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Chhattisgarh State Water Resources Development Policy, 2012

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Chhattisgarh State Water Resources Development Policy 2012

1. Foreword-

Water Management is a challenging task for socio-economic growth of state in the field of Irrigation, Power, Environment pollution control and providing safe drinking water.

Water is a valuable resource of Chhattisgarh State. About 80% population of state depends on agriculture activities for their livelihood. Agriculture of state mostly depends upon rains, as such for development of state, effective and efficient utilization of water resources is necessary. Although Chhattisgarh state is having huge storage of water but it has not been satisfactorily utilised. In the past few years due to lack of financial resources, not only incomplete irrigation projects could be completed but maintenance of completed schemes also could not be done effectively. The constitution of Chhattisgarh State on 01 November 2000 has provided an opportunity to develop the water resources of the State in a planned manner. In view of importance of development of water resources in economic development of State, an effective and feasible water development policy is essential.

1.1 Need for State Water Resources Development Policy-

1.1.1 There is a need to remove the large disparity between stipulations for water supply in urban areas and in rural areas. Efforts should be made to provide improved water supply in rural areas with proper sewerage facilities. Demand and use of water is related to many fields and they are controlled at various levels. Rapid growth of population and industries, over-abstraction of water resources, unplanned urban development and uncontrolled pollution are some of such issues on which sufficient attention is to be given to fulfill the challenges of different Water related areas.

1.1.2 There are number of challenges related to the development of new infrastructure, maintenance and operation of existing infrastructure and increasing threats due to pollution prone resource, over-abstraction, and unplanned development that exacerbate existing climatic risks such as droughts and floods.

- 1.1.3 Water logging, salinization, and increased levels of toxic elements in the water are serious concern. Water management, Water areas planning has an opportunity to work in this field. Quality conservation and improvements are even more important for ground waters, since cleaning up is very difficult. It needs to be ensured that industrial, effluents, local cess pools, residues of fertilizers and chemicals, etc., do not reach the ground water.
- 1.1.4 Ground water development has played a crucial role, in meeting the rising demands for water resulting from onset of green revolution, as well as drinking water and droughts.
- 1.1.5 There is a need to plan for flood control and management. Physical flood protection works like embankment and dykes, extensive soil conservation in the catchments, prevention of forests and increase in the forest coverage, adequate flood cushioning in water storage projects, whenever feasible to facilitate better flood management and extensive network for flood forecasting to establish a system of timely warning to the settlements in the flood plains, would be required to minimize the loss of life and property on account of floods.
- 1.1.6 Water needs to be managed as a community resource held, by the state, under public trust doctrine to achieve food security, livelihood, and equitable and sustainable development for all.
- 1.1.7 It needs to be recognized that the field practices in water sector in advanced countries have been revolutionized by advances in information technology and analytical capabilities. A re-training and quality improvement programme for water planners and managers at all levels in private and public sectors, needs to be undertaken.

2. Present Scenario

Chhattisgarh is an agriculture based state, where more than 80% population depends upon agriculture. About 44% areas of the state is covered by forest, and about 32% population is scheduled tribe. In the state upto the year 2011 irrigation potential created is about 18.09 lakhs Hectare area whereas actual irriagtion is being

done in 11.62 Lakhs Hectare area. Total sown area is 56.83 Lakhs Hectare in the state. Percentage of irrigation created is 31.83% which is very much less than national average of 48.90%.

At Present total 07 Major irrigation Projects, 33 Medium irrigation projects, and 2335 minor irrigation projects are completed, while 04 Major projects, 06 Medium projects and 412 minor projects are under construction. Main projects under construction are Minimata Bango project, Rajiv Samoda phase-II, Sondhur Project, Kelo project, Kosarteda Project, Karranalla Barrage etc. Main rivers of the state are Mahanadi, Shivnath, Hasdeo and Indravati river. In the light of importance of agriculture development, water resources is the main key of development of the state.

3. Objectives

Development of water resources is mainly essential for drinking water agriculture and industrial purposes. Huge investment has been done in development of water resources, but due to socio-economic causes, return from this investment is very less. Forest and villagers of the submergence areas of proposed construction of dams for the development of water resources also get effected. So effective rehabilitation of villagers of submergence area is also essential. In view of all these points following are the main objectives of "Water resources development policy" of the State Government:-

- 3.1 Development of water resources is to be done in such a planned way, which is sustainable to the environment. Encroachments and diversion of water bodies (like rivers, lakes, tanks, ponds, etc.) and drainage channels (irrigated area as well as urban area drainage) must not be allowed, and wherever it has taken place, it should be restored to the extent feasible and maintained properly.
- 3.2 Technically feasible every possible effort must be taken for the development of water resources in the drought affected and rainshadow areas. Land, soil, energy and water management with scientific inputs from local, research and scientific institutions should be used to evolve different agricultural strategies and improve soil and water productivity to manage droughts.

- 3.3 To make water availability for drinking, agriculture and industries at such feasible rates so that at least maintenance expenditures can be met.
- 3.4 In view of necessity of huge investment in water resources development, private sector investment is to be encouraged.
- 3.5 Participation of leaders of water users in water resources development and maintenance be ensured. Water Users Associations should be given statutory powers to collect and retain a fixed portion of water charges, manage the volumetric quantum of water allotted to them and maintain the distribution system in their jurisdiction.
- 3.6 To ensure water security to the entire population by ensuring appropriate institutional and legal frame work in the water sector for supply of water to the various uses/users.

3.7 Methods to Improve Water Management and Quality

- 3.7.1 Integrated and co-ordinated efforts by all concerned institutions/organisations in developing a policy framework for planning water resources augmenting them and putting them to productive use.
- 3.7.2 Effective participation of users in development and management of the states water resources.
- 3.7.3 Increasing the productivity of water by fixing the standards of infrastructure services and utilisation efficiency .
- 3.7.4 Reducing the climatic risks and improvement of rainfed agriculture productivity.

3.8 Methods to improve Water availability and Quality of Irrigation water

- 3.8.1 Realising optimum irrigation potential under Major, Medium and Minor Irrigation Projects.
- 3.8.2 Improving the performance of Irrigation projects by narrowing the gap between potential created and utilisation.

3.9 To maintain and sustain ecological balance by -

- 3.9.1 Conserving and protecting the water storing structures and wetlands through regulation and enforcement of standards for water infrastructure, uses and waste disposals.
- 3.9.2.Regulating the uses of lands around water storing structures.

3.9.3 Enforcing the recycling of industrial effluents and water disposal. Also, reuse of urban water effluents from kitchens and bathroom, after primary treatment, in flush toilets should be encouraged.

4 Factors of Water Resources Development Policy

Following are the main factors of State Policy of Water Resources Development-

- 4.1 Water resources planning.
- 4.2 Water resources development.
- 4.3 Water resources management.
- 4.4 Rationalization of water rates.
- 4.5 Water conservation.

4.1. Water Resources planning

For the fulfillment of present and future needs of water and for planning of water resources, following actions will be taken by the State Government :-

- 4.1.1 Estimation of surface water and ground water in the state will be done and according to their availability, an integrated 'Water resources development master plan' will be prepared.
- 4.1.2 It will be ensured that during the planning of Major and Medium Projects, need of water for drinking and irrigation along with industries and electropower generation will also be considered.
- 4.1.3 State government will give top priorities to the drinking water and agriculture in utilisation of water resources.
- 4.1.4 During planning of minor Irrigation projects participation of farmers and local citizens will be ensured.
- 4.1.5 Integrated utilisation of surface and ground water will be given priority and quantity of available ground water will be estimated scientifically time to time.
- 4.1.6 Necessary legal provisions will be made to keep balance in abstraction of ground water.

4.1.7 Total Water availability in Chhattisgarh from different sources are as follows –

(i) <u>Surface Water</u>	-	<u>48296 MCM</u>
(ii) <u>Ground Water</u>	-	<u>14548 MCM</u>
<u>Total Water Availability</u>	=	<u>62844 MCM</u>

By the end of year 2040, allotment of water for different purposes has been proposed as follows –

(1) For Domestic purpose (Drinking Water, Nistar, Filling of Water Tanks etc.)

$$20\% \text{ of } 62844 = 12569 \text{ MCM}$$

(2) For Agriculture Purpose – By the end of year 2040 the ultimate irrigation in 40 lacs Hactare area (30 lacs hactare for Kharif + 10 lacs hactare for Rabi area) is aimed .

$$50\% \text{ of available quantity of water } 62844 = 31422 \text{ MCM}$$

(3) For Industrial Purpose 5% of 62844 = 3142 MCM

$$\text{Quantity of total Water Allotted} = 47133 \text{ MCM}$$

$$\text{Quantity of Balance Water } 62844 - 47133 = 15711 \text{ MCM}$$

By Regeneration, Quantity of water available is estimated as follows –

(1) From Domestic Purpose – 50% of Total water allotment

$$= 50\% \text{ of } 12569 \text{ MCM} = 6285 \text{ MCM}$$

(2) From Agriculture Purpose – 10% of Total water allotment

$$= 10\% \text{ of } 31422 \text{ MCM} = 3142 \text{ MCM}$$

(3) From Industries – 50% of Total water allotment = 50% of 3142 MCM = 1571 MCM

$$\text{Total water available from regeneration} = 10998 \text{ MCM}$$

$$\text{So after use quantity of Total water availability} = 15711 + 10998 = 26709 \text{ MCM}$$

Total Quantity of water available by the end of year 2040 is 26709 MCM which will be reserved for casual requirement.

4.2 Water Resources Development

In view of importance of agriculture in development of the state the State Government gives top priority to water resources development in the state. Following strategy will be adopted for water resources development in the state :-

- 4.2.1 Funds will be made available to the projects under construction on the basis of priority of their progress in different phases. For this, efforts will be made to gain funds from NABARD, AIBP, or International Financial Organizations apart from Government Budget.
- 4.2.2 In view of huge expenditure in new projects, private sector investment will be welcomed for development of water resources.
- 4.2.3 On the basis of availability of financial resources, new projects will be taken up in such a way that they will complete within time and give benefits.
- 4.2.4 Regional imbalance will also be taken into account while taking up the new projects.
- 4.2.5 While taking up new projects, resettlements, rehabilitation and environmental balance will be given priority and rehabilitation package will be made more attractive. Compensation amounts of land to be acquired will be paid early. Regular participation of project effected people will be given priority in rehabilitation process.
- 4.2.6 Every possible efforts will be made for water resources development in drought effected areas and rainshadow areas.
- 4.2.7 State government will promote such irrigation projects to which users are agree to take responsibilities of repairs and maintenence.
- 4.2.8 Inter-State, inter-regional disputes in sharing of water, hamper the optimum utilization of water through science based planning on basin/sub-basin basis. Hence as far as possible, water disputes will be resolved at the earliest by mutual talk.
- 4.2.9 Cultural assets should also be adequately protected in project development.
- 4.2.10 Environmental aspects including catchment area treatment and management, ground water and surface water sustainability will be taken into account in the development of project.

4.3 Water Resources Management

Given the limits on enhancing the availability of utilizable water resources and increased variability in supplies due to climate change, meeting the future demand of water will depend more on demand management, and hence, this needs to be given priority, especially through (a) evolving and agricultural system which economizes on water use and maximizes value from water, and (b) bringing in maximum efficiency in use of water and avoiding wastages. Full utilisation of huge capacity dams and canals was not possible because sufficient priority has not been given to maintenance in earlier time. Extra irrigation facility can be achieved in less expenditure by better maintenance of constructed dams and extension of existing canals.

Following actions will be taken by the State Government for better management of Water Resources :-

- 4.3.1 Actual necessity of funds for repairs and maintenance of dams and canal will be estimated and accordingly efforts will be made to provide it.
- 4.3.2 Participation of farmers and WUA's in management of irrigation system will be ensured.
- 4.3.3 In water distribution arrangements in the industrial sector, private investment will be welcomed.
- 4.3.4 Non Government Organisation will be promoted to train the farmers in the efficient arrangement of irrigation in water conservation areas.
- 4.3.5 Sufficient safety arrangements will be done for constructed dams and major construction works.
- 4.3.6 Flood forecasting is very important for flood preparedness and should be expanded extensively and modernized using real time data acquisition system and medium range weather forecasting to enhance lead time. Latest information technology will be established in dams and canals management in view of importance of information technology in the field of flood control.

- 4.3.7 The state will take appropriate measures to ensure effective, timely and cost effective delivery of water related services including drinking water, irrigation, hydropower, industrial, environmental, fisheries and community services.
- 4.3.8 The state will ensure that existing water infrastructure is rehabilitated appropriately and modernised so that its performance is at optimum level and reorganised the multipurpose dimensions of the assets.
- 4.3.9 In a given irrigation area, effective and fruitful involvement of water users association will be continuously promoted and WUA's will be strengthened and advise of users will be taken to improve the quality of services.
- 4.3.10 The Chhattisgarh Water Resources Regulatory commission will be established under the state legislation to provide the regulatory institutional frame work at the state level.
- 4.3.11 Adequate measures will be taken to regulate over abstraction of ground water.
- 4.3.12 In view of likely impact of the climate change, there is a need to adopt compatible agricultural strategies, and cropping patterns. This may be achieved by involving the water users, sensitizing them appropriately and building their capacities.

4.4 Rationalization of Water Rates

Construction cost of water projects and provision cost of water at a place comes very large so water rates should be decided by giving due consideration to funds to be expended for water collection and profit to be earned. For this following actions will be taken :-

- 4.4.1 The State will ensure provisions for full operations and maintenance requirements of water resources and irrigation infrastructure projects through an appropriate combination of rationalization of water charges and budgetary subsidy support.
- 4.4.2 Rationalization of water rates for agriculture and industries will be done in such a way that funds expended on the project may be partly recovered in future for necessary maintenance of the project.

4.4.3 Arrangement for regular revision of water rates will be established.

4.5 Water Conservation

Water, over and above the pre-emptive need for safe drinking water and sanitation, should be treated as an economic good so as to promote its conservation and efficient use. In view of limited availability and high cost of water, economic use and conservation of water resources is essential. In addition to this water infrastructure should be fully rehabilitated and renewed. Following actions will be taken by the state government -

4.5.1 Use of new technology for water conservation will be promoted.

4.5.2 Research work in the field of water conservation will be promoted.

4.5.3 All efforts with respect to generate awareness regarding necessity of water conservation and different techniques will be promoted.

4.5.4 To the extent possible, existing programs like MGNREGA may be used by farmers to harvest rain water using farm ponds and other soil and water conservation measures.

5 Work plan

For the implementation of water resources development policy, following actions will be taken :-

5.1 Legal initiatives-

To regulate the balanced abstraction of ground water, and to ensure participation of farmers in the management, existing provisions will be modified.

5.2 Institutional reforms and capacity building

Continuing research and advancement in technology shall be promoted to address the issues in water sector in a scientific manner. Innovations in water resources sector should be encouraged, recognized and awarded.

following works will be done under this subject -

5.2.1 Regular analysis will be done and directions will be given by the Chhattisgarh Irrigation Project Board constituted under chairmanship of Chief minister for water resources planning and development in the state.

- 5.2.2 Priorities and usage of water will be decided through state water resources utilisation committee and district/division level water utilisation committee.
- 5.2.3 Data will be collected by establishing data base through scientific system in water resources department, so that quantity and qualities of ground water storage should be estimated correctly and can be utilised in water resources planning .
- 5.2.4. A committee will be constituted for water rates fixation and their revision.
- 5.2.5 "Dam safety cell" will be constituted for safety of constructed major dams and big construction works.
- 5.2.6 Arrangements for regular training of water resources department officials and workers will be done. Farmers will also be trained in this way. Appropriate subjects and standards will be decided for this training. Subjects like project planning, implementation, operation and water distribution will also be there in this training.

5.3 Implementation of the policy

The Chhattisgarh government will decide programme for inclusion of recommendations of water resources development policy during implementation of XII Five-Year Plan. Towards this the Government of Chhattisgarh will notify the schedule for implementation of the following provisions of the policy -

- (a) Establishment of Water Management Committee.
- (b) Reorganising the Irrigation and Command Area Development Department.
- (c) Establishment of Chhattisgarh State Water Regulatory Commission.

5.4 Social Awareness

Following efforts will be done to generate social awareness about valuability of water -

- 5.4.1 Water users Associations and Water users Departments will be discussed before taking decision related to arrangements of water resources.

5.4.2 Participation of public will be promoted for social awareness regarding water conservation. Local institutions and social welfare organisations will also be involved in this work. Local governing bodies like Panchayats, Municipalities, Corporations, etc. and Water Users Associations shall also be involved in planning and implementation of the projects.

6. Conclusion

Chhattisgarh State water Resources Development Policy is based on the objectives of ensuring availability of safe drinking water and sufficient water for agriculture and industries at reasonable cost under legal frame work. In this policy, it is preassumed to make the availabilty of water to water user through water resources planning, construction, maintenance and operation has been adopted and part of social welfare organisations and private sector is promoted. It is expected that for full development of water resources storage will take place through implementation of state water resources policy.

Target of water resources development policy is to resolve the hurdles and to make water productivity better through provisions of institutional machinery. Improvement in Water management and water quality will be achieved through latest techniques, equipments, effective uses of appropriate proposals for water resources development, improved information techniques, advanced research in the information system, social awareness of the people, and latest knowledge based monitoring. Qualitative effect of Water Resources Development policy will be achieved by co-operation of different fields.
