

## Identification of Priority Issues on Water, Agriculture and Climate Change in India under Asia Pacific Adaptation Network (APAN) Initiative

**Background of GWP-SAS and APAN:** The Asia Pacific Adaptation Network (APAN) is the first regional network under Global Adaptation Network (GAN) formed in response to the growing knowledge and capacity building needs in climate change adaptation. The activities of APAN focus on the most vulnerable ecosystems and sectors such as water, agriculture and mountains. GWP operates in South Asia as a Regional Water Partnership, through Country Water Partnerships (CWP) in Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. The Regional Hub (RH) of APAN functions as a knowledge center and provides technical assistance for adaptation. The purpose of APAN is that the knowledge gained while implementing the different programs requires effective dissemination for influencing the national policies and strategies. GWP-SAS is implementing the sub regional activities of APAN related to water, agriculture and climate change in all the six Country Water Partnerships of the region by involving multi-stakeholders through consultations. Executive Secretary, India Water Partnership (GWP-India) is thematic node contact person from India.

**Context:** India's population in 2011 was 1220 million. The population is still growing, and may stabilize at 1.6 billion by around 2050. Food security, livelihood and housing for such a massive population, is a challenge which the country has to meet at standards which are much higher than in the past. Urban population of India at present is about 31%. The urban population of the world as a whole has already crossed 50%. In the coming decades, in the wake of fast economic growth, urbanization in India will progress at a much faster rate to catch up at least a 50% mark not in a distant future. Fast growth phase of urbanization generate pressure of various types including those on



land, housing, water supply and industrial activities. Growing urbanization has great impact on agriculture. As



the economy gets stronger, pattern of demand changes – more directly the demand pattern for food will change requiring changes in agriculture systems, cropping patterns, etc. The natural resource base, including land and water, that support and sustain the livelihoods of masses is degrading at accelerated rates. The situation is likely to worsen in the water scarce regions in terms of severe drought and floods. Such conditions are likely to disrupt the balance in the pattern of water supply and demand for water

across agriculture, domestic and industry sectors. This will lead to reduction in the choice of crops and cropping system, posing threats to food security and increasing frequency of water induced disasters. Climate change has a profound effect on irrigated agriculture due to floods, droughts and rise in temperature. Therefore climate change needs to be updated to work out adaptation and mitigation strategies. The impact of climate change and adaptation strategies has to be considered in the backdrop of certain other concerns and challenges faced by India.

**The Consultation:** With the above context, India Water Partnership (IWP) organized a Consultation on “**Water, Agriculture and Climate Change**” on 9<sup>th</sup> February, 2012 at New Delhi under APAN Phase-I assignment. The main objective of the consultation was to identify and prioritize the major issues and challenges regarding water, agriculture and climate change at sub-regional and national level. The consultation was attended by senior officials from National Water Development Agency (Ministry of Water Resources), Planning Commission, Indian Council of Agricultural Research (Ministry of Agriculture), National Rainfed Area Authority, National Institute of Disaster Management (Ministry of Home Affairs), Government of India, Tata Energy Research Institute (TERI), Sharda University, Indian Institute of Public Administration, experts on water, agriculture & climate change, research institutions & academic institutions and partner organizations of India Water Partnership. The priority areas identified in context of India are as follows:

**Rain harvesting is crucial for water and food security due to short time span of annual rainfall:** India gets rainfall (on average) on less than forty days a year. Climate change is likely to result in high and low intensity rainfall. This may happen even without changing the number of days of rainfall availability. In India, much attention is paid to the use of river waters and it has its own merit. However, if rain water is treated as a natural resource and properly harvested, it can make significant contribution to food and drinking water security. Since, at present, less than 30 percent of rain is being harvested, it is imperative that rain harvesting is given a high priority.

**Water Storage and Recharging of Underground Aquifers:** While precise impact of climate change in terms of variability in rainfall and temperature, droughts and floods etc. are not predictable for different parts of the country, it firmly indicate that these patterns in terms of these variables will change and there will be large variability in rainfall. This will make things difficult. Therefore much larger concentration of water storages will be needed. Underground water aquifers provide the best possible storages, available almost everywhere. Thus, massive plans for recharging underground aquifers in variety of ways, including through water harvesting systems, and recharging using the flood waters are required to be prepared and implemented.

**Transferring water from Surplus basins to deficit basins:** Most river basins in India do not have surplus water. Brahmaputra- Ganga river basin is the only basin left with surplus water. It needs to be linked with other water deficit basins to meet the future challenge of growing demand for water on a big scale. The GOI may like to consider and expedite the interlinking of rivers to achieve the objective of making water available in deficit areas. However, while implementing such a scheme, it is imperative to take a holistic view of flow of water in the Ganges with precision of technical details of minimum water required at different locations over time for the very survival of the river.

**River Basin Planning and Holistic Water Management:** Climate proofing cannot be confined in a river reach within one state boundary rather it can be achieved in the whole basin which could be located in several states. River Basin planning and preparation of Master Plan studies on holistic approach is essential both for flood management and optimal water resources utilization. Pollution abatement of human activities should be part of the Master Plan studies.

**Educating farmers about appropriate use of inputs and farm practices to meet the challenge:** An important issue is how to sensitize farmers about climate change, its impacts and micro-level steps that farmers should take in their day-to-day work. For this purpose, the available knowledge should be broken down into its simplest component, written in simple language understandable to farmers/or broadcast in simple language as to reach large numbers of farmers. Early warning systems should be installed at village/block level for weather forecasting (rainfall/temperature/ drought) so that the farmers can take decision in time for sowing of crops or going for crop diversification.

**Inter-ministerial/inter-departmental coordination:** Water related issues cut across various ministries and departments without an effective coordination and creation of synergy. As a result, the implementation of various programs is inefficient and causes undue delays. Creation of synergy would also help gender mainstreaming in different sector programs. Studies of impacts vulnerability and adaption being conducted focus on some sectors. The essential linkage of impacts on one sector with changes in other sectors needs to be taken up. Users (or Users Associations) need to be empowered to take up the issues to impress upon the concerned authorities to expedite coordination and bring transparency in decision making and implementation.

**Creation and implementation of appropriate incentives for conservation and efficient use of water is necessary and needs to be supplemented by suitable regulatory measures:** Demand side management of water use as well as conservation is extremely weak in India. A user has hardly any incentive to use water efficiently. Over-exploitation of ground water in the absence of appropriate pricing policy for its optimal use is absent. In fact, on the other extreme, the price structure of ground water use for irrigation is *ad-hoc*, irrational and perverse. In spite of a model bill for ground water use suggested by the Government of India, no meaningful progress has been made at the State (sub national) level to enact proper laws for use of ground water.

Outcome of the consultation was sent to the Regional Office, GWP-South Asia for incorporation in the Technical Report on “**Climate Change Adaptation in Water and Agriculture Sector of South Asia**” for submission to APAN based on the inputs received from all Country Water Partnerships.

**For further information, please contact :**

*Executive Secretary, India Water Partnership (IWP), Secretariat- WAPCOS Ltd.,76-C, Sector-18, Institutional Area;  
Gurgaon - 122015 (Haryana), Tel. : (+91-124) 2348022 (D); (+91-124) 2399421, Extn : 1404  
Email: [iwpneer@gmail.com](mailto:iwpneer@gmail.com) Web: [www.cwp-india.org](http://www.cwp-india.org)*

Registered under Societies Registration Act 2012, India Water Partnership (IWP) is a non-profit organization with a goal of promoting Integrated Water Resources Management (IWRM). It is also accredited by the Global Water Partnership (GWP) headquartered at Stockholm, Sweden as GWP Country Water Partnership known as GWP-India. The mission of IWP is to support action of sustainable and integrated development and management of water resources at national, regional river basin/sub-basin and local levels in India through promotion of Integrated Water Resource Management.

WAPCOS Ltd., the Secretariat of IWP is a leading Public Sector Undertaking of Ministry of Water Resources, Government of India. The WAPCOS Ltd. with in-built capability, have multi-disciplinary project teams comprising of its own core group of professionals and specialists from various organizations of Govt. of India, provides consultancy services in all facets of **Water Resources, Power and Infrastructure sectors** in India and Abroad. With recent amendment in its Articles of Association, WAPCOS Ltd., have geared itself to provide **Concept to Commissioning** services for developmental projects across the globe. WAPCOS Ltd. is a Mini Ratna and also member of IWP and GWP.

