

Proceedings of Workshop on Implementation of Recommendations of Master Plan of river Basins / Sub-basins of Assam held on 19th July 2013

Brahmaputra Board organized a workshop on 'Implementation of Recommendations of Master Plans of river basins / sub-basins of Assam' on 19th July 2013 in the auditorium of NEDFi Convention Centre at Guwahati. The inaugural session of the workshop was graced by Shri Rajib Lochan Pegu, Hon'ble Minister of State (Independent Charge), Water Resources, Welfare of Plain Tribes and Backward Classes, Government of Assam as the Chief Guest. Shri Jitesh Khosla, Additional Chief Secretary, Government of Assam, Shri G. Mohan Kumar, Special Secretary, Ministry of Water Resources, Government of India, Shri Narendra Kumar, Commissioner (B&B), Ministry of Water Resources, Government of India, Shri Ratul Sarma, Secretary, Water Resources Department, Assam were present on the occasion.

The Chairman, Brahmaputra Board delivered the welcome address. He expressed his happiness and satisfaction on holding workshop at Guwahati on implementation of recommendations of Master Plans in respect of Assam. He further felt that concerted efforts are required to be made by Brahmaputra Board and riparian States to implement the recommendations of Master Plans. The Chairman thanked the Special Secretary, Ministry of Water Resources, Government of India for his keen interest in conducting the Workshop. The Chairman profusely thanked Shri Rajib Lochan Pegu, Hon'ble Minister of State (Independent Charge), Water Resources, Welfare of Plain Tribes and Backward Classes, Government of Assam, Shri Jitesh Khosla, Additional Chief Secretary, Assam, Shri Ratul Sarma, Secretary, Water Resources Department, Assam and other officials of Government of Assam for attending the workshop. He also appreciated the assistance of all other participants from Government of Assam, Government of Arunachal Pradesh and other organizations of Government of India. He stated that workshop at Guwahati is the first in the series of workshops planned to be conducted by Brahmaputra Board at various locations in the region. He felt that outcome / recommendations of workshop may go a long way in accelerating pace of implementation of recommendations of Master Plans. He acknowledged and appreciated the efforts put in by Sh Atul Sarma, Executive Engineer, Brahmaputra Board in drafting 'Base Paper' and convening workshop on the subject at Guwahati.

The Special Secretary, Water Resources, Government of India explained the background and objective of the Workshop. He stated that -

- The idea to hold the workshop was mooted last year.
- There are a number of issues involved in the implementation of Master Plans which have to be sorted by deliberations at appropriate level. The North Eastern Region has many problems especially in terms of development of water resources.
- Brahmaputra and Barak valley has overwhelming availability of water resources. But Brahmaputra River is mostly in the news for the floods and erosions caused by it and consequent sufferings caused to the people. Therefore, Assam has to shoulder a heavier responsibility.
- In economic terms, the Brahmaputra valley can be termed as the powerhouse of India. More than 50,000 MW of hydro-power potential has been identified in the basin. Hydro-electricity is a green energy. Hydropower projects are eco-friendly and contribute insignificantly in emission of greenhouse gases. Nowadays global warming is perceived as great threat to life on earth. Hydropower projects will bring development without any boost to global warming.
- There has been apprehension in the minds of people about the safety of dam of Subansiri Lower Hydro-electric Project and other dams. Government of India is concerned and will certainly ensure safety of people of the region.
- Over the years, the Brahmaputra Board has prepared 57 Master Plans of which 46 sub-basins drain into Brahmaputra River. 49 Master Plans out of total 57 formulated by the Board have been approved by Government of India. The Master Plans formulated by the Board have mostly dealt with the flood and erosion problems. Other issues and developmental activities have also adequately been dealt in the Master Plans.
- Brahmaputra valley is important for development of the entire region. It is, thus imperative to integrate its problems of flood and erosion with hydropower development and other activities taking basin as unit for planning.
- Although the Master Plans were formulated and circulated way back in eighties and nineties, still much is needed to be done for implementation of recommendations. There was no significant action to implement recommendations of the Master Plans. There has to be improved coordinated efforts between Brahmaputra Board and the State

Governments concerned for implementation of the recommendations in their right perspective.

- The Master Plans are to be owned by the stake holders. At present, the ownership lies with Brahmaputra Board. Unfortunately, there has not been any effort to market the products of Brahmaputra Board, namely, the Master Plans. The Workshop is a forum in which the process of transfer of ownership to the States may be initiated.
- Efforts are on to convert the Board into a basin level organization. The proposal is in an advanced stage and would be circulated very soon. The proposed organization will have participation at the political level to make it more effective.
- The benefit of flood and erosion control should also flow from any multipurpose hydro-electricity project in the North Eastern Region. At the same time the projects should have other beneficial usages such as irrigation, pisciculture and navigation. Development of catchment area is very important especially where shifting cultivation is practiced.

Additional Chief Secretary, Government of Assam, in his speech on 'Role of States in implementation of Recommendations of Master Plan' stated that -

- Water resources management is a very complex subject. Its management must have posed great deal of problems to the founding fathers of our Constitution.
- The Constitution has entrusted the management of water resources at the local level to the State. Inter-State aspects of its management that require coordination and study on various aspects have been entrusted to the Central Government.
- There are many issues in sharing and managing water resources – political and economical, issues relating to conservation, optimization, sharing among riparian states and others. He referred to recommendations of Punchhi Commission Report on State-Centre relations. The Commission recommends sharing and use of water resources on the basis of equitable use and not on the basis of territorial rights. Water is a common resource of the country. When the catchment area of a river falls in different States, it is very important to have coordination between the basin States in management and handling of water resources of the region.

- It is important that all the riparian States share and own the Master Plans. Unless they share the views in the Master Plan, the Master Plans will not work.
- The Master Plans were formulated sometime ago. The configurations of the rivers have changed since. It is a dynamic situation. Therefore we have to re-evaluate the Master Plans. It is not a fixed framework. Better system and technology should be used to update and enrich the Master Plans. The updated Master plans should have multi-disciplinary approach incorporating catchment area, rainfall pattern, climatic change, its downstream and upstream impact, forestry, soil conservation, watershed management, etc. We have to take this as an opportunity to bring experts from both within the country and outside, from IITs and foreign universities, to help us in the water management. Computer simulation, river morphology, etc are very important in this regard.

Shri Rajib Lochan Pegu, Hon'ble Minister of State (Independent Charge), Water Resources, Welfare of Plain Tribes and Backward Classes, Government of Assam and Chief Guest of the inaugural session, in his address said that the workshop organized by Brahmaputra Board is the proper forum to assess the achievements on implementation of Master plans. He expressed that the Interactive session with all concerned Departments will be helpful in this regard. He further stated that -

- Change in water use pattern, change in morphology, climate change, irrigation requirement and rainfall have to be taken into consideration while revisiting the Master Plans.
- He requested Special Secretary, MoWR to arrange for proper study before permitting construction of dams in upstream of Brahmaputra River. Protection of Majuli Island from flood and erosion, possibility of linking rivers for flood moderation and development of river basin in an integrated manner instead of working in piecemeal basis need to be considered by Brahmaputra Board.
- He requested Special Secretary to extend help to convert the Water Research and Management Institute of Government of Assam into a full-fledged Institute.

The Commissioner (B&B), Ministry of Water Resources offered the vote of thanks. He expressed that the workshop is the first of its kind in a series of workshops

planned to be conducted in days to come on implementation of recommendations of the Master Plans formulated by Brahmaputra Board. He expressed that the deliberations in the workshop would help in finding ways to implement the recommendations of Master Plans. He thanked the organizer of the workshop – Brahmaputra Board, all participants and dignitaries for making the workshop a grand success.

Session – I Presentation on Recommendations of Master Plan by Sh G.P. Singh, Superintending Engineer and Sh Atul Sarma, Executive Engineer, Brahmaputra Board

A 'Base Paper' discussing therein status of formulation of Master Plans, their recommendations, status on implementation of recommendations - both by Brahmaputra Board and State of Assam and need of accelerating pace of implementation of recommendations had been prepared by Brahmaputra Board and circulated among all riparian states and line departments of Government of Assam. The presentation was primarily based on the 'Base Paper' with objective to plan and undertake implementation of recommendations of Master Plans, concerning State of Assam, in a concerted manner by Brahmaputra Board and State of Assam to implement ameliorative measures to manage floods and erosion and develop water resources of the state for economic prosperity.

Response from Participants:

Special Secretary, MoWR

- Special Secretary termed the presentation good, crisp and lucid.
- He stated that a Master plan should be a comprehensive basin planning document and clear in its perspective. The major problems in Brahmaputra valley are floods, erosion, drainage congestion with fallout of severe damage and destruction. He opined that these problems cannot be mitigated or removed without the basin States coming together.
- He referred to a recent meeting convened by the Central Government in which suggestion was made that any hydro-electric project proposed in the upper reaches should have sufficient storage capacity for flood mitigation downstream. He observed that the private companies who had come forward right for development of most of these projects in Brahmaputra Basin opted for the run-off-the-river schemes in preference to storage

projects as these have lesser investment and lower gestation period. It was informed that the Planning Commission has also stipulated execution of hydro-electric projects as multi-purpose projects. The 'National Water Policy 2012' recommends that flood cushion should be invariably provided in all hydro electric projects constructed in regions where flood is a major issue. Therefore, flood control component should be there in all medium/large hydro-electric projects which are coming up in the upstream of tributaries of Brahmaputra River.

- He suggested that depending on extent of floodpeaks in Brahmaputra Basin, storage in each of the sub-basin is needed to be determined in the sub-basin Master plan.
- He also emphasized adoption non-structural measures such as Flood Plain Zoning and effective flood forecasting and warning system to be integrated with flood management. He cited the example of recent incident in Uttarakhand. One among the main reasons for the severe destruction in Uttarakhand is acknowledged as encroachment of river course. He felt that River corridors have to be protected. The inter-state rivers have to be protected under Environment Protection Act.
- He stressed on the need of inclusion of following aspects in the Master Plans prepared by Brahmaputra Board-
 - Extent of flooding and accordingly assessment of flood cushion in the river basin,
 - Estimation of ground water potential and integration of ground water and surface water for assessment of availability of water in the basin,
 - Emphasis on conjunctive use of ground water with surface water,
 - Recharging of ground water by flood waters may contribute to reduction in severity of floods during monsoon and keeps ground water irrigation needs to be developed in the Brahmaputra valley to facilitate multi cropping.
 - Emphasis on land use, catchment area treatment with a multidisciplinary approach

He felt that backward linkage of the Master Plan includes hydrological information, trend of development and such other information and past recommendations. They form the basis for development in future. The forward linkage includes ways and means of implementation of these recommendations. Identification of resources to implement these recommendations is also essential in the Master Plans.

He apprised that there are a number of existing popular programmes and generic schemes for development under Government of India. The implementation of the Master Plans should be linked to the extent possible with these programmes for funding.

Implementation of the recommendations should be planned in such a way that there is a win-win situation for all stake holders. Integrated planning should be ensured through involvement at the highest level of Government. Brahmaputra Board should enter into dialogue with all concerned States with this aim.

Secretary, WRD, Government of Assam

He opined that updating of Master Plans may be attempted in consideration of the following-

- Change in precipitation pattern
- Change in land use pattern
- Drainage congestion in new areas due to various developmental works such as roads, railways, bridges etc since preparation of the Master Plans
- Deforestation in earlier forest areas
- Depletion of water table due to over exploitation
- Fallout of global warming and climate change and ameliorative measures
- Incorporation of morphological changes

He informed that Assam Disaster Management Authority has recently taken up flood plain zoning with the help of NRSA. He commented that Manpower in Brahmaputra Board should be increased commensurate with its workload. He also emphasized for delegation of more financial power to Board and its officials to tackle works of emergency nature. He spoke about the establishment of Water Research and Management Institute by Government of Assam for capacity building under WRD, Assam. The Secretary also stated that it is more often difficult to justify integration of schemes because of unfavorable Benefit-Cost ratio.

Additional PCCF, Government of Assam commented that-

- The Master Plans of Board are based on 30 years old data. These need updating.

- The activities of Brahmaputra Board are not reaching to the people of the region. There should be adequate publicity for different works being done by the Board.
- Cropping pattern of some other area may not suit to climate of Assam.
- Storage required in a sub-basin needs to be quantified in the Master Plan.

Additional Chief Secretary, Government of Assam

He informed that Water Research and Management Institute of Government of Assam is fully functional and is currently under modernization. He offered that the facilities available at the institute could be utilized by all State Governments and Central Government Organizations including Brahmaputra Board.

Session II – Presentation on implementation of Recommendations of Master Plan by WRD, Assam

A Power Point presentation was made on works executed up to March 2013 by Water Resources Department, Government of Assam as per recommendations of the Master Plans. The works mainly consisted of raising and strengthening of embankments, anti-erosion works, construction of sluices, drainage channels / drainage development schemes and other such activities. The need for updating the master plans was stressed upon in the presentation.

Deputy Secretary, Irrigation and Waterways Department, Government of West Bengal emphasized on a holistic approach to basin planning. He suggested that Mathematical model of a river system would be beneficial in this regard. He further requested for inclusion of Secretary, West Bengal or Chief Engineer, Water Resources Department, Government of West Bengal as full-fledged Board Member.

Session – III Presentation by IWAI

The efforts made / being made by Inland Waterways Authority of India (IWAI) to improve the water transport between Sadiya and Bangladesh border in river Brahmaputra were presented. The queries of Special Secretary about the works of IWAI and its relevance with Master Plan proposal were replied.

Shri A.K. Purkayastha, Retired Director and presently Advisor, Agriculture Department, Government of Arunachal Pradesh informed about agricultural practices being followed by people in the upper reaches of river Brahmaputra

in Arunachal Pradesh. He stated that the jhum cultivation widely being done in Arunachal Pradesh is a major cause of erosion of soil and siltation of the river in plains apart from causing pollution. He pointed that 39% of the cultivated area or about 84000 ha of land in Arunachal Pradesh is under shifting cultivation. Therefore, change in the cropping pattern is a compulsion and not an option to Arunachal Pradesh. Deforestation is a major cause of worry though forest cover is still quite high and stands at about 81% of total area.

The endeavor of Arunachal Pradesh is to reduce the area under jhum cultivation. It was estimated that it may be possible to convert 20% of the Jhum area into terrace cultivation. The balance area is proposed to be converted to horticulture. He suggested for involving ICAR and Agricultural University for formulating proposals for suitable cropping pattern based on agro-climatic conditions.

Shri Diganta Gogoi, Deputy Conservator of Forest, Arunachal Pradesh stressed on the need for preventive measures against soil erosion in Arunachal Pradesh. It was informed that about 10 lakh ha area is proposed for soil treatment through compulsory catchment area treatment proposal under large numbers of hydel projects planned in Arunachal Pradesh. He stated that catchment area treatment required should be prioritized in the Master plans of Brahmaputra Board.

Shri Jitesh Khosla, Additional Chief Secretary, Assam stated that erosion is one of the major problems in Assam which is primarily caused due to enormous volume of silt deposited into Brahmaputra through soil erosion from the entire hill areas of North-East region. Major contribution is stated to be from Arunachal Pradesh. He requested officers from Arunachal Pradesh to convey concern of Assam in this regard to the Govt. of Arunachal Pradesh.

Shri Purkayastha, Advisor, Agriculture Department, Government of Arunachal Pradesh stated that during the 11th Plan, Watershed Management Plan was executed in 43500 ha of rain fed area and 13500 ha of Jhum area to reduce soil erosion. As the programme is implemented by Rural Works Department during XII plan, he is not in a position to provide figures. He assured that the query of Additional Chief Secretary, Assam would be communicated to concerned Department of Arunachal Pradesh for further action and appraisal.

The Chief Engineer, NHPC stated that -

- Construction of reservoir is one of the best ways of controlling floods. However, getting clearance for a high dam with good storage capacity is becoming increasingly difficult due to rehabilitation and environmental issues.
- He stated that most non-polluting way of generating power is hydroelectricity. He revealed that even without contribution from government for flood moderation, 15 m flood cushion has been kept in the Lower Subansiri Project to meet the flood control requirement.
- He stated that opponents of dam have a utopian idea that the tribal people will live a life as they have been living for ever and this way of life has to be preserved. He stated that every community has a right to materially develop and prosper and therefore this idea is flawed.
- He appealed to the participants to educate dam opponents as benefits of dam projects in terms of management of all ills – flood, erosion, drainage congestion, braiding of rivers, scouring, siltation - and development of hydroelectric, irrigation, navigation in the best possible ways considering all aspects. He also suggested for dredging the river Brahmaputra to maintain a proper waterway.

Special Secretary, MoWR stated that integration of production of hydro-electricity in hilly catchments with downstream flood benefits should be the theme of Master Plans. Stabilization of slopes in hills should be a major recommendation. There is a need to evolve a mechanism for closer dialogue between upstream and downstream states. This will ensure benefit for both. Master Plans should address rehabilitation aspect due to reservoir projects and there should be specific recommendation on the matter.

Secretary, WRD, Assam stated that none of the technical personnel from Assam is opposing the construction of Subansiri Project. However, minimum flow of the river has to be maintained on ecological considerations. There is confusion about the NHPC Project regarding foundation, minimum flow and downstream adverse effect.

Additional Chief Secretary, Government of Assam stated that the hydro-electric projects coming up in the hilly region should address the concern of both upstream and downstream regions. He cited example of Ranganadi Project where downstream impact was not considered. The project has caused havoc

in the downstream reach after its implementation. As a Nodal Agency, Brahmaputra Board should recommend on these matters.

After detailed discussions and deliberations, conclusions in the form of recommendations were drawn as below-

- (1) Permanent mechanism in the form of high level multidisciplinary, interdepartmental committees at state level may be established for implementation of recommendations of the approved Master Plans prepared by Brahmaputra Board. The committee should be headed by Chief Secretary or Additional Chief Secretary of the State with Chairman, Brahmaputra Board as the convener. Members from co-basin states to be made special invitees in such committees. These committees will also address ways and means of implementation of the works including identification of source of fund.
- (2) There is unanimity among all participants on the need for updating the Master Plans prepared by Brahmaputra Board. However, updating has to be done in phases. It was generally suggested that the updated and revised Master Plans, beside updating of data, will address -
 - (a) Comprehensive basin planning and management through integration of conventional flood management work with catchment area treatment, afforestation, flood cushion through creation of reservoirs etc,
 - (b) The flood cushion required from each sub-basin as per its contribution to the flood of Brahmaputra along with location of storage projects is to be identified in the Master Plans.
 - (c) Integration of production of hydro electricity with provision of flood cushion thro' adequate storage.
 - (d) Integration of ground water with surface water is needed to determine water availability in the sub-basin. Ground water development may be given sufficient thrust.
 - (e) Emphasis and weightage on Environmental and ecological aspects including water quality,

- (f) Incorporation of rehabilitation and compensation aspects due to dams / reservoirs for both upstream and downstream affected people commensurate with benefits of the projects with specific recommendation in this regard,
- (g) Recommending coping measures for increased resilience for flood affected people through specific cropping pattern, adoption and improvisation of local technology such as stilt housing (changghar) and suitable economic activities.

(3) There should be more co-operation and dialogue between the stakeholder States and Brahmaputra Board for implementation of the Master Plans approved by Government of India. The stake holder states should actively participate in preparation and updating of any Master Plans and state their priority for inclusion.

(4) It was recommended that stakeholder consultation should precede modification / revision of Master Plans. Accordingly, it was recommended that a committee at a lower level to be constituted for each state for study of the Master Plans and preparation of modified plan. The committee will also prioritize the basins for updating of Master Plans. Such committees will have members from various stakeholder departments of the state, concerned departments of Central Government and will be headed by Brahmaputra Board. The committee will help Brahmaputra Board in preparation of the Master Plans by using data available with the State and Central Government agencies, determine priorities of State Governments and approve draft Master Plans.