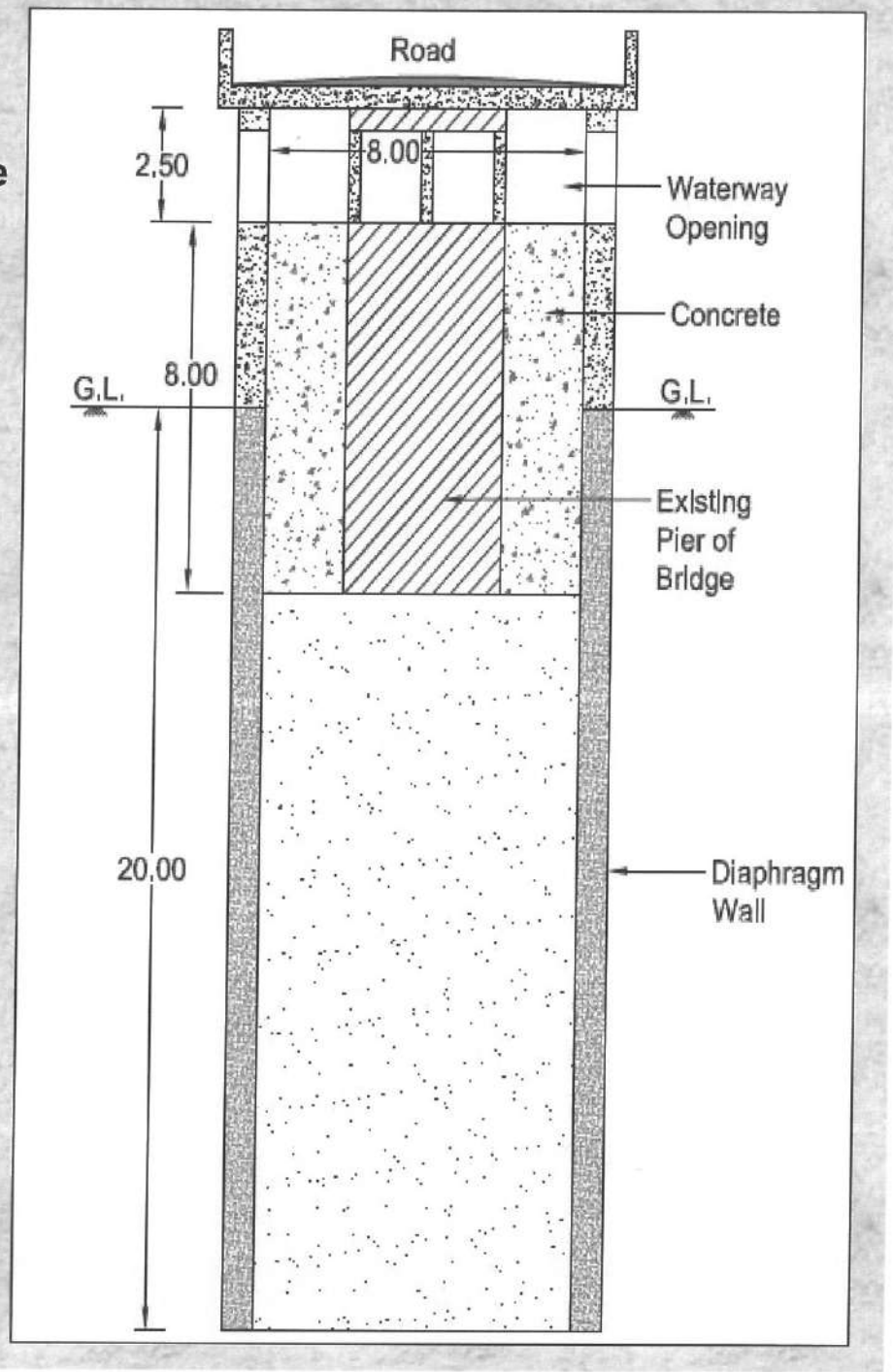
- During the earthquake of 2001, deck joints, many of the bearings, pier supports and other components damaged.
- This existing old bridge is redundant and useless for traffic movement.
- By creating freshwater storage in a phased manner, rate of salinity ingress can be checked. One of the project components is to convert this structure of existing old road bridge near Surajbari, into a sea water intrusion barrier, like Bandhara. Cutoff of the proposed converted / modified structure would also help in reducing salinity ingress and with concrete filling between the walls, the structure would at like a broad crested weir.
- Levels to be finalised, considering HHTL (Highest High Tide Level), free board requirements etc.

Contd...

Salient feature of the Proposal

Contd...

- **Proposed modification of existing old bridge for converting into Bandhara**



Salient feature of the Proposal

Preliminary Estimate of yield

Catchment area of North west and East of LRK (Upstream of Dantiwada excluded)	12500 sq. km.
Catchment area of south of LRK (Excluding area upstream of Brahmni Dam)	3000 sq. km.
Total	15500 sq. km.
Average Annual Rainfall	400 mm
Coefficient of runoff	0.4
Annual Yield (without any releases from the upstream reservoirs)	2480 MCM

Salient feature of the Proposal

Water Requirement for one additional season

Sr. No.	Description	Quantity	Unit
1	Total Peripheral area covered with cutting canals	2092059543	Sq. m.
		2092.06	Sq. km.
2	Considering 70 % cultivable area, CCA	1464.44	Sq. km.
	Say	**146445**	**Ha.**
3	Assuming No. of Watering	4	Nos.
4	Assuming Effective Depth of Watering	10	cm.
5	Assuming Irrigation Efficiency	70%	
6	Total Water Depth	40	cm
7	Water Requirement per Ha.	5714.29	m^3/ Ha.
8	Total Water Requirement	836.83	MCM
	Say	**837.00**	**MCM**

Salient feature of the Proposal

Details of Storage Capacity

Sr. No.	Description	Area (Sq.km)	Approximate Length of Earthen Bund (km)	Storage Capacity (MCM)		
				3 m Water depth	3.5 m Water depth	4 m Water depth
1	Phase-1 A	689.72	Internal Earthen Dam 59.65 km. Outer Earthen Bund 25.48 km.	2069.16	2414.02	2758.88
2	Phase-1 B	739.95	Internal Earthen Dam 45.38 km. Outer Earthen Bund 49.16 km.	2219.85	2589.83	2959.80
	Total (Phase -1A and 1 B)	**1429.67**	**179.67**	**4289.01**	**5003.85**	**5718.68**
3	Phase- 2	746.26	21.28	2238.78	2611.91	2985.04
	Total (Phase -1 and 2)	**2175.93**	**200.95**	**6527.79**	**7615.76**	**8703.72**

Salient feature of the Proposal

Preliminary Cost Estimates

Sr. No.	Item	Amount (Rs. In Crore)
1	Sub Estimate-1 for Earthen Bund	1504.04
2	Sub Estimate-2 for Cutting Canal	592.50
3	Sub Estimate-3 for Surajbari old Bridge conversion into Bandhara cum weir	210.00
4	Controlling and Spilling arrangement across bunds	25.00
	Total (Rs. in Crore)	**2331.54**

-:Further suggested Surveys, Investigations and Studies:-

Surveys:

1. Bathymetry Survey
    - Geological profile, faults
    - Sea-bed morphology (Near Surajbari)
2. Meteorological Data Collection and analysis
3. Topographic survey- Bund alignment & Reservoir area
4. Construction material survey

Investigations:

1. Geotechnical Investigation – Upto 30 m below ground level in Surajbari area otherwise upto 10 m depth.
2. Bund foundation - Geotechnical Investigation
3. Ground water depth, Quality and Aquifer details – Upto 30 m below ground level

Contd...

-:Further suggested Surveys, Investigations and Studies:-

Studies:

1. Hydro-dynamic & Sediment model Studies
   - To study the effect of closure of dam of old surajbari Bridge
   - Dam break analysis, as per requirement.
2. Water availability studies including possibilities of inter basin transfer
3. Design flood estimation
4. Storage area calculation
5. Tsunami study & Seismic studies
6. Storm surge analysis, Tidal waves Hs & Ts (significant wave height and significant wave period) and maximum wind velocities (Speed, Direction and Duration)
7. Effect on high tide, low tide & submergence
8. Land Development and Changes in land use pattern
9. Salt balance, salinity
10. Command area survey, cropping pattern, agricultural water requirement

Contd...

-:Further suggested Surveys, Investigations and Studies:-

Studies:

11. Salt Pan survey
12. Mangrove survey
13. Detailed engineering for Bund, Inlet outlet, diaphragm and other components
14. Environmental Impact Assessment and Impact on wild life
15. Socio-economic impact analysis
16. CRZ clearance
17. Estimate and Cost-Benefit Analysis

Probable sources of water in Little Rann of Kutch

- Rivers flowing in the entire surrounding area ultimately drains itself into the centrally lying depression that is the Little Rann of kutch.
- The rivers draining this area from north to east and towards south and south west are Banas, Saraswati, Rupen, Okaro, Umai, Chandrabhaga, Phulka, Godra, Kankavati, Brahmini, Machchhu and many more minor streams.

The catchment area comprises of :-

- **Area North West of Rann**

Various small rivers with a total catchment area of 1700 km^2 (650 sq. miles).

- **Area East of Rann**

Banas river

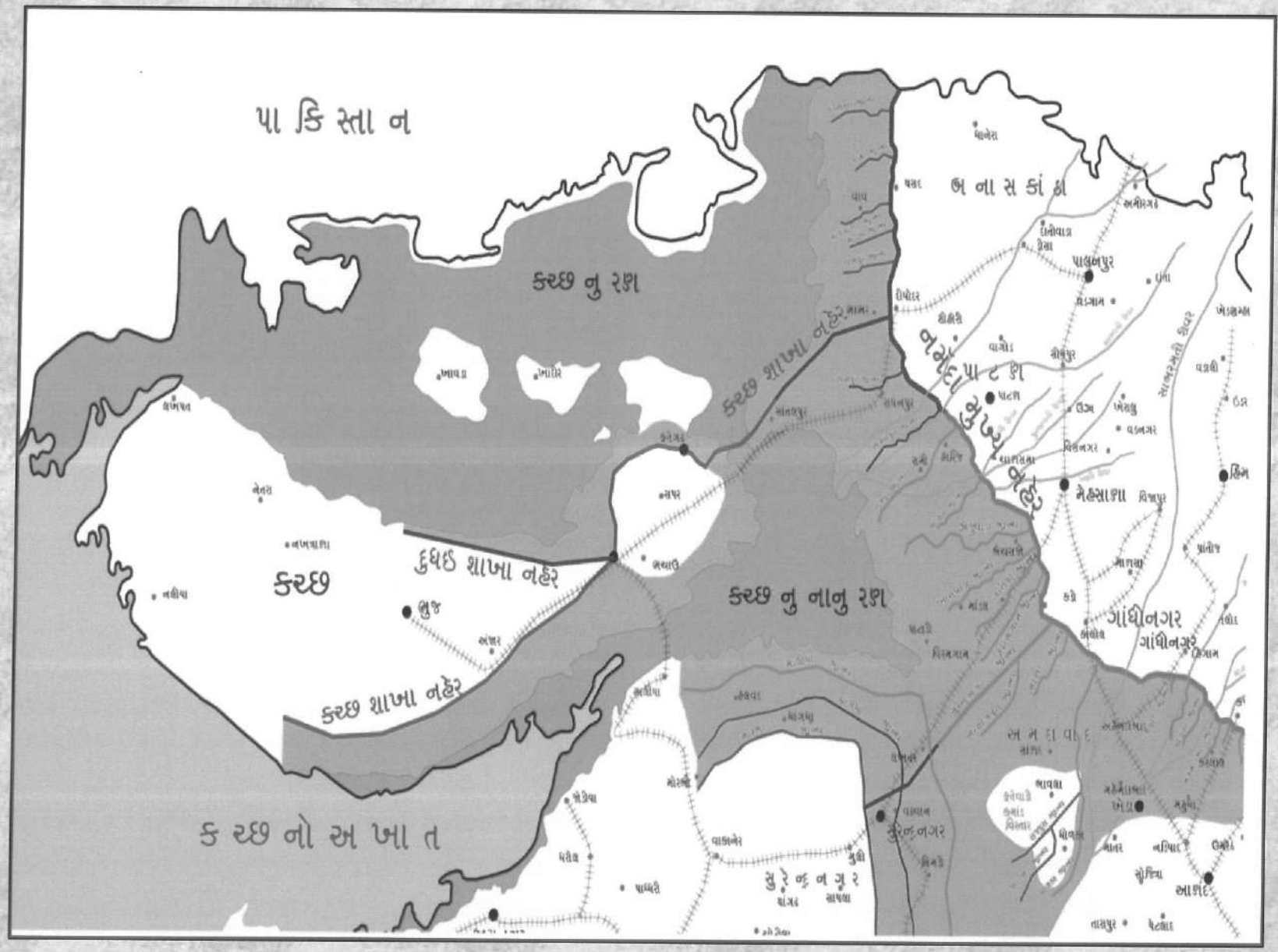
- (Upstreams Dantiwada excluded) – 4800 km^2 (1850 sq. miles)
- Saraswati river – 2850 km^2 (1100 sq. miles)
- Rupen and others – 3100 km^2 (1200 sq. miles)
- Total catchment East of Rann – 10750 km^2 (4150 sq. miles)

- **Area South of Rann**

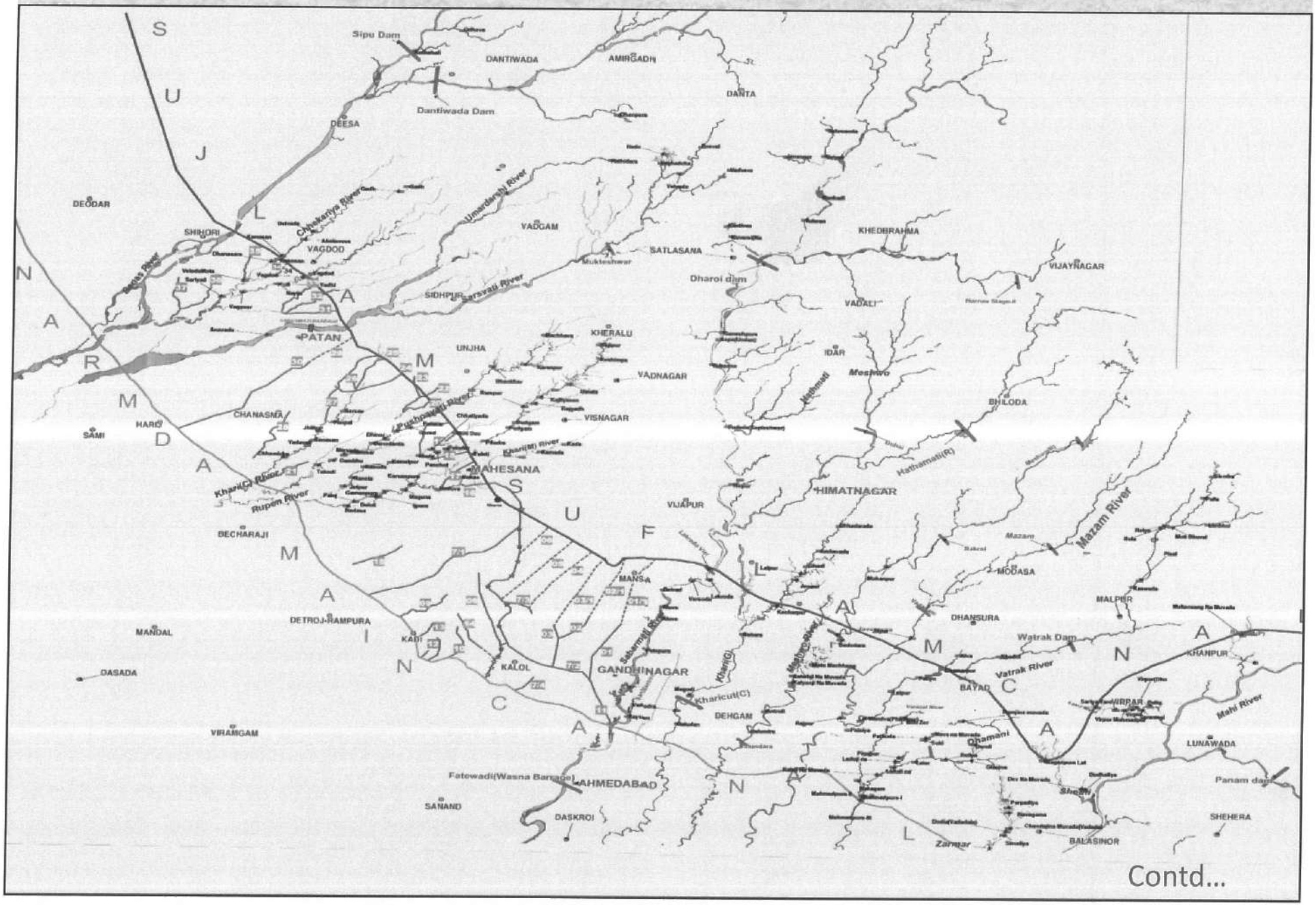
Various rivers, upstream of the Brahmani dam (120 sq. miles) excluded, with a total of 3100 km^2. The total catchment including the 3 areas amounts to 15550 km^2 (6000 sq. miles)

Average yield from these rivers (without any upstream reservoirs) is estimated to be 2480 MCM.

Releases from the various escapes of the canal distribution network of Sardar Sarovar (Narmada) Project



Sujalam Suphalam Spreading Canal



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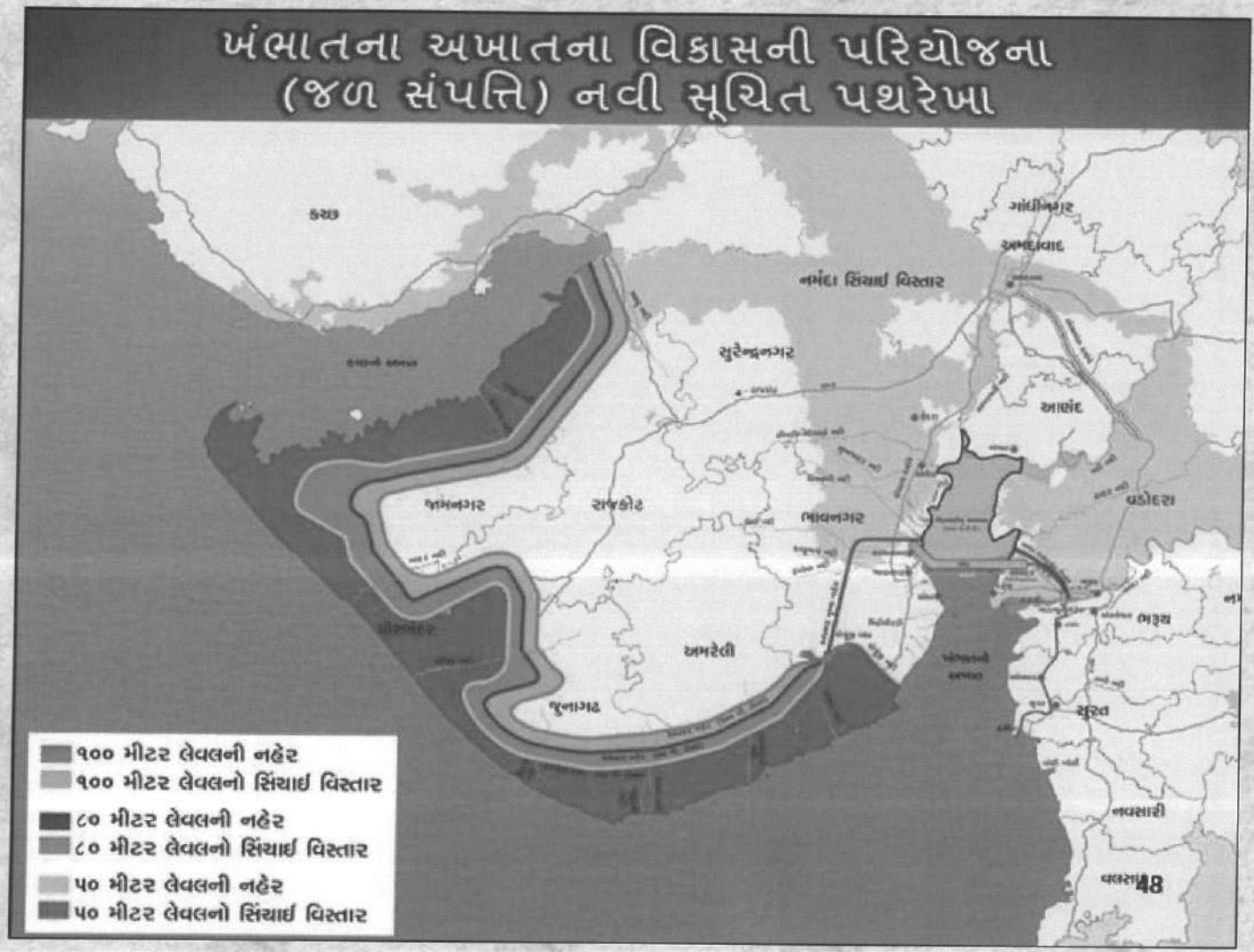
"Kalpasar Project- From the proposed high level canal (100 m)



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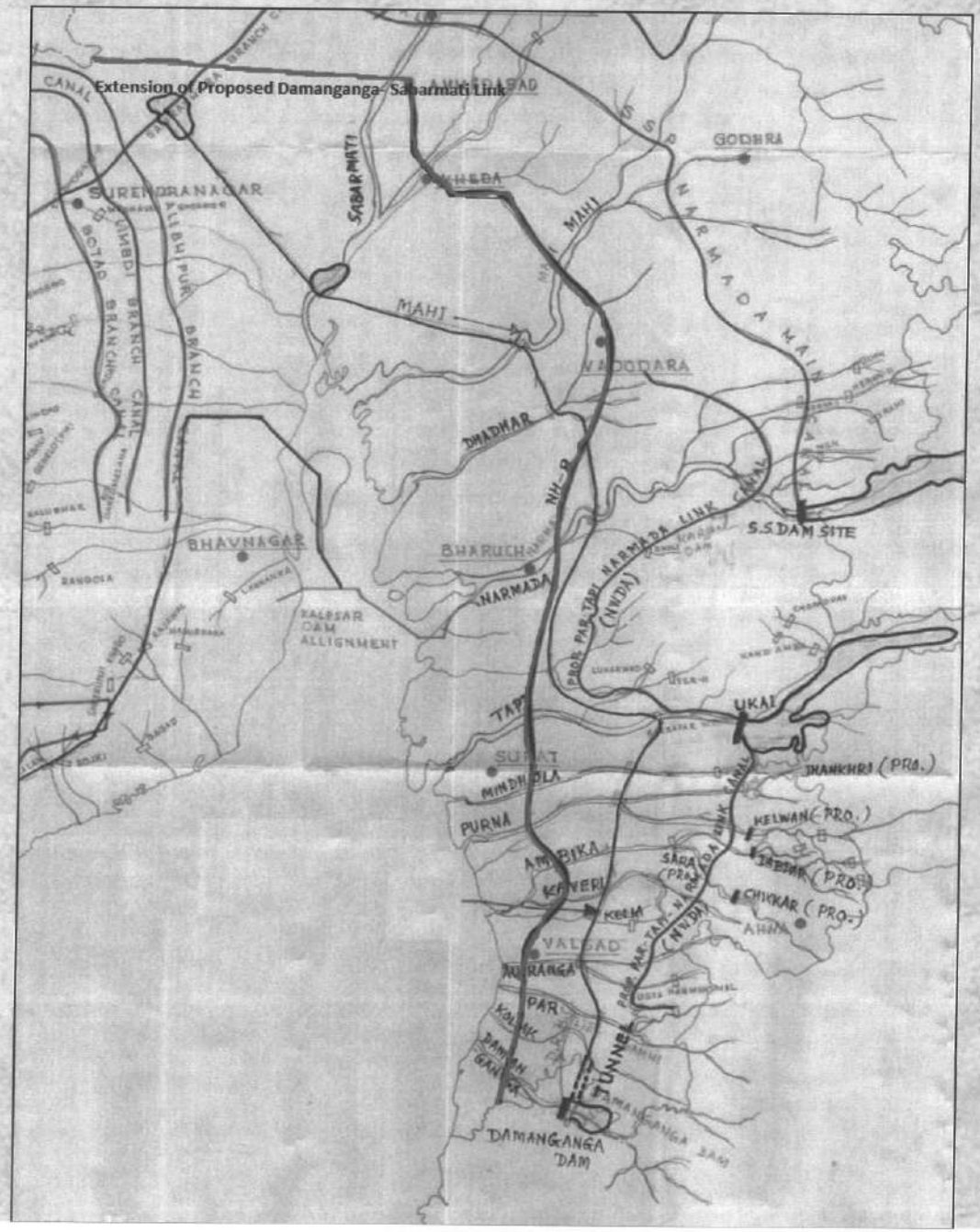
Damanganga Chorwad Link Canal



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Sharda Yamuna Saraswati link canal-Proposed by NWDA

Peninsular Component

1. Mahanadi - Godavari
2. Inchampalli - Nagarjunasagar
3. Inchampalli - Pulichintala
4. Polavaram - Vijayvada
5. Almatti - Pennar
6. Srisailam - Pennar
7. Nagarjunsagar - Somasila
8. Somasila -Grand Anicut
9. Kattalai - Vaigai - Gundar
10. Ken - Betwa
11. Parbati - Kalisindh - Chambal
12. Par - Tapi - Narmada
13. Damanganga - Pinjal
14. Bedti - Varda
15. Netravati - Hemavati
16. Pamba - Achankovil - Vaippar

Himalyan Component

1. Kosi - Mechi
2. Kosi - Ghagra
3. Gandak - Ganga
4. Ghagra - Yamuna
5. Sarda - Yamuna
6. Yamuna - Rajasthan
7. Rajasthan - Sabarmati
8. Chunar - Sone Barrage
9. Sone Dam - Souther Tributaries of Ganga
10. Manas - Sankosh - Tista - Ganga
11. Jogighopa - Tista - Farakka (Alternate)
12. Farakka - Sunderbans
13. Ganga (Farakka) - Damodar - Subernarekha
14. Subernarekha - Mahanadi

-:Comments on the observations made by CSIR:-

Sr. No.	Objectives	Comments by CSIR	Further Comments by the Proponent
1	To convert "Small Rann" of Kutch (Gujarat) in Sweet water Lake	Huge Technological and environmental challenge with immense impact on or complete reversal of the socio-economic structure of this region.	The proposal is to create water storage facility in the Little Rann of Kutch with a focus on harvesting flood water of rivers terminating.
2	To prevent Waters of 117 rivers from flowing into the sea-so as to save for storage & to prevent overflowing water of Narmada Dam	Possible	It is proposed to harvest maximum number of rivers discharging into Little Rann of Kutch and also excess water from the canal network of Sardar Sarovar Project.
3	Prevention of salt water ingress from the bay of Kutch to the reservoir	Possible but challenging	By creating freshwater storage in a phased manner, rate of salinity ingress can be checked. One of the project components is to convert structure of existing old road bridge near Surajbari, into a sea water intrusion barrier, like Bandhara. Cutoff of the proposed converted / modified structure would also help in reducing salinity ingress.
4	To resolve the problems of people related to salinity issues	Technological challenge but Possible	With the proposed measures, salinity ingress would be reduced. Fresh water availability would be enhanced. Improvement in the ground water quality and change in land use pattern would be beneficial.
5	To provide employment opportunities for agriculture/animals/fishing Industries by converting Sea Water (salty) land into agriculture land	As mentioned in Point 1	Construction such infrastructure would generate significant employment generation. Even after completion of the project, agriculture and animal husbandry activities would be increased.

-:Comments on the observations made by CSIR:-

Issues required to be considered:-

Sr. No.	Issue	Comments by the Proponent
1	Climate: Semi-arid-arid; RH ~ 25% (dry months); very high water evaporation that makes it ideal for salt production. -challenge to maintain sweet water reservoir	Considering the arid / semi-arid climatic conditions, the proposed storage structures are planned to have minimum surface area and thereby reduced evaporation.
2	Seismologically active zone: Frequent earthquakes; change in topography - Threat to permanent structural interventions	Proposed earthen dam structure need to be designed considering appropriate seismic co-efficients. Preliminary sketch seems to be stable and safe for this zone.
3	UNESCO listing - Biosphere reserve Wild ass sanctuary	After completion of the project, drinking water and grass would be available for longer period, even the earthen bunds, connecting "bets" would serve as all-weather road for the animals.
4	Nesting grounds of Lesser Flamingos and other migratory birds	Creation of water storage would not affect the resting grounds for Lesser Flamingos and other migratory birds.

Previous references made for reclaimimg the Little Rann of Kutch

- Planning Commission (1981) "Report on Development of Coastal Areas affected by Salinity)
- Narmada Planning Group - "Planning for Prosperity"

Thank You.....