

1 PREAMBLE

Water is a prime natural resource, which is fundamental to life, livelihood, food security, and sustainable development. With urbanization, changing lifestyle, population growth and rising needs of a developing state, the availability, affordability and sustainability of utilizable water will be under further strain in future. Lack of sufficient storage capacity of water and poor water management practices, lead to seasonal water shortage and flash floods in some parts of the State. The dependency on springs for meeting drinking water needs is very high in the State and the discharge of these springs is dwindling, leading to hardships faced by the dependent population. In addition, the distribution of water is inequitable and there is a lack of a unified perspective in planning, management and use of water resources.

Low public consciousness about judicious use of water and its economic value also results in its wastage and inefficient use. Further, lack of awareness about sanitation and hygiene is leading to contamination of water resources and increased disease burden on local communities.

The water bodies in Meghalaya are also victims of degraded catchment areas, lack of conservation and rampant mining activities. The water quality degradation has adversely impacted the aquatic life and availability of potable water. The dwindling discharge water flow during lean season leads to adverse impact on agricultural productivity and other livelihood activities.

With rising needs, aspirations and impact of climate change, availability of utilizable water in future will be under further severe strain with the possibility of increased water conflicts among different user groups.

Sustainable and equitable planning, development and management of water resources is critical for the economic development of Meghalaya and for securing good health and livelihoods of her citizens, while protecting the State's natural assets. To ensure drinking water security for the people of Meghalaya, spring-shed management will be promoted.

Considering the multiple and competing needs for water and the increased pressure on water resources, it is imperative that an integrated and holistic approach is taken for water resources management, where the various social, economic and environmental needs are balanced and met in a sustainable manner.

In addition, the increasing expectations of people to have physical access to sufficient quantity of quality water for household and livelihood opportunities, warrants a new approach towards governance, development and management

of water resources in the State. Moreover, planning, development and management of Water Resources need to be done by the State Government against the backdrop of national perspectives and by enabling systems that facilitate community management of this vital resource.

2. Policy Objectives

2.1 The State Water Policy of Meghalaya intends to “achieve sustainable development, management and use of Meghalaya’s water resources with community participation to improve health and livelihoods, reduce vulnerability, while assuring good governance for the present and future generations by promoting Integrated Water Resources Management”. Environmental sustainability and conservation, social inclusion and equity, techno economic viability will be duly considered in relation to all aspects of governance, management and consumptive use of water resources to ensure inter-generational equity.

2.2 The specific objectives of the policy are as follows:

- (i) Recognize water resources as a common pool resource;
- (ii) Provide equitable, sustainable, economical and efficient allocation of water as a provision of water for life;
- (iii) Provide safe and hygienic water for drinking, domestic and sanitation and livelihood development to all residents of the State;
- (iv) Ensure protection and conservation of catchments all water sources to prevent degradation of the quantity and quality of water sources and promote principle of 3Rs- Reduce, Recycle and Reuse.
- (v) Enhance resilience to disasters and the impacts of climate change;
- (vi) Ensure convergence of all water related interventions and activities
- (vii) Promote latest tools, technologies, dynamic and easily accessible data and information for use by the community and other stakeholders.
- (viii) Promote and support community participation in development and management of water resources;
- (ix) Setting up of an efficient and effective regulatory framework for the water sector in order to realize the economic value of water.

3. Water Allocation Priority

Priorities for water allocation for various usages will be broadly as follows:

- (i) Drinking water, sanitation and other domestic needs
- (ii) Minimum ecological needs

- (iii) Irrigation/Agriculture
- (iv) Hydropower generation
- (v) Economic activities / Industrial Use / Fisheries
- (vi) Other usages

4. Project Planning and Implementation

- 4.1 Comprehensive assessment of water resources in the State would be undertaken as follows:
- (i) Mapping of rivers, streams, springs and other water bodies on watershed basis for their conservation and sustainable use;
 - (ii) Water assessment of both surface and ground water for both availability and quality ; and
 - (iii) Prepare an inventory of developmental projects of both surface & ground water projects, under the Water Sector, taking into account the demand-supply pattern.
- 4.2 Multi-disciplinary and integrated efforts will be undertaken for planning of water resources projects, at the Village/Town level, according to priorities set out in this policy. The concept of water as a Common Pool Resource would be considered to ensure equitable access to water. Viable traditional methods of water resources management and traditional community knowledge regarding the water resources along with the modern tools, technologies and approaches would be used in project planning.
- 4.3 Being inter-disciplinary in nature, water resources projects should be planned considering social and environmental aspects also, in addition to techno-economic considerations. Consultation with project affected and beneficiary families to ensure rehabilitation of and compensation for affected people wherever applicable. Catchment area management, environmental and ecological concerns, to maintain minimum water flow throughout the year and provision for fish movement will be considered during project planning. Special focus would be given to quality of project preparation and project management to reduce time and cost overruns and sub-optimal realization of benefits.
- 4.4 Private sector and civil society participation, wherever feasible, may be encouraged in planning, development and management of water resources project as this may help in introducing innovative ideas, generating financial resources, introducing corporate management and improving service efficiency and accountability to users.
- 4.5 The Integrated Water Resources Management (IWRM) approach, with emphasis on finding reasonable and generally acceptable solutions for most of the stakeholders, should be followed for planning and management of

water resources projects. Integrated Watershed development activities, need to be taken in a comprehensive manner to increase soil moisture, reduce soil erosion and increase overall land and water utility. To the extent possible, existing programs may be used by farmers to harvest rain water using farm ponds and other soil and water conservation measures.

- 4.6 The State would encourage creation of multipurpose reservoirs to promote water security, create livelihood opportunities and enhance power generation through Run of the River Schemes. Wherever feasible, development for navigation may be kept in mind right from the planning stage.
- 4.7 Similarly, small water storage structures for rainwater harvesting and Ground Water Recharge, spring-shed development and spring rejuvenation would be promoted to improve water security. Ground water resources would also be explored for the purpose, wherever it is a cost-effective solution. Conjunctive use of water would be promoted to balance demand-supply of water throughout the year.
- 4.8 The concept of inter-linking of rivers may be taken into consideration, as and when the need arises, to ensure equitable distribution of water resources.
- 4.9 Use of surplus water as an economic good will be promoted through export of surplus water to water scarce regions for the interest of the State and the Country as a whole.
- 4.10 Financing for developmental projects will be based on expected outcome, current status, needs, opportunities, fund requirement, and priority be given for completion of on-going projects and rehabilitation of existing schemes.
- 4.11 Project implementation should be structured to incentivize efficient & economic use of water. All components of water resources projects should be planned and executed in a pari-passu manner so that intended benefits start accruing immediately and there is no gap between potential created and potential utilized.
- 4.12 Areas of convergence with other departments would be identified and concerned government departments/ agencies would be involved, wherever required in the entire project lifecycle.
- 4.13 Concurrent monitoring of project should be undertaken for timely interventions to avoid time and cost over-runs.
- 4.14 Monitoring and evaluation system would be established to identify bottlenecks for timely redressal and to analyze the impact of projects.

- 4.15 A system would be established by the Meghalaya's State Dam Safety Organization (SDSO) to undertake safety audit of bigger dams in the State at periodic intervals to identify and manage safety risks and ensure safety of the dam and mitigate adverse impacts.

5. Participatory Water Resource Management

- 5.1 A coherent and coordinated approach would be adopted to promote community and other stakeholders participation in planning and management of water resources to ensure self-sufficiency of water for villages and for promoting localized water utilization and decentralized water management. Therefore, it will be the fundamental duty of each & every citizen to play an active role in Participatory Water Resource Management.
- 5.2 In its endeavour to ensure safe water for domestic use and sanitation and water for livelihood activities, the State would empower and develop the capacity of communities to develop, regenerate and sustainably manage available water resources.
- 5.3 Efforts would also be made to encourage the associations of beneficiaries/ water users to own up the responsibilities to operate, maintain and manage the water infrastructures in the State. Steps would be taken, in collaboration with the communities, to ensure the sustainability of the water infrastructures.
- 5.4 The community and other stakeholders would be emphasized to take up reclamation of the abandoned degraded mines and old quarry areas. The community will also be encouraged to take up cleaning of rivers from time to time.
- 5.5 Protection and preservation of Fish Habitat and sanctuaries will be promoted through Community participation.

6. Conserving, Harnessing and Promoting Efficient Use of Water Resources

- 6.1. Appropriate actions will be taken to conserve and rejuvenate existing rivers, springs, reservoirs and to maintain their water quality and flow rate especially during the lean period. Conservation consciousness would be promoted through education, regulation, incentives and disincentives. For conservation of water resources, more focus may be on activities that have the possibility to minimize negative impacts and such activities should be planned and prioritized phase wise on a broad timeline.
- 6.2. In planning process, all the water usages/ demands and water availability will take into account the minimum ecological needs.

-
- 6.3 Regulation and management of water from all sources will be done in an integrated manner to ensure conservation and sustainable use of this resource. Appropriate regulations will be formulated for use of surface water and extraction of ground water for domestic use and commercial purpose.
 - 6.4 Improved land and water management practices, such as catchment area treatment and protection, protection and preservation of water resources, protection from land degradation, preservation of forest, afforestation of upper catchments, control of Jhum cultivation, riverbank protection and construction of check dams and field ponds would be promoted. Catchment area management plans would be prepared and implemented with community participation.
 - 6.5 Payment for Environmental Services (PES) would be adopted which would be based on “beneficiary pays principle”. The PES model would be adopted and implemented by upstream and downstream communities for conserving the water resources and revitalizing the catchment upstream and stopping further degradation.
 - 6.6 Sustainable harnessing of water resources such as roof top rain water harvesting, Jalkunds, springshed development, multipurpose reservoirs etc., would fulfill the needs of water not only for domestic use but also for livelihood development and income generation activities. In view of this, appropriate water resource projects would be promoted wherever feasible and viable. Roof top rainwater harvesting alongwith ground water recharge mechanism will be made mandatory in all building constructions and for which the concern authority would enforce.
 - 6.7 Recycle and reuse of water, after treatment to specified standards, would also be encouraged.
 - 6.8 Water saving mechanism in irrigation systems such as micro irrigation (drip, sprinkler, etc.), and seepage control methods would be encouraged. Recycling of canal seepage water through conjunctive ground water use may also be considered.

7. Adaptation To Climate Change

- 7.1 As per the future climate projections, rainfall is projected to increase in the Meghalaya State and the possibility of bringing extreme climate events is also likely to increase. The climate change may cause flash floods in certain parts while other parts of the State may experience water stress.
- 7.2 Climate change is likely to increase the variability of water resources affecting agriculture, water security, safety, human health and livelihoods.

Therefore, special impetus should be given towards risk assessment and mitigation by proper project planning and monitoring and by enhancing the capabilities of community to adopt climate resilient technological options.

- 7.3 The anticipated increase in temporal and spatial variability in availability of water due to climate change can be dealt by adopting suitable design of engineering structures, flood zone mapping, assessment of sediment load, developing adaptive storm water management practices and slope stability measures, increasing water storage in its various forms, namely, soil moisture, ponds, ground water, small and large reservoirs and their combination.
- 7.4 Revival of traditional water harvesting structures, springs and water bodies will be promoted through programmes for repair, renovation and restoration.
- 7.5 Preparation of a water management plan with Integrated Water Resource Management (IWRM) approach that leads to conserving water, minimizing waste and ensuring equitable distribution across various users will be promoted. The IWRM should take into consideration the urban water and sanitation infrastructure and services which are adaptable to changing population and circumstances.
- 7.6 The adaptation strategies could also include better demand and use management, particularly, through adoption of compatible agricultural strategies and cropping patterns and improved water application methods. Similarly, industrial processes should be made more water efficient.
- 7.7 Stakeholder participation in land-soil-water management with scientific inputs from local research and academic institutions for evolving different agricultural strategies, reducing soil erosion and improving soil fertility will be promoted. The specific problems of hilly areas like sudden run off, weak water holding capacity of soil, erosion and sediment transport and recharging of hill slope aquifers would be adequately addressed.

8. Water Budgeting

- 8.1 A system would be evolved for water budgeting at the village level which would be reviewed periodically. The approach to water budgeting would be through awareness creation about water resources and the need for water conservation, community participation for chalking out water management strategies, conducting Participatory Rural Appraisal (PRA) in the village, preparation of base map incorporating both quantity and quality of water

bodies in the village, assessment of surface and ground water resources, including springs, assessment of demand for various sectoral uses, preparation of Operational Plan for water management and training of water volunteers.

8.2 The existing setup available at the village level of the Meghalaya Institute of Natural Resources (MINR) under the Meghalaya Basin Development Authority (MBDA) will be strengthened to take up this exercise.

9. Water Supply & Sanitation

9.1 Efforts would be made to provide piped water supply in Rural Areas with provision for house connections with level of water supply as per applicable guidelines and availability of resources.

9.2 For Urban Areas, piped water supply will be provided with house connection and per capita supply as per the guidelines laid by CPHEEO, New Delhi from time to time.

9.3 Efforts would be made to provide good and consistent service and delivery system to provide good quality water. Multiple sources for drinking water supply will be encouraged to ensure water security. Recycle and re-use of water after treatment to specific standards would be encouraged to ensure water sustainability.

9.4 Industries would be allowed to withdraw only the required quantity of water with the approval of the Authority and would have an obligation to return used water after treatment to a specified standard back to hydrological system. The Industries need to follow the principle of three R's - reduce, reuse and recycle.

9.5 Water allocation in irrigation system has to be done with due regard to equity and social justice. Disparities in the availability of water between head-reach and tail-end farms and between large and small farms should be obviated by adoption of a rotational water distribution system.

9.6 Hydro power projects should emphasise to develop hydro projects for maximum power generation keeping in view water needs of not only human beings and animals but also of flora and fauna of the downstream of the project site.

9.7 Water loss due to leakages, pilferage etc. would be reduced.

9.8 Rain Water Harvesting with ground water recharge mechanism would be mandatory in all buildings constructed in Urban, Rural and Industrial areas and would be encouraged in existing building structures in all urban,

industrial and rural areas.

- 9.9 Tendency to pollute both ground and surface water would be prevented by enacting necessary legislation or amending existing acts / laws.
- 9.10 Sewerage System with viable technology for the State would be implemented both in Urban and Rural Areas. The system will ensure that Grey water will be separated from the Black water and the same will be treated for reuse.

10. Management of Flood & Drought

- 10.1 A system for flood forecasting and warning would be established. In addition, disaster management plan and operation procedures would be prepared in consonance with the Water Policy and implemented with community and civil society participation. Latest technology interventions and strategies will be adopted to minimize the impact of floods.
- 10.2 Encroachments and diversion of water bodies and water channels, both in rural and urban areas, should not be allowed and, wherever it has taken place, it should be restored to the extent feasible and maintained properly through community participation. The storage capacities of water bodies and water courses may be managed to the extent possible in an integrated manner to control the flooding.
- 10.3 In order to prevent loss of land eroded by the river, which causes permanent loss, revetments, spurs, embankments, etc., should be planned, executed, monitored and maintained on the basis of morphological studies. This will become increasingly more important, since climate change is likely to increase the rainfall intensity, and hence, soil erosion.
- 10.4 Land, soil and water management with scientific inputs from local, research and scientific institutions would be used to evolve different agricultural strategies and improve soil and water productivity to manage droughts. Integrated farming systems and non-agricultural developments may also be considered for livelihood support and poverty alleviation.

11. Water Quality

- 11.1 Sources of water and water bodies should not be allowed to get polluted. A system of periodic inspection would be evolved following specific standards and stringent actions be taken against the persons responsible for pollution.

-
- 11.2 A regulatory mechanism will be established to ensure smooth operation and the “Polluter pays concept”, either monetary or non-monetary, will be adopted.
- 11.3 Urban settlements, encroachments and any developmental activities in the protected upstream areas of reservoirs/water bodies, key aquifer recharge areas, that pose a potential threat of contamination, pollution, reduced recharge and those endangering wild and human life should be strictly regulated.
- 11.4 In urban and industrial areas, installation of sewage/effluent treatment plant would be made mandatory.
- 11.5 Quality conservation and improvements are even more important for ground waters, since cleaning up is very difficult. It needs to be ensured that industrial and local cess pools effluents, residues of fertilizers and chemicals, etc., do not reach the ground water.
- 11.6 Efforts would be taken to prevent entry of fertilizers and pesticides into the water system in the State. Steps would be taken to monitor and regulate dumping of solid waste and discharge of untreated waste water from industry, mining activity or urban waste such as household, market, medical solid waste directly into the water bodies.
- 11.7 Efforts to prevent that the use of river water for domestic activities will be such that there is no pollution of river waters.

12. Water Tariffs

- 12.1 Pricing of water would ensure its efficient use and conservation. Water being a Common pool resource, its equitable access to all and its fair pricing for domestic and other uses such as sanitation, agricultural and industrial would be ensured. This would be arrived at through an independent statutory Water Regulatory Authority, to be set up after wide ranging consultation with all stakeholders.
- 12.2 Water Users Associations (WUAs) in Irrigation projects would be given authority to collect and retain a portion of water charges, manage the quantum of water allotted to them and maintain the distribution system in their jurisdiction. WUAs would be given the freedom to fix rates subject to approval by Water Regulatory Authority.
- 12.3 In order to meet equity, efficiency and economic principles, the water

charges would preferably be determined on volumetric basis. Such charges should be reviewed periodically.

- 12.4 In respect of drinking water both in Rural and Urban Areas which is generated and distributed by Meghalaya Public Health Engineering Department, Meghalaya Public Health Engineering Department would be given responsibility to fix water tariff in consultation with Regulatory Authority and to manage the quantum of water allocated to the consumers and collect the water tax accordingly.
- 12.5 Introduction of a system of differential pricing and Reverse metering system concept to incentivize water harvesting, recharge and judicious consumption.

13. Research, Awareness and Capacity Building

- 13.1 Continuing research and advancement in technology shall be promoted to address issues in the water sector in a scientific manner. Innovations in water resources sector should be encouraged, recognized and awarded.
- 13.2 Awareness generation among general public shall be promoted to enhance their knowledge of judicious use, management and conservation of water in a sustainable manner. Citizens are to be sensitized to enhance civic participation in protection of water sources with the sense of ownership.
- 13.3 The State Government Departments/ Agencies would undertake capacity building of all stakeholders including relevant government departments/ agencies, autonomous district councils, communities, water associations, civil societies and contractors engaged in development or management of water infrastructures to enable them to perform their respective roles and responsibilities in an effective and collaborative manner. A process of certification of the trained cadre at community level would also enable them to have better livelihood opportunities. Efforts would also be made to instill the sense of ownership and accountability in the users.

14. Data Management and Information System

- 14.1 A State Water Resource Data Centre established under National Hydrology Project shall house all water related data, which would be integrated with well defined procedures and formats to ensure online updates and transfer of data, to facilitate development of database for community empowerment, decision making and evidence building in the management of water. The integrated data systems should be, as far as possible, open, dynamic, real time and granular and sharable data will be easily accessible to the community and other stakeholders. This database would become a tool for future planning, development, regulation and governance of water resources in the State and including climate change studies.

Data for community empowerment would be broad based collection but non-repudiable digital assets. Shareable and non classified data can be accessed by the public after consent & privacy of the users.

15. Trans-Boundary Rivers

- 15.1 International aspects of cross-country rivers shall be dealt by the Union Government in consultation with the State. The inter-state water sharing and project implementation along the border areas shall be resolved with due regard to water resources availability and need and to the existing land tenure system in the State.
- 15.2 Monitoring systems to be established / installed at the entry and exit points of all major transboundary rivers to aid in the assessment of water resources in the state.

16. Institutional Arrangements

- 16.1 Meghalaya State Water Resources Council under the Chairmanship of Chief Minister would take care of policy planning and co-ordination of the activities of various Departments/Agencies Government as well as Civil Society Organizations involved with the Water Sector.
- 16.2 A State Water Regulatory Authority would be setup under a suitable state legislation to provide the regulatory framework for the water sector. This regulator would be responsible for regulating the use and discharge of water, fix/review water tariff, resolution of water related conflicts and overseeing that sufficient environmental safety measures are undertaken. The Authority would encourage institutional harmony between the traditional or customary community institutions and State agencies to improve the water governance framework and to prevent or arrive at early resolution to water related disputes in the State.
- 16.3 State Level Committee on Ground Water Resources re- estimation Committee under the Chairmanship of Principal Secretary/ Commissioner & Secretary/ Secretary , Water Resources Department would estimate annual replenishable Ground Water Resources of the State and its utilization.
- 16.4 Meghalaya Water Resources Development Agency shall co-ordinate all departments dealing with water related activities in the State and will be suitably strengthened to improve its implementation capacity
- 16.5 Meghalaya Institute Of Natural Resources under Meghalaya Basin Development Authority shall coordinate with all the Village Water Resources Councils to oversee its activities relating to the water sector,

including the exercise for preparing water security plans and annual water budget plans.

- 16.6 District Water Resource Development Council would be empowered to coordinate all activities in the district involving the water sector and to ensure that projects and programmes are implemented in accordance to their respective guidelines from time to time and to ensure convergence wherever possible.
- 16.7 District Level Committee on Ground Water Resources will oversee to the ground water management and development in the Districts and will ensure sustainable usage of this resource.
- 16.8 Autonomous District Councils would be provided appropriate assistance to improve their efficiency and effectiveness in development/construction or rehabilitation of water infrastructures and for protection and improvement of water catchment areas within their jurisdiction. They would also be made more effective in water management. Autonomous District Councils would have representation in various Committees involving Water Sector.
- 16.9 Block Water Resource Development Council would be created to coordinate all activities in the blocks involving the water sector and to ensure that projects and programmes are implemented in accordance to their respective guidelines from time to time and to ensure convergence wherever possible.
- 16.10 Village Water Resources Councils with adequate women representation would be created to manage their water resources and related infrastructures under the purview of the Regulatory Authority.

17. Implementation Strategy For The State Water Policy

- 17.1 The State would ensure that Government Departments and other institutions at various levels under the Water Sector will be appropriately strengthened and even created, wherever necessary, to enable them to carry out their mandated responsibilities with respect to the implementation of Water Policy. Subsequently, the State Water Act will be evolved. Special emphasis would be given to ensure that institutional framework and institutional mandates are conducive and supportive of inter-institutional, inter-sectoral and multi-stakeholder coordination, collaboration and convergence.
- 17.2 The Meghalaya State Water Resources Council would review the existing acts and regulations related to water sector and align them to effectively

implement this policy and will evolve a State water Act based on the State Water Policy to be approved by the State .The State water Act would evolve as an umbrella statement of general principles governing the exercise of legislative and/or executive powers by the State and the local governing bodies. The Water Act would also recognize water not only as a scarce resource but also as a sustainer of life and ecology. Therefore, water would be considered as a Common Pool Resource to achieve food security, livelihood, and equitable and sustainable development for all.

- 17.3 The Meghalaya Water Resources Development Agency would co- ordinate all line departments with respect to the implementation of the Water Policy.

18. Conclusion

- 18.1 This policy has been framed taking into consideration the needs and aspirations of the people concerned and the complexities involved in solving the various water-related issues. The State fully understands that the objectives of this policy can be achieved with the concerned Departments playing their role as per their mandate along with support from all other stakeholders who would also be required to carry out their respective roles and work in a collaborative manner to meet the objectives of this policy.
- 18.2 This policy will be supported by legal instruments and supplemented with implementation strategies and action plans with specific targets, measurable indicators, timelines and progress against these will be continuously monitored.
- 18.3 The State Water Policy may be reviewed /revised periodically as and when the need arises.