GUIDELINES FOR
ENVIRONMENTAL MONITORING OF
WATER RESOURCES PROJECTS

Government of India
Central Water Commission
Environmental Management Directorate

New Delhi March, 1998.

FOREWORD

The development of water resources has always been given due recognition and importance in our country. Indian history contains description of numerous irrigation and water works constructed from time to time in order to fulfill the agricultural, municipal, and other needs of the people.

Water resources development in the country got a boost during the post-independence period. The Plan period, commencing with the first Five Year Plan in 1950-51, ushered in a new era in the development of water resources in India and greatly contributed to the green revolution.

With the all-round development of water resources, their environmental aspects also came to be noticed. It also led to the realisation that the water resources development should be planned in such a manner that it leads to enhancement in the quality of environment rather than its degradation.

With the above objectives in view, the Ministry of Environment and Forest has been stipulating certain environmental safeguards while clearing the projects. These safeguards are to be implemented alongwith the construction of the projects. In order to assist the concerned authorities in monitoring the implementation of these safeguards, guidelines were brought out by the Central Water Commission during 1996. These guidelines proved to be extremely useful not only to the field units of CWC but to the State Governments and other concerned agencies as well. The present edition has been updated regarding the environmental acts, number of projects monitored etc. Some general information regarding the water resources development in India, its legal framework, national policies etc. has also been added.

Shri P.C. Mathur, Chief Engineer and Shri R.K. Khanna, Director of the Environmental Management Organisation, deserve appreciation for their efforts in bringing out this revised edition.

New Delhi — *(Z. Hasan)*
Chairman
March 1998 — *Central Water Commission*

PREFACE

Environmental clearance to various water resources projects is accorded by the Ministry of Environment and Forests. While doing so, certain environmental safeguards are stipulated which are required to be implemented alongwith the construction of the project. In order to ensure the implementation of these safeguards, an Environmental Monitoring Committee was constituted by the Ministry of Water Resources during February, 1990. It is headed by the Member (WP&P), with Director (EM) as the Member Secretary. The Committee is assisted by various State Level Environmental Monitoring Committees and Project Level Environmental Management Committees.

The Central Water Commission was earlier represented on the Project Level Environmental Management Committees by the Director (EM). However, with the establishment of various regional units of CWC, it has been decided that the concerned Directors (Appraisal/Monitoring and Appraisal) would be members of the Project Level EMCs. In this capacity, they have to play a key role in the environmental monitoring of water resources projects.

In order that the environmental monitoring is effective and uniform, some sort of guidelines are necessary. No guidelines were, however, available on the subject. The present publication, originally brought out in 1996, was a step in this direction. It has been found to be very useful for the regional officers of CWC associated with the work of environmental monitoring. Moreover, environmental management being an emerging field, the guidelines have also been found useful by the project authorities who are responsible for implementing the environmental safeguards. This revised edition has been brought out to meet the continued demand for the publication.

I would like to convey my appreciation to Shri R.K. Khanna, Director (Environmental Management) for putting in considerable effort in the compilation and updating of these guidelines.

(P.C. MATHUR)
CHIEF ENGINEER (EMO)

ABBREVIATIONS

CAD	Command Area Development
CAT	Catchment Area Treatment
CWC	Central Water Commission
EIA	Environmental Impact Assessment
EMC	Environmental Monitoring Committee/ Environmental Management Committee
EMP	Environmental Management Plan
MOWR	Ministry of Water Resources
NGO	Non-Governmental Organisation
PAPs	Project Affected Persons
R&R	Resettlement & Rehabilitation
MOEF	Ministry of Environment & Forests
WP&P	Water Planning & Project

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LIST OF ANNEXURES

GUIDELINES FOR ENVIRONMENTAL MONITORING OF WATER RESOURCES PROJECTS

1. WATER RESOURCES OF INDIA

The annual renewable fresh water supply in India is about 1870 cubic km. which is 4 percent of the world's total of around 47000 cubic km. The per capita annual availability of water in the country is about 2200 cubic metres which is much lower than the world average of about 8500 cubic metres. The corresponding figures for the former USSR, USA and China are 19500, 9900 and 2420 cubic metres respectively.

The principal consumptive use has traditionally been for irrigation. India uses 83 percent of its water for agriculture as compared to the global average of 69 percent.

2. WATER RESOURCES DEVELOPMENT

India has primarily been an agricultural country since the dawn of civilisation and it still continues to be so. The total cultivable area in the country is 184 million hectares(mha) as against 186 mha in USA and 93 mha in China. Agriculture in the country has largely been dependent on rainfall. However, the uneven temporal and spatial distribution of rainfall renders it rather unreliable for agriculture. Irrigation development has, therefore, always been accorded high priority and attention by the Central and State Governments. The ancient holy book of Mahabharata (3000 BC) mentions about Rishi Narada, a great saint, visiting the court of King Yudhishtira (3150 BC) and enquiring about the welfare of the state. Among other questions, he asked, "Are the farmers sturdy and prosperous? Are there dams full of water and big enough and distributed in various parts of the Kingdom and" does agriculture not depend on rain only?"

The artificial system of irrigation was devised in India from ancient times to meet the agricultural demands in case of failure of the monsoon rains. The country's history is full of description of various irrigation and water-works undertaken from time to time by various Kings to meet the agricultural and municipal demands.

However, the water resources development for irrigation and other uses in the country got a boost during the post-independence (1947) period. The plan period, commencing with the First Five Year Plan in 1950-51, ushered in a new era in the development of water resources in India. The irrigation potential created increased from around 22 mha in 1951 to 82 mha by 1991-92. A live storage capacity of over 174 billion cubic metres have been created and the number of large dams constructed exceeds 4000. Considering the water resources potential of the country the present stage of development is around 50 percent. It has greatly contributed to the green revolution and making the country self sufficient in food grains and other agricultural products. The hydropower generation during the last forty years has increased from 940 MW to 20830 MW (installed capacity). This is however about 25 percent of hydro-power potential of 84,000 MW.

3. LEGAL FRAMEWORK

India is a Union of States. The Constitution provides for the distribution of legislative powers. The matters of National interest are included in List-I (Union List) where the National Parliament can enact laws. The matters of States' interest are included in List-II (State List) where the States have full legislative powers. The matters of common interest are included in List-III (concurrent List) where both the legislatures can act. Water is in the State List. However, an entry in the Union List allows Union Government to regulate and develop inter-State rivers to the extent it is declared' by the Parliament by law to be expedient in the public interest. Most of the country is covered by the inter-State river basins. Article 262 of the Constitution deals with the adjudication of disputes related to waters of inter-State rivers or river valleys. However, in practice, the Parliament has allowed the States to deal with waters of inter-State rivers by mutual agreement and only in a few cases tribunals were entrusted by Central Government for resolving inter-State disputes. Adequate provisions for protection of environment and forest are made in the Constitution of India. Article 47 provides for protection and improvement of health. Article 48A is directed towards protection and improvement of environment and protection of forest and wildlife. Article 51(A) says it is the duty of every citizen to protect and improve natural environment. Following the UN Conference on Human Environment (Stockholm, 1972), a constitutional amendment (42, 1976) inserted relevant provisions for environment protection in Constitution in Part IV-Directive Principle and Part IV A-Fundamental Duties.

4. ENVIRONMENTAL CONCERNS IN ANCIENT INDIA

A good environmental sense has been one of the fundamental features of India's ancient philosophy. The earth was called 'mother earth' and water, air and sun were considered to be Gods. Major rivers like the Ganga and the Yamuna were also treated as mothers. The environmental concerns were integrated into various religions and social customs in such a manner that these were automatically taken care of by the people. For instance, the cutting of trees, especially the leafy one's like 'Peepal' was considered to be sinful. Similarly, the use of camphor, incense, flowers etc. during prayers led to the purification of air.

5. ENVIRONMENTAL CONCERNS - GLOBAL DEVELOPMENTS

Globally, the environmental movement is understood to have started in the beginning of this century. The environmental awakening started towards the early fifties with issues like settlements, health and fisheries. The full network of ecological impacts was stressed in the late sixties. The United States of America was the first country in the World to enact the environmental act, namely, National Environmental Policy Act (NEPA) in 1969, making Environmental Impact Assessment (EIA) mandatory for major development projects.

Subsequently, other countries adopted similar legislations. The attention was focussed on the environmental issues during the 1972 UN Conference held at Stockholm. This, in fact, brought an awakening towards

environmental impacts of various development activities including water resources development projects. Various environmental impacts of these projects which came to be noticed included the degradation of land, effect on flora and fauna and the displacement of people, the last one having led to some resentment among the people as it affected them directly. In fact, the environmental impacts of water resources projects are being experienced and watched carefully in many developed as well as developing countries. This led to the realisation that there was a need to make an in-depth study of these impacts. Steps were also initiated to evolve various measures so as to minimise the negative impacts while maximising the benefits. The Earth Summit (UN Conference on Environment and Development) held at Rio during 1992 was a culmination of the growing concern of the international community towards sustainable development.

6. ENACTMENT OF ENVIRONMENTAL ACTS

In order to ensure sustainable development from water resources the Government of India have enacted various Acts and Legislations. Prominent among these is the Environmental (Protection) Act, 1986 through which the Government has acquired wide powers for protecting the environment. As per this Act, the State Governments/Project Authorities are required to submit Environmental Impact Assessment Statements (EIS) and Environmental Management Plans (EM?) for obtaining environmental clearance to the project. It is also mandatory to get clearance from forest angle (if forest land is involved in the project) in addition to environmental clearance. Other relevant Acts are Water (Prevention and Control) of Pollution Act,1974 (amended in 1983), Water (Prevention and Control) of Pollution (Cess) Act,1977 (amended in 1991), Forest Conservation Act 1980 and EIA Notification of 1994 (amended in 1997). The highlights of these Acts may be referred at Annexure I.

7, NATIONAL POLICIES

Experience across the world indicates that many of the problems of reconciling development and environment result from a failure to consider them simultaneously and from adopting a compartmentalized approach to planning rather than a multi-disciplinary, integrated approach. India's National Water Policy (NWP) formulated in 1987 has emphasized the- need for an integrated and multi-disciplinary approach to the planning and implementation of projects, including catchment treatment and management, environmental and ecological aspects, the rehabilitation of affected people and command area development. It is stressed that common approaches and guidelines are necessary for issues such as environmental protection, resettlement of affected people and livestock, the public health consequences of water impoundment, dam safety, etc. in the planning and implementation of irrigation and multi-purpose projects and in the study of their impacts. In the planning, implementation and operation of projects, the preservation of the quality of the environment and the ecological balance should be a primary consideration, the adverse impacts, if any, on the environment should be minimized and offset by adequate compensatory measures.

8. CLEARANCE OF PROJECTS FROM ENVIRONMENTAL ANGLE

Prior to 1978, all major and medium river valley projects were examined at the Centre by Central Water Commission in respect of their technical feasibility and economic viability, before their acceptance by the Planning Commission in the development plans of various States. However, with the constitution of the Department of Environment and Forests during 1978, the clearance of all major irrigation, multipurpose and flood control projects from the environmental angle became obligatory.

The project authorities are required to furnish the detailed project report to the Ministry of Environment and Forests for scrutiny alongwith other requisite information in the specified proformae and furnish the Environmental Impact Assessment (EIA) Studies, Environmental Impact Statements (EIS) and the Environmental Management Plans (EMP) etc. The project is considered by the Expert Committee for River Valley and Hydro-electric projects which decides about the acceptance of the project from the environmental angle. However, certain environmental safeguards are stipulated, wherever necessary. These safeguards need to be implemented by the project authorities alongwith the construction activities of the project.

With a view to assist the concerned authorities in identifying the environmental parameters, carrying out environmental assessment and developing managment plans, a publication titled "Guidelines for Sustainable Water Resources Development and Management" has been brought out by the Central Water Commission.

9. COMMON SAFEGUARDS

Some of the common safeguards stipulated are:-

i) Drawing up a master plan for rehabilitation of the oustees;

ii) Compensatory afforestation;

iii) Restoration of construction areas;

iv) Necessary arrangements for supply of fuelwood by the project authorities to the labour force during the construction period;

v) To identify the critically eroded areas in the catchment for soil conservation work;

vi) Mechanism for free movement of fish upstream and downstream of the structure across the river;

vii) Setting up of monitoring units for implementing the suggested safeguards;

viii) Alternatives in case of adverse effect on flora and fauna, wildlife etc.;

ix) Command Area Development (including drainage and anti-waterlogging measures).

10. CONSTITUTION OF ENVIRONMENTAL MONITORING COMMITTEE

With a view to integrate the environmental concerns into water resources development, the Environmental Management Directorate was carved out in Central Water Commission during 1987. It is envisaged to be a link between the State authorities who are executing water resources projects and the Ministry of Environment & Forests who are vested with the powers of clearing the projects from environmental angle.

A multidisciplinary Environmental Monitoring Committee (EMC) was constituted by the Ministry of Water Resources during February, 1990 for overseeing the implementation of environmental safeguards stipulated by the Ministry of Environment & Forests while clearing the Water Resources Projects (Annexure-II). The Committee is headed by the Member (WP&P), CWC with Director (Environmental Management) as its Member /Secretary. It comprises members from Ministries of Environment & Forests, Agriculture & Cooperation, Welfare and Water Resources besides Planning Commission. The Committee is entrusted with the work of review of the mechanism established by the project authorities to monitor the ecology of the project areas and to suggest additional compensatory measures/facilities wherever necessary. It is also required to bring to the notice of the Government important cases of default, which may lead to the review of project's clearance for the funding arrangement.

The EMC initially selected 78 Water Resources Development Projects, cleared by the Ministry of Environment & Forests, for monitoring. These Projects are geographically well distributed over the country. However, due to the limited resources available with the Committee, it identified 10 projects for close monitoring, while the remaining 68 projects would be monitored by State Level Environmental Monitoring Committee and Project Level Environmental Management Committee of respective State/Project. The number of overall projects to be monitored has since grown to 85 (Annexure-III), the projects being closely monitored by the EMC being 17 (Annexure-IV).

11. PROCEDURE FOR IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

As indicated earlier, the Environmental Monitoring Committee has been constituted to monitor the implementation of environmental safeguards by the State/Project authorities. It is assisted in this work by the State Level Environmental Monitoring Committees and Project Level Environmental Management Committees.

The implementation of the safeguards is to be carried out mainly by the project authorities. They have to carry out this activity with the close coordination of other concerned Departments viz., Environment, Forestry, Welfare, Agriculture, Health etc. It is with this objective that the representatives of these Departments have been included as members in the Project Level Environmental Management Committee. All inter-departmental problems at the project level can be taken care of through this Committee. For instance, the work of compensatory afforestation is generally carried out by the Forest Department. The problems/delays in this regard can be sorted out through the Project level EMC as the Department of Environment & Forests is represented on the Committee.

The Project level EMC should meet regularly (at least once in 3 months) and submit its report on the implementation of environmental safeguards in respect of the project to the State Level Environmental Monitoring Committee. The delays/bottlenecks in the implementation of various safeguards should also be brought out clearly for the information of State Level EMC

The State Level Environmental Monitoring Committee should receive such reports in respect of all the projects under its purview in the State from the concerned Project Level Environmental Management Committees. This Committee should also meet at regular intervals (at least once in 3 months) to review the implementation of environmental safeguards in respect of all the projects in the State. The State Level EMC should try to solve the various problems which could not be solved at the level of the Project level EMC. As the State Level EMC is headed by the Secretary, Water Resources/Irrigation and comprises of senior representatives of the rank of Additional Secretary/Joint Secretary from the various departments, it should be in a position to sort out the various issues through inter-departmental coordination. The State Level EMC also consists of representatives from non-governmental organisations of repute in the State. Efforts should be made to actively involve these representative with the work of the Committee so that the views of the NGO's are also considered and taken care of during implementation of the projects. The State Level EMC should send its report on the implementation of the environmental safeguards in respect of all the projects of the State to the National Level Environmental Monitoring Committee.

The National Level Environmental Monitoring Committee is required to foresee the implementation of the environmental safeguards stipulated by Ministry of Environment & Forests at the stage of clearance of irrigation, multipurpose and flood control projects. This Committee would meet regularly to discuss and review the progress of implementation of the safeguards and the general environmental management measures for the different basins. The EMC would prepare an annual- report on the status of environmental management for the different projects and submit it to the Ministries of Water Resources and Environment & Forests.

The Ministry of Water Resources will bring to the notice of the Planning Commission any serious violation by the State Government/Project authorities, highlighted by the EMC in its Annual Report and recommend that no further funds be released for the concerned project till the environmental safeguards suggested by the EMC are implemented.

12. ACHIEVEMENTS OF EMC

The National Level Environmental Monitoring Committee has been holding its meetings at regular intervals ever since its inception and visited various monitored projects.

The State Level Environmental Monitoring Committees have been constituted in almost all the States in which the projects are under monitoring by the EMC (Annexure-V).

The Project Level Committees have been set-up in nearly two-thirds of the identified list of 85 projects (Annexure-VI). Besides, the Project Level Committees have also been constituted for some of the projects not monitored by the National Level EMC (Annexure-VI I) .

During visits to the projects, the EMC monitors implementation of various environmental safeguards viz. rehabilitation aspects, adequate fuel arrangements for the labourers, restoration of construction areas, afforestation in the project areas, soil conservation, pisciculture, suitable drainage arrangements to prevent water logging and soil salinity, adoption of suitable cropping pattern, constitution of monitoring groups.

13. REPRESENTATION OF CWC BY ITS REGIONAL OFFICERS IN THE PROJECT LEVEL EMC

Consequent upon the establishment of various regional units of CWC, it has been decided that the Directors in-charge of the appraisal/monitoring and appraisal of the region may be associated with the Project Level Environmental Management Committees within the jurisdiction of the concerned Chief Engineer. A list showing the States allocated to the various regional units is given at Annexure-VI**II.**

The Constitution of National, State and Project Level EM3s is given at Annexures IX, X and XI respectively.

14. MONITORING OF IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

It has been mentioned earlier that the CWC is now represented on the Project Level Environmental Management Committees by its regional Directors. In this capacity, they have to play a major role in the functioning of Project Level Committees. Various environmental safeguards and the points to be kept in view in monitoring their implementation are described hereafter.

i) Rehabilitation of oustees/PAPs

The construction of dams invariably leads to submergence of vast tracts of land which may include inhabited areas also. As the sites of these projects are located mostly in remote and backward places, the submergence generally affects socially and economically backward people. The environmental safeguard pertaining to resettlement and rehabilitation is thus the most important of all the safeguards. It generally stipulates that rehabilitation master plan should be prepared for rehabilitation of the displaced people by identifying suitable sites, availability of land with its capability, arrangements for compensation to the landless people and training programmes etc.

The objective of R&R is that the oustees should enjoy a better quality of life at the place of resettlement than that enjoyed by them at the original habitat. For this purpose, master plans should be drawn based on the State/Project R&R Policy. In the absence of any such policy, the work of R&R should be carried out according to the norms adopted for other nearby projects. In fact, a draft 'National Policy for R&R of persons affected by reservoir projects' has been formulated by the Ministry of Water Resources to help the States/Project authorities in formulating their policies. The highlights of the draft policy are given at Annexure-XII.

It should be verified during visit to the project that the resettlement work has been (or is being) carried out in accordance with the approved master plan. The resettlement colonies should also be visited and an assessment should be made regarding the living conditions of the PAPs by observations and even discussions with the PAPs. All basic amenities should be provided in the resettlement colonies viz. drinking water, medical and educational facilities, electricity, roads etc. Every possible effort should be made to provide occupational training to the people. The possiblity of providing jobs to PAPs under the various ongoing development schemes should also be explored.

ii) **Compensatory Afforestation**

The submergence areas of water resources projects mostly include forests also. The construction of the projects, therefore, leads to loss of forest land. The environmental safeguard pertaining to compensatory afforestation is thus next in importance only to rehabilitation.

The Department of Environment of the Government of India has issued detailed guidelines for the diversion of forest land for non-forest uses. Some Oi the salient features of these guidelines are as follows:

i) Comprehensive afforestation is one of the most important conditions stipulated for providing proposals for diversion of forest land to non-forest uses. Steps proposed to compensate for the loss of forest area, therefore, have to be specified.

ii) The norms normally laid down for compensatory afforestation are that (a) where non-forest land is available, compensatory afforestation should be undertaken over the equivalent area of non-forest land (b) where non-forest land is not available, compensatory plantation should be undertaken in degraded forests over twice the extent of the area being diverted.

iii) Stipulation has been made for identifying the equivalent non-forest area or degraded forest land, the agency responsible for afforestation, the provision of funds, the monitoring mechanism, and the preparation of detailed work schedule.

iv) Lands identified for compensatory afforestation are to be transferred to forest Department.

The areas provided for compensatory afforestation should be visited and an assessment may be made about the survival rate of planted forests by inspection/querries from officers of the Forest Department.

The work of compensatory afforestation is generally carried out by the Forest Department after necessary funds for the purpose have been deposited with them by the Irrigation or the Water Resources Department. Any bottlenecks in this work can be sorted out by mutual discussions or through discussions in the Project Level ENC.

iii) Provision of free fuel to the labourers

The construction of dams requires a huge labour force. These are mostly immigrant labourers and reside at the place of work. They tend to cut the trees in the nearby forests to meet their fuel requirement.. In order to prevent the cutting of trees, a safeguard is generally adopted regarding the provision of free fuel to the labourers. The provision for supply of free fuel is required to be made in the project estimate and the fuel is supposed ,to be supplied by the contractor free of cost to the labour force. Necessary fuel depots should be opened for the purpose.

It may be ascertained during the visit whether the fuel is being supplied to the labourers in the above manner. If possible, the fuel depots may also be inspected.

iv) Restoration of construction areas

A number of scars are left in the construction areas by way of creation of borrow pits, quarries etc. These should be restored to the maximun extent possible by levelling, grading, filling of borrow pits, landscaping etc. Proper care should also be taken to dispose of the quarried material. It is always advisable to engage a landscape architect for the purpose. The plans prepared for restoration of construction area should be furnished to the Project Level EIVC for approval and work carried out accordingly.

v) Catchment area treatment

The environmental safeguard in this regard generally stipulates preparation of comprehensive catchment treatment plans for development of grazing lands, wastelands and marginal lands into grasslands. The agricultural lands should be terraced, bunded and stall feeding of cattle should be encouraged. The requisite soil . conservation measures should be adopted for restoration of degraded catchment areas.

A land use map of the catchment area should be prepared for identifying critically eroded areas so that extensive soil conservation measures are launched in synchronisation with the constrcution work.

The cost of work of CAT should be shared as per the Guidelines prepared by CWC.

vi) Command Area Development

The Command Area Development Programme envisages sustainable agricultural development frcm the irrigated areas. To achieve this end, it aims at optimum utilisation of the created irrigation potential. The Programme also includes various drainage and anti-water logging measures in the project ccmmand. With this in view, a stipulation is generally made regarding preparation of a CAD plan for the project. The CAD Plan should be prepared and implemented in such a manner so as to minimize the gap between irrigation potential created and that utilized. The other issues relating to command area management are (i) Drainage Congestion (ii) Water logging. These aspects should be studied in detail taking into account the soil types, slopes, land use pattern, intensity of irrigation, varieties of crops proposed to be grown

etc. Suitable preventive measures have to be planned to prevent surface drainage congestion and water logging. The plans for such works should be formulated well in advance and the preventive/control measures should be executed simultaneously with the execution of the project. It may be necessary to monitor the ground water level position in the command area at specified regular intervals.

It may also be ascertained whether the project is included under the Centrally sponsored CAD programme. If so, efforts may be made to derive optimum benefits frcm the Central funding of the programme.

vii) Alternatives in case of flora and fauna, wildlife etc.

In case some unique or endangered species of flora and fauna are likely to be threatened by the project, suitable measures *are* required to be taken for their rehabilitation. Similarly, if the project interferes with wildlife migration, suitable arrangements are to be made for their habitat. These cases are, however, not very common.

viii) Setting up of monitoring units

A safeguard is generally sitpulated regarding setting up a Monitoring Committee with experts frcm various fields such as ecology, environment, watershed management, soil conservation etc. to oversee the effective preparation and implementation of various environmental Action Plans.

This safeguard is, however, taken care of in case the Project Level Environmental Management Committee is constituted as per the guidelines and it works effectively. It should be ensured that this Committee meets regularly to sort out various problems related to implementation of the environmental safeguards. The requisite information as per the prescribed proforma (Annexure-XIII) should also be furnished for every quarter regularly.

15. CONCLUSIONS

Like all other developmental activities, water resources projects have also got both beneficial and adverse environmental impacts. The objective of environmental management is to optimise the benefits while minimising the adverse impacts. Various environmental safeguards are stipulated keeping this in view. The proper implementation of these safeguards is not only necessary for the particular project but also in the overall interest of the Water Resources Sector. It is , therefore, imperative that these safeguards are followed in letter and spirit.

Monitoring is a very effective tool in ensuring the implementation of environmental safeguards. Effective monitoring should thus form an integral part of sustainable water resources development.

Annexure-I

PROVISIONS IN THE CONSTITUTION OF INDIA

- Article 47 provides for protection and improvement of public health
- Article 48A directed towards protection and improvement of environment and protection of forest & wildlife
- Article 51(A) says it is duty of every citizen to protect & improve natural environment
- Following UN Conference on Human Environment (Stockholm, 1972), a constitutional amendment (42, 1976) inserted relevant provisions for environment protection in constitution in Part IV - Directive Principle & Part IV A - Fundamental Duties

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1. MAJOR ENVIRONMENTAL ACTS CONCERNING WATER SECTOR

1. Provisions in the Constitution of India
2. Water (Prevention & Control of Pollution) Act, 1974; amended in 1988
3. Water (Prevention & Control of Pollution) Cess Act, 1977
4. Forest Conservation Act, 1980 Rules & Guidelines; amended in 1992
5. Environmental (Protection) Act 1986
6. EIA Notification, 1994

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2. WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1974, AMENDED IN 1988

- Enacted under Article 252(1)
- Seeks to maintain or restore "Wholesomeness of Water"
- Recognises that the problem of pollution of rivers and streams has assumed considerable importance & urgency
- Seeks to ensure that domestic and industrial affluents are not discharged into water courses without adequate treatment
- A 'stream' includes river, water course, inland water (natural or artificial) subterranean waters and sea or tidal water
- Establishment of Central and State Pollution Control Boards
- Restricting application, setting standards, consent orders, emergency measures, penalties
- Amended in 1988, enhancing penalties

3. WATER (PREVENTION AND CONTROL OF POLLUTION) CESS ACT, 1977

- A fiscal statute
- Collection of a Cess on Water consumed by person carrying on a "Specified Industry" or by local authorities
- Time to augment resources of Boards
- Both Central & State Govts, have to provide funds to Boards for implementing provisions of Water Act, 1974
- Specifies penalties for evading payment of cess.
- Incentives for installing sewage treatment plant etc.

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4. FOREST CONSERVATION ACT, 1980 (Rules and Guidelines, Amended in 1992)

- Comprehensive afforestation is one of the most important conditions stipulated for providing proposals for diversion of forest land to non-forest use
- Where non-forest land is available, compensatory afforestation to be done in equivalent area
- Where non-forest land is not available, compensatory plantation to be done in degraded forest in twice, the area
- Stipulation made for identifying equivalent non-forest area or degraded forest land, agency responsible for afforesation & the provision of funds
- Land identified for compensatory afforesation to be transferred to Forest Department

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5. ENVIRONMENTAL (PROTECTION) ACT, 1986

- Enacted under Article 253
- Adopts wide definition of 'environment' and its pollutants
- Empowers Central Govt, to take measures for "Protecting and improving environmental quality" and preventing, controlling and abating environmental pollution
- In addition to air & water pollution, other possible polluted media covered - -
- Authorises Central Govt, to constitute an "authority or authorities"
- Empowers Central Govt, to issue mandatory directions, including summary closure, to any person, officer or authority
- Penalty - imprisonment for 5 years or fine upto Rs. 1 lakh or both

6. ENVIRONMENTAL IMPACT ASSESSMENT NOTIFICATION, 1994

- Environmental clearance mandatory for all new projects, and expansion/ modernisation of existing projects covering 29 disciplines.These include, hydro-power, major irrigation and flood control projects.

- If a project is of the following type, MOEF is to be consulted before even starting investigations :-

  a) Mining
  b) Pit-head thermal power station
  c) Hydro-power, major irrigation and flood control projects*
  d) Ports and harbours (excluding minor ports)
  e) Prospecting and exploration of major minerals in areas above 500 ha.

  — Project report assessed by Impact Assessment Agency constituted by
  — MOEF having 12-15 experts.
  — Clearance to be accorded within a period of 90 days.
  — Conments of public solicited
  — Clearance valid upto 5 years

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7. AMENDMENT TO EIA NOTIFICATION 1994 (Issued in 1997)

- Authority seeking environmental clearance to submit necessary documents to State Pollution Control Board

- State PCB to issue notice for environmental public hearing, inviting suggest ions/conments from public within 30 days

- Residents, environmental groups, other affected can participate in public hearing

- Public hearing panel to include :-

  a)Representative of State PCB
  b)District Collector/nominee
  c)Representatives of State Govt, dealing with the subject and the Department of Environment
  d)Not more than three representatives of local bodies
  e)Not more than three senior citizens

- Concerned persons provided access to Executive Sunroary of project

Annexure-II

No. 6/13/89-PP Ministry of
Water Resources

New Delhi the 22nd Feb. 1990

OFFICE MEMORANDUM

Sub:- Constitution of a monitoring committee for effective implementation of environmental safeguards in respect of Irrigation, multipurpose and flood control projects.

A large number of irrigation, multi-purpose and flood control projects have been cleared by the Government of India after laying down requirements to be met by the project organisation of State Level in respect of environmental safeguards. In order to have periodical and effective monitoring of the implementation of the environmental conditions laid down by the Ministry of Environment and Forests at the time of clearance of such projects, it has been decided to constitute an Environmental Monitoring Committee (EMU) to ensure effective implementation of environmental safeguards with the following composition and terms of reference.

Composition

(i)	Member (WP), Central Water Commission	Chairman
(ii)	Joint Commissioner (PP) MOWR	Member
(iii)	Principal Scientific Officer, Ministry of Environment and Forests	Member
(iv)	Dy. Advisory (ISCAD), Planning Comnission	Member
(v)	Subject Matter Specialist (LUP, SC&WM) Ministry of Agriculture & Cooperation	Member
(vi)	Director, Ministry of Welfare	Member
(vii)	Chief Engineer (BP&MO) CWC	Member
(viii)	Chief Engineer (Monitoring) CWC	Member
(ix)	Director (Environment) CWC	Member-Secretary

2. Representatives of other national organisations, like the Botanical Survey of India, or the Department of Forests etc. may also be invited for the meeting for discussions of any related specific issues coming up for consideration of the Committee. Also where Basin Authorities/Organisations are already in position, their representatives will be invited to participate in the discussions so that a comprehensive basinwise view is not lost sight of.

Terms of Reference

(i) To oversee the implementation of the environmental safeguards stipulated by Ministry of Environment and Forests at the stage of clearance of irrigation, multipurpose and flood control projects.

(ii) To review the mechanism established by the project authorities to monitor the ecology of the project areas, irrigation command areas and the catchment areas.

(iii) To suggest additional compensatory measures/facilities wherever necessary.

(iv) To bring to the notice of the Planning Commission, the Ministry of Water Resources and the Ministry of Environment and Forests important cases of default, which may lead to the review of the projects clearance or the funding arrangements. Such cases where there is default in implementation of rehabilitation scheme for displaced tribals, will be brought to the notice of the Ministry of Welfare also.

Procedure of work of EMC

3. The Member-Secretary of the EM3 will ensure that each project has an Environmental Management Committee for effective implementation of the environmental safeguards preferably under the Chairmanship of the Head of the project organisation. Such a Committee may form sub-committees comprising appropriate representatives of State agencies for pursuing different issues.

4. The Member-Secretary of EMC will obtain from the project authorities a six monthly report of the implementation of the environmental safeguards and the concerned other aspects (check list enclosed) of the environmental management of the basin.

5. The Member-Secretary of the EMG will prepare a detailed report highlighting the various issues like lags and bottlenecks in implementing the safeguards and handling of the peculiar environmental problems faced by the project and the salient aspects of the report will be placed in the next meeting of the EVC for further directions in the matter. The Committee will discuss the matter further with the project representatives before taking a final view in the matter.

6. The EMC will meet at least once in three months to discuss and review the progress of the implementation of the environmental safeguards and the general environmental management measures for the different basins.

7. The EM3 will prepare an annual report of the status of the environmental management for the different projects and the different basins

and submit to the Ministry of Water Resources and the Ministry of Environment and Forests.

8. The Ministry of Water Resources will bring to the notice of the Planning Commission any serious violation by the State Government/Project authorities, highlighted by the HMD in its Annual report and recommend that no further funds be released for the concerned project till the environmental safeguards suggested by the EVC are implemented.

Sd/-
(K.C. Aggarwal)
Joint Ccnmissioner (PP)

To

1. Dr. Mrs. Nalini Bhat, Principal Scientific Officer, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi.

2. Shri D.K. Sikri, Director, Ministry of Welfare, New Delhi.

3. Shri S. Subramanian, Subject Matter Specialist (LUD, SC&WM) Department of Agriculture and Cooperation, Krishi Bhawan, New Delhi.

4. Shri J.N. Nanda, Dy. Adviser (I8CAD), Planning Conmission, New Delhi.

5. Chairman, CWC, New Delhi.

6. Member (WP), CWC, New Delhi.

7. Chief Engineer (BP&MO), CWC.

8. Chief Engineer (Monitoring), CWC, New Delhi.

9. Director (Environment), CWC, New Delhi.

10. PS to Secretary WR/JS (PP).

Annexure-Ila

No. 6/13/89-PP
Government of India
Ministry of Water Resources

Dated the 28th Nov. 1991 New Delhi.

OFFICE MEMORANDUM

Sub:- Constitution of the monitoring committee for effective implementation of environmental safeguards in respect of irrigation, multipurpose **and flood control** projects.

In partial modification of this Ministry's Office Memorandum of even No. dated 22-2-90 on the above subject, it has been decided that Chief Engineer (EMO), Central Water Commission, will be a member of the Environmental Monitoring Committee in place of Chief Engineer (BPMO), Central Water Commission.

Sd/-
(Vijay Kumar)
Under Secretary to the Govt, of India

Copy to :

1. Chairman, CWC, New Delhi.
2. Member (WP), CWC, New Delhi.
3. Chief Engineer (BPMO), CWC, New Delhi.
4. Chief Engineer (Monitoring), CWC, New Delhi.
5. Chief Engineer (EMO), CWC, New Delhi.
6. Director (Environmental), CWC, New Delhi.
7. Dr. Mrs. Nalini Bhat, Principal Scientific Officer Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi.
8. **Shri** D.K. Sikri, Director, Ministry of Welfare, New Delhi.
9. S..Subramaniyan, Subject Matter Specialist (LUP, SCSWM).
10. Shri J.N. Nanda, Deputy Adviser (I&CAD), Planning Commission, New Delhi.

Annexure-III

LIST OF THE PROJECTS SELECTED BY ENVIRONMENTAL MONITORING COMMITTEE FOR MONITORING

ANDHRA PRADESH

1. Singur Irrigation Project
2. Nagarjuna Sagar Tail Pond Reservoir at 21.65 km. from Dam.
3. Jurala Multipurpose Project
4. Telugu Ganga Project

ASSAM

5. Puthirmri Project

BIHAR

6. Punasi reservoir scheme
7. Sone Canal Modernisation Project
8. North Koel Reservoir
9. Subernarekha Multipurpose Project

GOA

10. Mandavi Irrigation Project

GUJARAT

11. Jankhari Reservoir Project
12. Watrak Reservoir Project
13. Goma Reservoir Project, Ani and Men Irrigation Project
14. Sipu Reservoir Project
15. Ukai-Kakrapar Project
16. Hydroplus Fuse Gate on Wankbori Weir (Mahi Stage.I)

HARYANA

17. Western Yamuna Canal
18. Hathnikund Barrage Project on River Yamuna
19. Remodelling of Diversion Drain No. 8

HIMACHAL PRADESH

20. Bhabha

21. Baner

22. Uhl Stage-IT

23. Kol Dam Project

24. Shahnehar Irrigation Project

KARNATAKA

25. Kalindi Stage-II

26. Bennithora Irrigation Project

27. Upper Krishna Project Stage-I

KERALA

28. Idamalayar Irrigation Project

29. Power Generation Scheme under Kallanda Irrigation Project

30. Lower Periyar

31. Malampuzha Irrigation Project Power Generation Scheme

32. Kuttiyadi Augmentation Scheme

33. Muvatupuzha Irrigation Project Power Generation Scheme

34. Chimoni Irrigation Project

35. Muvattupuzha Valley Project

ANDHRA PRADESH

36. Bodhghat

37. Hasdo (Bango) Multi Purpose Unit III (Minimata Hasdeo Bango Project)

38. Mahi Project

39. Mahan Project

40. Mahi Subsidiary Dam

41. Man River Project

42. Kolar Project

43. Bansagar Project

44. Pench Diversion Project

45. Jobat Multi Purpose Project

46. Pench Valley Group Water Supply

47. Hasdo Bango Project

48. Mahanadi Reservoir Project

MAHARASHTRA

49. Nandur Madhmeshwar Project

50. Lower Tirna Project

51. Lower Dudhna Project

52. Dudhaganga Irrigation Revised

53. Lower Penganga Project

54. Talamba Irrigation Project

55. Ghatghar Pumped Storage

56. Wan River Project

57. Gosikhud

58. Bawanthadi Multipurpose Project

59. Koyna Krishna Irrigation Scheme

60. Installation of 150MiV Pump Storage Unit at Bhira

MANIPUR

61. Khuga Multipurpose Project

ORISSA

62. Samakoi Irrigation Project

63. Mahanadi Citrotpala Project

64. Upper Indravati Multipurpose Project

65. Naraj Barrage Project

66. Rengali Irrigation Project

PUNJAB

67. Thein Dam multi-purpose Project (Ranjit Sagar Dam Project)

68. Anandpur Sahib Hydropower Project

69. Punjab Irrigation Project Linking of Water Courses

RAJASTHAN

70. Suratgarh Branch Canal

71. Gosunda Irrigation Project

72. Nohar Irrigation Project

73. Sam Kamla Amba Irrigation Project

74. Indira Gandhi Feeder Ganga Canal Link Channel

75. Jaisamand Modernisation Project

TAMIL NADU

76. Upper Amravathy Kumber Unit

77. Modernisation of Cauvery Delta System

TRIPURA

78. Gumti Uprating Scheme

UTTAR PRADESH

79. Vishnuprayag

80. Kanhar Project

81. Rajghat Dam Project

82. Pathrai Dam Project

83. Lakhwar Vyasi Project

84. Dhauliganga Project

85. Modernisation of Upper Ganga Canal

Annexure–IV

LIST OF PROJECTS SELECTED FOR CLOSE MONITORING BY EMC

ANDHRA PRADESH

1. Telugu Ganga Project

2. Singur Project

BIHAR

3. North Koel Reservoir

4. Subernarekha Multipurpose Project

GUJARAT

5. Sipu Reservoir Project

KARNATAKA

6. Upper Krishna Project Stage-1

KERALA

7. Muvattupuzha Valley Project

MADHYA PRADESH

8. Hasdo Bango Project

9. Mahanadi Reservoir Project

10. Kolar Project

MANIPUR

11. Khuga Multipurpose Project

MAHARASHTRA

12. Wan Reservoir Project

13. Bawanthadi Project

ORISSA

14. Upper Indravati Multipurpose Project

15. Rengali Irrigation Project

UTTAR PRADESH

16. Modernisation of Upper Ganga Canal

17. Rajghat Dam Project

Annexure-V

LIST OF STATES FOR WHICH STATE LEVEL COMMITTEES CONSTITUTED

1. Andhra Pradesh
2. Assam
3. Bihar
4. Gujarat
5. Goa
6. Haryana
7. Himachal Pradesh
8. Karnataka
9. Kerala
10. Madhya Pradesh
11. Maharashtra
12. Manipur
13. Orissa
14. Punjab
15. Rajasthan
16. Tamil Nadu (An environmental cell has been formed in the state which serves the same purpose as state level committee)
17. Uttar Pradesh

Note:- In Tripura there is no major/medium project under execution at present. The State Level Committee would be constituted when the execution of projects is taken up.

Annexure-V

LIST OF PROJECTS FOR WHICH PROJECT LEVEL COMMITTEES FORMED

ANDHRA PRADESH

1. Nagarjuna Sagar Tail Pond Reservoir at 21.65 km from Dam.
2. Telugu Ganga Project.
3. Jurala Multipurpose Project. BIHAR
4. Punasi Reservoir Project.
5. Sone Canal Modernisation Project,
6. North Koel Reservoir Project.
7. Subernarekha Multipurpose Project,

GOA

8. Mandavi Irrigation Project.

GUJARAT

9. Sipu Reservoir Project.
10. Watrak Reservoir Project.

HARYANA

11. Hathnikund Barrage Project.
12. Western Yamuna Canal.
13. Diversion Drain No. 8.

HIMACHAL PRADESH

14. Bhabha Project.
15. Baner Project.
16. Uhl Stage-II Project.
17. Kol Dam Project.

KARNATAKA

18. Bennithora Irrigation Project.
19. Upper Krishna Project Stage-I.
20. Kalindi Stage-II.

KERALA

21. Indamalyar Irrigation Project.

22. Power Generation Scheme under Kallada Irrigation Project.

23. Lower Periyar.

24. Malampuzha Irrigation Project Power Generation Scheme.

25. Kuttiyadi Augmentation Scheme.

26. Muvattupuzha Irrigation Project Power Generation Scheme.

27. Chimoni Irrigation Project.

28. Muvattupuzha Valley Project.

MADHYA PRADESH

29. Hasdo Bango Multipurpose Project.

30. Bodhghat Dam Project.

31. Hasdo (Bango) Multipurpose Unit III.

32. Mahanadi Reservoir Project.

MAHARASHTRA

33. Nandur Madhmeshwar Project.

34. Lower Tirna Project.

35. Lower Dudhna Project.

36. Dudhganga Irrigation Project.

37. Talamba Irrigation Project.

38. Ghatghar Pumped Storage.

39. Wan Irrigation Project.

40. Gosikhud Irrigation Project.

41. Bawanthadi Multipurpose Project.

42. Koyna Krishna Irrigation Project.

ORISSA

43. Upper Indravati Project.

44. Rengali Irrigation Project.

45. Samkoi Irrigation Project.

46. Mahanadi Chitrotpala Island Irrigation Project.

47. Narage Barrage Project.

PUNJAB

48. Thein Dam Multipurpose Project.

RAJASTHAN

49. Som Kamla Amba Irrigation Project.

50. Nohar Irrigation Project.

51. Jaisamand Modernisation Project.

52. Gosunda Irrigation Project.

53. Indira Gandhi Feeder Gang Canal Link Channnel.

MANIPUR

54. Khuga Multipurpose Project.

UTTAR PRADESH

55. Modernisation of Upper Ganga Canal.

56. Kanhar Irrigation Project,

57. Pathrai Dam Project.

58. Lakhwar Vyasi Project.

59. Rajghat Dam Project.

Annexure-VII

LIST OF OTHER PROJECTS WHERE PROJECT LEVEL EMCs CONSTITUTED

ANDHRA PRADESH

1. Sriramsagar Project
2. Yeleru Reservoir Project
3. Vamshadhara Project
4. Srisailam Project

BIHAR

5. Auranga Reservoir Project

GOA

6. Salaulim Irrigation Project
7. Anjunem Irrigation Project
8. Tillari Irrigation Project

HARYANA

9. Western Yamuna Link Canal

KARNATAKA

10. Ghatprabha Power Project
11. Almatti Dam Power House
12. Sharavathi Tail Race Project (Gerusappa Hydel Project)

KERALA

13. Karabuzha Irrigation Project
14. Vamanapuram Irrigation Project
15. Neyyar Irrigation Project
16. Kanhirapuzha Irrigation Project

MAHARASHTRA

17. Warna Irrigation Project
18. Koyna Stage-IV Hydro-electric Project
19. Upper Wardha Project

ORISSA

20. Subernarekha Irrigation Project

RAJASTHAN

21. Jankhari Project

22. Mahi Project

23. Bisalpur Project

UTTAR PRADESH

24. Eastern Ganga Canal Project

25. Middle Ganga Canal Project

Annexure-VIII

FIELD UNITS FOR APPRAISAL OF PROJECTS

NAME AND LOCATION OF THE CONTROLLING OFFICE OF C.E.	NAME AND LOCATION OF THE APPRAISAL UNIT	STATES PROPOSED TO BE ALLOCATED TO THE APPRAISAL UNIT
Brahmaputra & Barak Basin, Shi Hong	Monitoring & Appraisal Directorate, Guwahati	Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura, Mizoram, Sikkim,
Lower Ganga Basin, Patna	Monitoring & Appraisal Dte, Asansol	Bihar, West Bengal
Upper Ganga Basin, Lucknow	Monitoring & Appraisal Dte. Lucknow	Uttar Pradesh
Narmada Basin, Bhopal	Monitoring & Appraisal Dte. Bhopal.	Madhya Pradesh
Yamuna Basin, New Delhi	Monitoring & Appraisal Dte. Jaipur	Rajasthan
Narmada & Tapi Basin, Vadodara	Appraisal Dte. Vadodara	Gujarat
Monitoring Central, Nagpur	Appraisal Dte. Nagpur.	Goa, Maharashtra
Mahanadi & Eastern Rivers, Bhubaneshwar	Monitoring & Appraisal Dte. Bhubaneshwar	Orissa
Krishna & Godavari Basin, Hyderabad	Monitoring & Appraisal Dte. Hyderabad	Andhra Pradesh Tamil Nadu
Monitoring South, Bangalore	Appraisal Dte. Bangalore	Karnataka, Kerala
Indus Basin, Chandigarh	Appraisal Dte. Chandigarh	Haryana, Punjab
Yamuna Basin, Delhi	Monitoring & Appraisal Dte. Delhi	Jarrmu & Kashmir
Indus Basin, Chandigarh	Monitoring & Appraisal Dte, Simla.	Himachal Pradesh

Annexure-IX

NATIONAL LEVEL ENVIRONMENTAL MONITORING COMMITTEE

CHAIRMAN

MEMBER (WATER PLANNING & PROJECTS)
CENTRAL WATER COMMISSION

VICE-CHAIRMAN

CHIEF ENGINEER(EMO),
CENTRAL WATER COMMISSION

MEMBERS

JOINT COMMISSIONER M/O WATER RESOURCES

PRINCIPAL SCIENTIFIC OFFICER, M/O ENVIRONMENT & FOREST

DY-ADVISOR (I&CAD), PLANNING COMMISSION

SUBJECT MATTER SPECIALIST (LUP, SC&WM),
M/O AGRICULTURE & CO-OPERATION

DIRECTOR, M/O WELFARE

CHIEF ENGINEER (MONITORING).CWC

MEMBER SECRETARY

DIRECTOR (ENVIRONMENTAL MANAGEMENT)CWC

Organisalional Structure of National Level Monitoring Committee

Annexure~X

STATE LEVEL ENVIRONMENTAL MONITORING COMMITTEE

CHAIRMAN

SECRETARY
WATER RESOURCES / IRRIGATION DEPARTMENT
OF THE STATE GOVERNMENT

MEMBERS

CHIEF ENGINEER (EMO), CWC
(ALTERNATE: DIRECTOR (EM),CWC
ADDL. SECRETARY/JOINT SECRETARY, M/O ENVIRONMENT AND FORESTS
OF THE STATE GOVERNMENT

ADDL. SECRETARY/JOINT SECRETARY, DEPARTMENT OF REVENUE/REHABILITATION

ADDL. SECRETARY/JOINT SECRETARY,M/0 WELFARE OF THE STATE GOVERNMENT

ADDL. SECRETARY/JOINT SECRETARY,M/0 AGRICULTURE OF THE STATE GOVERNMENT

ADDL. SECRETARY/JOINT SECRETARY,PLANNING DEPARTMENT/BOARD OF THE STATE GOVERNMENT

ENGINEER-IN-CHIEF, WATER RESOURCES/IRRIGATION DEPARTMENT OF THE STATE GOVERNMENT

CHAIRMAN OF THE ENVIRONMENTAL MANAGEMENT COMMITTEE OF EACH PROJECT IN THE STATE FOR WHICH COMMITTEES'HAVE BEEN SET UP

REPRESENTATIVES FROM TWO NON-GOVERNMENTAL ORGANISATIONS OF REPUTE IN THE STATE

CHIEF ENGINEER/DIRECTOR OF THE GROUND WATER DEPARTMENT OF THE STATE GOVERNMENT

ADDL. SECRETARY/JOINT SECRETARY,DEPARTMENT OF HEALTH/PUBLIC HEALTH OF THE STATE GOVERNMENT

MEMBER SECRETARY

"HIEF ENGINEER AT THE STATE CAPITAL CONCERNED WITH ALL THE PROJECTS OR MOST OF THE PROJECTS

Organisational Structure of State Level Monitoring Committee

Annexure-XI

PROJECT LEVEL ENVIRONMENTAL MANAGEMENT COMMITTEE

CHAIRMAN

CHIEF ENGINEER OF THE PROJECT
[Chief Engineer connected with maximum environmental works
of the Project when compared with other Chief Engineers,
if there are more than one Chief Engineer for this Project)

MEMBERS

OFFICERS OF THE LEVEL OF
SUPERINTENDING ENGINEERS/EXECUTIVE ENGINEERS

REPRESENTATIVES FROM THE DEPARTMENT OF ENVIRONMENT AND FORESTS

REPRESENTATIVES FROM THE DEPARTMENT OF REVENUE/REHABILITATION

REPRESENTATIVES FROM THE DEPARTMENT OF WELFARE

REPRESENTATIVES FROM THE DEPARTMENT OF AGRICULTURE

REPRESENTATIVES FROM THE DEPARTMENT OF GROUND WATER

REPRESENTATIVES FROM THE DEPARTMENT OF HEALTH/PUBLIC HEALTH

TWO REPRESENTATIVES FROM THE NON-GOVERNMENTAL ORGANISATIONS
DIRECTLY LOOKING AFTER THE WELFARE OF
THE MAJORITY OF THE PROJECT AFFECTED
PERSONS IN THIS PROJECT

DIRECTOR (APPRAISAL & MONITORING /APPRAISAL) OF THE REGION(CWC)

MEMBER SECRETARY

SUPERINTENDING ENGINEER CONNECTED WITH THE MOST OF THE
MATTERS AT THE HEADQUARTERS OF THE CHAIRMAN

Organisation Structure of Project Level Environmental Management Committee

Annexure-XII

HIGHLIGHTS OF DRAFT NATIONAL POLICY FOR RESETTLEMENT AND REHABILITATION

1. Devise attractive R&R package providing for housing, agricultural land or other income generating occupation,free transport of men and material to the resettlement site for each family.

2. Representative bodies of public officials, independent technical experts, legal experts, community leaders and NGOs should be involved with the project affected area.

3. R&R package should also cater to the needs of landless farmers, food gatherers, forest produce collectors and self employed people residing in the project affected area.

4. Major sons should be considered as an independent family.

5. Lass of community property, resources base, amenities services, socio-cultural institutions and places of historical and cultural value should be restored in the re-location sites.

6. Drinking water supply, water supply for cattle, gracing land and fodder, primary schools, panchayat house, approach roads from the main road and internal roads, electric connection to each house and public lighting, primary health centre, religious places, cemetry and graveyard and places of public entertainment as existing in the earlier village should be provided in the resettlement site.

7. The plan should have special provisions for tribals and other disadvantaged groups.