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STATE WATER POLICY

DEPARTMENT OF IRRIGATION
THIRUVANANTHAPURAM

MARCH 1992

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1. THE NEED FOR A STATE WATER POLICY

1.1 Water is one of the primary natural resources on which the sustenance and eco-development of Kerala State are largely dependent. Unlike many northern rivers of the country, none of the State rivers is snowfed, resulting in sharper imbalance between the water availability in summer and monsoon months. Though rainfall in the State is higher than the national average, the steep topography, extreme unevenness of the rainfall in time and space, very short river lengths, unique physiography, geology, soil, vegetation and very high population density have resulted in low capability for utilisation. Percapita fresh-water availability in the State is also one of the lowest in the country. In fact it is even lower than Rajasthan and much lower than national average.

1.2 Out of the 44 rivers in the State, nearly 3/4th of them originate and flow exclusively within the State boundaries and do not have any inter-State implications and overtones. These have to be harnessed and managed to the best advantage of the State considering, among other things, the necessity to maintain an ecologically healthy environment, exclusively within the State boundaries, for the welfare of the State and its environment. The State being bounded by the Western Ghats on the east and the Arabian sea on the west, the major groundwater basins in the State also do not have any significant inter State component. All these indicate that Kerala State may be the only State in the country, which to a large extent, may be considered as "Hydrologically land locked".

1.3 Moreover the cropping pattern, land use, hydrological status and environmental need of the Kerala State are distinctly different from those of other States. In the above context, the need for a relevant State Water Policy (in spite of having a National Water Policy at the Centre) becomes abundantly clear. The State's Water Policy will be complementary to the National Water Policy.

2. WATER RESOURCES DATA BASE

2.1 Planning for any natural resource requires a detailed data base and this is of crucial importance for water resources. Continuous monitoring, recording, processing, analysis and evaluation of hydrometeorological data like rainfall, discharge, groundwater table fluctuation, temperature, humidity, evaporation, salinity intrusion etc. are essential for scientific and perspective planning for optimum development and utilisation of water resources.

In Kerala, there are large number of existing raingauges, stream gauges and other hydrometeorological measuring equipment maintained by various governmental and private agencies. Proper coordination of these agencies for centralised processing and evaluation of these data is essential. An optimum network of hydrometeorological stations in the State level and processing and storage of the data, generated from these stations, at a central place is a pre-requisite, for water resources planning in the State. Government therefore proposes to make necessary administrative arrangements for such central facilities.

The processed data so collected will be made available to any agency of the Kerala State Government for their project works.

In future, water development projects in the State will be based on the above mentioned extensive data base.

3. PLANNING FOR RIVER BASIN DEVELOPMENT & INTEGRATED WATERSHED MANAGEMENT

For the integrated development of land and water resources of any region, planning must be based on the requirements of the relevant river basins or waterseds. The river basin and its various sub-basins need be studied in terms of its potential, present utilisation and future requirements. Then only, it will be possible to prepare scientific river basin development plans for drawing definite action plans as well as micro and mini watershed management plans for implementation. Inter-tributary and inter-basin diversions of river water within the State will have to be considered keeping in view the larger interests of various regions of the State. Assessment of utilisable groundwater potential in the different regions of the State needs to be undertaken on priority basis. These data in conjunction with surface water potential data should be utilised for drawing definite action plans for the basin, the region and the State. Keeping in view the total development of the State, the process of data assimilation and preparation of development plans shall adopt, the following sequence.

3.1 A master plan for water resources development for the State will be made. It shall consist of, amongst other things, integrated river basin development plan, basin wise water resources availability (including surface and ground water) and demand estimation. First estimates shall have to be made from updated available data and this will be refined from time to time with availability of future data.

3.2 Plans for integrated basin development and watershed management shall be prepared for each basin or watershed on scientific lines and with due regard for environmental and socio-economic impacts.

3.3 Suitable provision for drinking water supply must be kept in existing and future irrigation and hydel schemes.

3.4 River basin development plans for all the basins of the State shall have to be prepared by appropriate agencies of the Government and these development plans will be implemented subject to the approval of a Water Resources Control Board (WRCB) to be established.

3.5 In the case of Inter-State river basins, regional or State level development plans shall be prepared subject to agreements and/or understandings between the concerned States. The State Water Resources Control Board shall be the agency to advise the Government and concerned Departments in the matter of such apportionment, where inter-State agreements/understandings do not exist.

3.6 To prevent adverse environmental impact, like bank instability and associated problems arising out of uncontrolled extraction of sand from river beds, Government proposes to regulate such extraction. For evolving such regulatory mechanism, consultation with concerned agencies will be made.

3.7 At present there is no uniform law for irrigation development applicable for the whole State. Therefore a legislation will be made in the matter of construction of irrigation works and the conservation and distribution of water for purposes of irrigation that will apply to the entire State.

3.8 In the area of Water Resources Development in the State, drinking water schemes will get topmost priority. Keeping in view the environmental and ecological upkeep of a region, water resource development plan should provide for irrigation, power generation, industrial needs, flood control, navigation and salinity extrusion as may be relevant and necessary for the concerned area.

4. MAXIMISING WATER AVAILABILITY AND REDUCING DROUGHT IMPACT

In Kerala, in spite of a heavy annual rainfall, rivers have hardly any water for 6 months in a year resulting in very severe potable water scarcity for half of the year. Moreover, the narrow width of the State, steep slope, porous substratum, deforestation tendencies in the high ranges, non-uniform distribution of rain fall, complete absence of snow in the Western Ghats (originating point of all the rivers) and high population density are contributing factors for such severe temporal imbalance of water availability in the State. This also explains the paradox of Kerala State which is situated in one of the highest annual rainfall zones of the country, having one of the lowest per capita freshwater availability in the country. The factors mentioned above are also the reasons for dry beds in almost all rivers of the State for substantial periods of the year when the groundwater level also declines.

The clue to solve the water crisis in the midst of rainfall in plenty, is to arrest and conserve as much rainwater as possible, at places wherever it is feasible. For this, the State shall have both short and long term specific water management strategies.

4.1 Long Term Water Management Strategy For The State

Considering the unique features of Kerala State, long term water management strategies will be as follows:

1. Maximum use must be made of the available and utilisable storage spaces. All possible storage sites will be developed for maximising storage of rain water.

2. Massive insitu soil and water conservation measures through contour trenching, check dams and other watershed management practices will be taken up. Conversion of agricultural lands for non-agricultural use will be minimised.

3. Deforestation will be avoided as far as possible and afforestation programmes in river catchment areas with browsable indigenous species will be encouraged.

4. Irrigation and hydel reservoirs will be linked up with urban and rural water supply schemes. Steps will be taken to maintain water quality of freshwater lakes like Sasthankotta Pookot, Vellayani and others and they will be integrated with drinking water supply schemes, wherever it has not been done already.

5. Attempts will be made to use all non-conventional freshwater resources like tanks, springs, turangams etc., for domestic water supply and Minor Irrigation schemes. Preservation of existing freshwater bodies will be ensured. Conversion of marshy lands and waterlogged areas into sweet water lakes will be encouraged wherever feasible. Land reclamation by filling up of sweet water bodies will be discouraged.

6. Selective and judicious groundwater development through bore and tube wells without causing salinity incursion in coastal belt and drying up of neighbouring household wells will be undertaken. Conjuctive use of ground water will also receive appropriate attention. Ground water extraction in the State will be regulated through a legislation.

7. Areas frequently affected by drought and drinking water scarcity will be identified and programmes or schemes for permanent solution will be evolved and implemented.

4.2 Short term Water Management Strategies for the State

Realising the immediate necessity to improve the deteriorating water scenario in the State, the following short term strategies will be adopted .

1. Deepening, desilting and maintaining of house compound wells will be encouraged. Closure of these will not be allowed.

2. Drip Irrigation and other water saving irrigation technology will be encouraged and wherever feasible, they will be integrated with household compound wells/existing overhead tanks.

3. Desilting of tanks and ponds, deepening of community wells and construction of contour trenches and check dams at appropriate places shall be done. This will help to conserve fresh water resources of the State and generate employment.

4. Training programme for the public on the maintenance and upkeep of household compound wells and hand pumps for bore wells shall be undertaken.

5. Leakage in the existing distribution pipes will be plugged and non-functional pumps in the bore and tube wells already installed will be repaired.

5. WATER QUALITY MAINTENANCE AND UPGRADATION

Water ceases to be a resource if its quality in relation to its use deteriorates. Hence, it is extremely important that not only quality of natural water bodies have to be kept within specified standards of acceptance but also, regular quality upgradation programmes have to be undertaken for those water bodies which are in perpetual danger of getting polluted. There shall be a regular programme of continuous monitoring of our freshwater bodies for their health and ecology. The data so generated shall be processed and used for design and development of water resources projects. Apart from the rivers, important freshwater lakes and backwater bodies like Sasthamkotta, Ashtamudi, Vembanad, Pookot etc. shall receive special attention under this programme.

6. INLAND WATERWAYS, INLAND FISHERIES & ACQUATIC RECREATION FACILITIES

Not long ago, Kerala had a good network of inland waterways. Because of disuse, weed infestation and general neglect this has either become defunct or a major part of it has become unusable for transportation needs. With the increasing price of fuel and ever increasing conjestion on our roadways, it has become imperative to open up and increase our waterway facilities in the State. Appropriate steps will be taken in this direction.

Kerala has large numbers of man-made and natural freshwater lakes reservoirs, tanks, ponds and backwater bodies. All of them have great potential for inland fisheries and for creating aquatic sports facilities. Department of Fisheries and Department of Tourism shall jointly develop these sectors which will have a great positive impact on the State's economy.

7. HYDROPOWER GENERATION IN THE STATE

Kerala is endowed with large hydel power potential (of the order of 2600 MW) out of which only 1476.5 MW is generated now. The requirement for 1991-92 is estimated to be 1968 MW (with a peak of 2250 MW at 58% LF) and is expected to rise considerably in coming years. Therefore the State will develop its hydel potential to the maximum with minimum disturbance to the environmental scenario in the State.

8. SHORE EROSION AND PREVENTIVE MEASURES

The State has a long coast line of about 560 Km. where one of its important economic life line is concentrated and where population density is one of the highest in the world. A major part of the coast line is prone to moderate to severe shore erosion and this results in loss of precious land and threatens a large part of fisherman population all along the coast. Effective and economic shore protection measures will be undertaken on the coastal areas which are prone to erosion.

9. TRAINING OF PROFESSIONALS ON WATER MANAGEMENT AND RELATED MATTERS

Globally the fund of knowledge on various facets of water resources with reference to problems and techniques to solve them is increasing at an exponential rate. Hence updating the knowledge of professionals, bureaucrats and other officials involved in water issues through organised training is essential. Inservice training in water management in the State is being imparted by Centre for Water Resources development and Management (CWRDM) under the sponsorship of the State Government, the Central Government and external assistance. Officials from the Departments of Irrigation, Agriculture, KWA and other relevant agencies shall be encouraged to undergo these training programmes. For officials of Irrigation, KWA and Agriculture Departments, attending these and similar training courses will be made compulsory.

10. SCIENCE & TECHNOLOGY INPUT FOR THE STATE'S WATER SECTOR

Nothing can be achieved economically and efficiently without appropriate Science & Technology input at the proper levels. The State's water sector is no exception to this. Fortunately, the State has developed a strong Science & Technology base in various natural resources management sectors. Kerala has institutes exclusively devoted to provide Science & Technology input in various specialisations including Forestry, Earth Sciences and Water Technology. In the Water Sector, CWRDM will provide necessary Science and Technology input to all the Water related service departments. These service departments like Irrigation, KWA, Groundwater, Agriculture & KSEB will earmark half to one per cent of their annual budget for Science and Technology works pertaining to Water resources development, management and related works.

Priority areas of activity in the State where Science and Technology input is essential are:

1. Drought and flash flood management

2. Salinity prevention in coastal wells and rivers

3. Estuary and backwater management

4. Water harvesting techniques at the levels of river basin, small watersheds, house compounds and roof tops

5. Land use-erosion-sedimentation-infilitration—evaporation relationships

6. Modern irrigation technology like drip and sprinkler

7. Water management in irrigation

8. Hydropower generation through mini and micro hydel projects

11. INSTITUTIONAL ARRANGEMENTS TO IMPLEMENT THE STATE WATER POLICY

To implement the various programmes and provisions mentioned in this State Water Policy Document, the following institutional and administrative measures will be taken up:

11.1 A Water Resources Control Board (WRCB) will be formed to oversee and co-ordinate all the activities to implement the State Water Policy. The functions and composition of the Water Resources Control Board will be as given in Appendix-I.

11.2 A centralised Hydrological Data Bank and Data Processing Centre will be established under the Irrigation Department. A consultative body consisting of Irrigation Department, CWRDM and KSEB shall provide necessary advice and guidance to this unit.

11.3 A separate Cell in the Irrigation Department will be formed to look after and co-ordinate all programmes related to non conventional fresh water resources in the State viz. tanks, ponds, springs, natural fresh water lakes and turangams.

11.4 Ongoing specialised training and research on water resources development and management and related subjects in CWRDM will be strengthened.

11.5 In order to optimally develop State Inland Water Ways, appropriate organisational structure will be built up.

12. CONCLUDING REMARKS

With alround greenery and high rainfall, it was always presumed that Kerala does not have any water related problem—but this myth has broken down owing to persistent water scarcities faced by the State since the early eighties.

Kerala has land, water and environmental features which are unique in the country.

Absence of snow in the high ranges, steep topography, highly uneven rainfall, high population density, one of the lowest per capita water availability and the fact that the majority of the State's rivers do not have any interstate connotation have made it imperative that the State has its own Water Policy Planning and proper management of this vital resource is of utmost importance for the general economy of the State and welfare of the people.

The State Government is committeed to implement the policies as enunciated in this document by developing detailed implementation strategies.

T. M. JACOB,
Minister for Irrigation and
Cultural Affairs

APPENDIX I

FUNCTIONS AND COMPOSITION OF WATER RESOURCES CONTROL BOARD (WRCB)

Functions

1. To help concerned agencies to implement the programmes laid down in the State Water Policy and monitor necessary follow up action.

2. To examine and approve major water development plans prepared by various agencies.

3. To advise Government on Inter-State Water matters.

Composition of WRCB

WRCB shall have a Governing Body (GB) for overseeing the activities and an Executive Committee (EC) for developing specific activities as laid down in the State Water Policy.

The composition of the GB and the EC shall be as follows:

Governing Body

1.	Irrigation Minister	Chairman
2.	Irrigation Secretary	Vice-Chairman
3.	A full time eminent water resources specialist to head the WRCB and designated as Director General to be appointed by Government	Member Secretary

4.	Secretary, Agriculture	Member
5.	Secretary, Planning	,,
6.	Secretary, Forestry	,,
7.	Secretary, Science & Technology	,,
8.	Executive Director, CWRDM	,,
9.	Chairman, KSE Board	,,
10.	Chairman, KWA	,,
11.	Chairman, WPCB	,,
12.	Four eminent scientists/ - engineers in the field of Water Resources Management	,,

Executive Committee

1.	Director General, WRCB	Chairman
2.	Director, WRCB	Member Secretary
3.	Chief Engineers	
	IDRB	Member
	Irrigation	,,
	KWA	,,
	KSEB (Civil)	,,
4.	Executive Director of CWRDM or his nominee	,,
5.	Director, Agriculture	,,
6.	Director, State Groundwater Board	,,
7.	Director, KFRI	,,
8.	Member Secretary, WPCB	,,
9.	Director, Science &Technology	,,
10.	Two eminent water specialilists nominated by Governing Body	,,