

## Regional Water Conservation Essential for Sustainable Productivity of Ecosystem

Dr. Md. Sohrab Ali & Md. Hasibur Rahaman\*

### Introduction

Water the very basic element of an ecosystem that can transform into solid-liquid-gaseous forms. Owing to this transformation water accumulates (in solid form) and moves throughout the global ecosystem through the hydrologic cycle. This is how the entire water system of the globe is connected. If this cycle is interrupted by human activities like construction of dam, barrage, upstream withdrawal or excess withdrawal of rivers water, dumping pollutants into water bodies etc. then there will be impacts on ecosystem at global as well as local level. For example, excess withdrawal or injudicious use of water at the upstream without considering availability of water in the water course will have negative impacts on flora and fauna of downstream ecosystems.

In the Indian sub-continent, two major wind direction- south to north in summer and north to south in winter season. These wind directions greatly influence water movement, flow of genes and flow of energy into ecosystems. So, any disruption of flows mentioned above shall affect interrelationships among elements of ecosystems as well as between ecosystems and ultimately will affect lives in the ecosystems i.e. biodiversity.

It is well recognized that biodiversity rich ecosystem is superior in terms of sustainability and productivity to biodiversity poor ecosystem. Richness of biodiversity greatly depends on management of water resources since water is the single most important determining factor for biodiversity in an ecosystem. Integrated Watershed Resource Management (IWRM) as the modern concept of water conservation that encompasses basin wise management of water resources.

### Supporting Policy and Convention of regional water conservation

The National Water Policy of Bangladesh highlighted work with co-riparian countries for exchange of information, joint work and assessment, share water resources of the international rivers and regional cooperation for education, training and research in water management.

Convention on the Law of the Non-navigational Uses of International Watercourses, 1997 supports the principle of integrated watershed management. Article 5, 7 and 12 state equitable and reasonable utilization and participation, obligation not to cause significant harm and notification concerning planned measures with possible adverse effects with co-riparian countries<sup>1</sup>.

The Rio Declaration on Environment and Development which states in its Principle 2, that States ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction<sup>2</sup>.

United Nations Convention to Combat Desertification in its article 3(c) and article 11 states the sustainable management of transboundary natural resources with the cooperation of all countries<sup>2</sup>.

UNCCD in its issue paper Human Rights and Desertification operational objective recommend protecting water right at national, regional and international levels by strengthening judiciaries<sup>3</sup>.

The 1996 Treaty on Sharing of Ganges Water at Farakka is narrow in scope and it has no provision for the management of water resources of the Ganges Basin. Regional cooperation is needed for promotion of sustainable water infrastructure<sup>4</sup>.

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\*Deputy Director, Department of Environment & Department of Environmental Science and Resource Management, Mawlana Bhashani Science and Technology University, Dhanmondi, Dhaka.



### Scope of Regional/Sub-regional water conservation

Bangladesh shares 57 transboundary rivers of those 54 incoming from India, 03 from Myanmar. Constructions of dams and river training in the border region have caused drastic reduction in flow of water during the dry season which create harmful effect on ecosystem in lower riparian. Implementation of the principles of Integrated Watershed Resource Management (IWRM), which is very much successful for the sustainable development of the Mecong river basin.

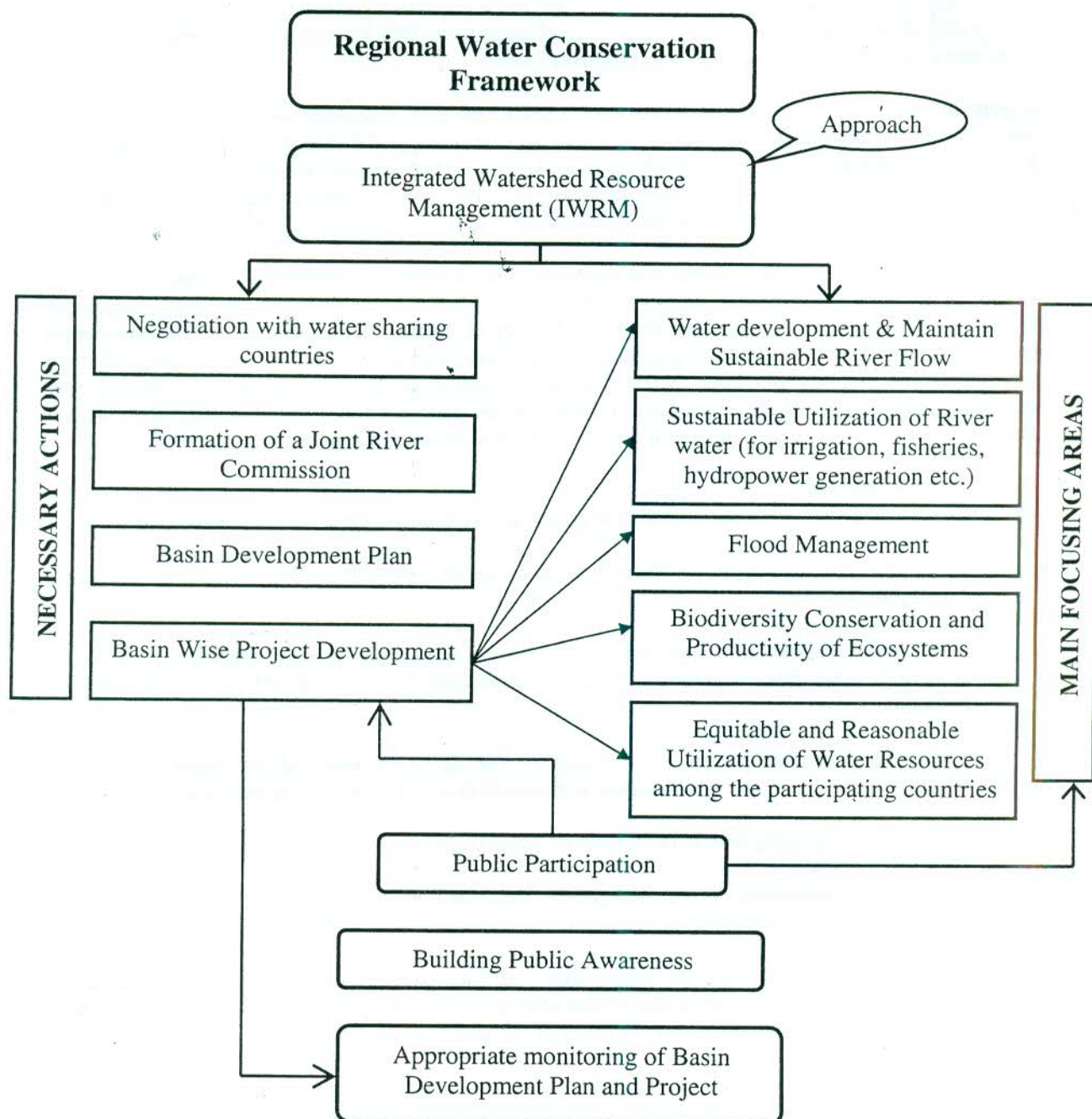
As population continues to increase in the subcontinent, there is a growing demand for safe drinking water, reliable sources of water to meet the needs of the expanding population, industrialization and other development activities. The Ganges-Brahmaputra-Meghna (GBM) basins, covering an area of around 1.75 million sq. km in five countries, have immense potential in developing its water resources in areas like flood management, flow augmentation, hydropower generation, and navigation<sup>5</sup>.

Management and development of the water resources of the region is completely dependent on the availability of water from the transboundary rivers and rainfall distribution round-the-year. Bangladesh experiences water shortage in the dry season and water abundance in the wet season which disrupts significantly the agro-environmental practices and socio-economic activities of the country. Such a variability in availability of water especially water scarcity in the dry season will affect proper functioning of the entire basin ecosystem. To address the problems, cooperation among the co-basin countries is needed for conservation and judicious utilization of water resources.

### Conservation Strategies

The following strategies may be developed to support the vision for regional water conservation.

- Adopt the principles of Integrated Watershed Resource Management (IWRM) to ensure sustainable ecosystem productivity.
- Cooperation and coordination approach is essential to achieve sustainable development of water resources since water has integration of technical, economical, social, political, and institutional and policy factors.
- Need of political goodwill to ensure an equitable sharing of the water of the international rivers among the co-riparian countries to maintain ecological balance and environmental quality.
- Involvement of community people in all stage of water conservation program.
- Increase public awareness about integrated watershed management and encourage public participation.
- Regional cooperation for share of information and data, hydropower, flow augmentation, flood management and flood forecasting. Basin wise approach is needed for development and management of water resources in the GBM basins for fostering effective regional cooperation.
- Facilitate implementation of co-riparian state's interests and obligations, an apex body comprising representatives of all the co-riparian states needs to be set up to evolve a plan for development, conservation, sharing and utilization of the international water according to the needs of the member states and the principle's of international law.



#### References

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