**#0007 | January 2020**

# C-PACT WATER BULLETIN

CPACT & WSP (Water Science Program) presents a monthly news bulletin of latest news from India and abroad on debates, concerns, and events related to water.

## Weaving the groundwater and surface water integration into a policy: The Karnataka State Water Policy for the 21st Century

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The drafting of the Karnataka State Water Policy for the 21st Century (2018) was perhaps the first effort of its kind wherein multiple discussions on key aspects of the water crises in the state, water management challenges and the possible solutions to the crises were held. The drafting of the water policy was also quite participatory with many experts contributing different sections of the draft. In many ways, the policy has evolved through a participatory process that led to a policy that not only states the crises around water in the State of Karnataka but also goes on to develop an approach to water resources management in the state, recommending key strategies that would be relevant to the conditions and situations prevailing in different geographies of one of the largest states in India today.

The policy is divided into ten chapters. The first chapter provides the overview of the State's water crisis leading to the second which states the foundation, goals and operations principles on which the approaches and strategies of water management in Karnataka should be based. Chapters 3, 4 and 5 describe the context of water in various sectors in the form of agricultural water use, rural domestic water needs, urban and industrial water needs and also highlights the need for specific strategies on water management that will be potentially relevant to the 21st century. Chapter 6 makes a special reference to the fact that the water crisis is not just about quantities and depletion but also about deterioration in water quality leading to contamination; depletion and contamination of water also lead to serious impacts on ecosystem health. Understanding the problem and developing strategies for improving water quality and ecosystem health form the core aspects of this chapter. Chapters 7 and 8 are on water governance, which must include reforms in operational aspects in water management in the state through a shift in how water-related organisations must operate on one hand and how legal aspects of water management must be improved to protect, manage and conserve water resources in the State. Chapter 9 is on data and knowledge generation while chapter 10 provides steps on the way forward in effective implementation of the new policy.

Water is unitary in nature and flows seamlessly from one sphere of the environment into another and especially from the surface of the earth into the sub-surface and then back to the surface. Integrating the surface water and groundwater aspects into the Karnataka water policy formed one of the highlights of the policy. This was done by first understanding the status of the water sector with regard to groundwater and its integration with surface water. Certain normative principles were used to develop such an understanding and included concepts such as water security for the entire population, integrated approach to managing water resources, improving productivity (especially in irrigation), improving health of watersheds and water bodies and improving water governance.

One of the major highlights of the water policy is the suggestion to understand how seven river basins across ten agroclimatic zones – that show variable rainfall patterns - in the State of Karnataka give rise to a typology of nearly 30000 micro-watersheds and nine principal aquifer systems. Clearly, Karnataka is a state that has enormous

diversity in its hydrology and hydrogeology, with the importance of locally existing natural sources of water such as springs in the head reaches of many of its rivers. As in many parts of India, groundwater depletion, groundwater contamination and depletion in river flows along with the deterioration in natural water bodies such as lakes and ponds constitute the different components of the crisis. These have led to serious cases of water shortages, vulnerabilities and distress.

While identifying the current gaps in the policy and practice responses to various problems and the limitations in certain established approaches to water management in the state, key policy level shifts are suggested, such as replacing dominantly supply-side approaches with integrated supply and demand management ones. However, the main feature of the policy emerges in the form of how strategic points of action have been woven into the document to compliment policy reform. In conclusion, a few of these are listed below:

- Science and data are useful instruments in overcoming uncertainty. Collaboration between scientists and policy makers will help bring in accuracy in estimation and prediction. Accuracy and prediction are especially important because the water environment in the State of Karnataka is not only variable but is rapidly changing.
- Knowledge and skill development on aquifers and groundwater management (PGWM) and irrigation management under PIM must be promoted in such a way that last-mile decisions and actions (by communities) are in line with the principle of Aquifers as Common Pool Resources. Building a cadre of professionals and strengthening capacities of existing cadres will need to be undertaken at various levels to achieve the fruits of PGWM and PIM.
- Data on various aspects of water can be used in catalysing decisions and actions, especially around community – level water security planning.
- Many community-led water management initiatives will require partnerships and collaboration between multiple actors. Facilitation of such partnerships and collaboration must be encouraged through policy and built into the design of various programmes, keeping in mind also that surface water and groundwater will need to be considered together even in local level interventions.
- Experiences from across the country on PIM and PGWM would be useful to draw upon in designing a variety of initiatives in improving efficiency of irrigation systems in Karnataka, while also bringing in a sense of equity, fairness and justice to the water management paradigm of the State.
- Fostering groundwater management in urban areas is important for the State's Water Security. Integrating citizen efforts with government policies and programmes could be the cornerstone for such efforts that could also include systematic groundwater recharge, conservation of wetlands and lakes (seen through the groundwater lens) and demand-management through improved water usage efficiency, equity and social norms.
- Resources for studies and programmes on the revival of springs through restoration of springsheds must be undertaken on a large scale in all the districts that have hill ranges and that play host to spring-water systems. An inventory of springs in Karnataka could be a good way to begin the process.
- State Government Regulation, like the Karnataka Groundwater Act can also be reformed in line with the new policy. It is encouraging to note that the State has taken up a review of the Act in light of provisions made in the Draft Groundwater Model Bill (2016) and is already considering amendments to some sections of the Act while also making addition to the rules. In particular, the Karnataka Groundwater Act must make reference to the principles as articulated in the Draft Model Groundwater Bill, particularly in the context of a strong statement that groundwater is a common pool resource. Moreover, like in the draft model bill, it may be interesting to link water budget to the regulation and nature of management, while also alluding to other policies, programmes and legislation that have a direct bearing on the management and governance of groundwater resources.
- The management of waste water through systematic recycling, reuse and recharge must be considered, particularly in Urban Areas of the state. There is already a lot of traction in the reuse of urban waste water, whether for irrigation or as recharge. Developing tools for the various dimension of waste water RRR is important. Treating waste water as a resource could be a starting point towards bringing about reforms in Waste Water Use. Entitlement, allocation, ownership of waste water generated in urban sources must be clearly specified in the Waste Water Policy.

## Latest News

### IIT Kharagpur study reveals how drying of Saraswati-like river caused decline of Harappan city Dholavira

A recent study by IIT Kharagpur has for the first time connected the decline of Harappan city Dholavira to a disappearance of a Saraswati-like river that once flowed through the Rann of Kutch.
Read more:

### Demarcation of Saraswati on to identify encroachments

To increase the water carrying capacity of Saraswati river and to identify encroachments, the demarcation of the river is being done in Thanesar city.
Read More:

### PCMC readies action plan to contain pollution of rivers

Maharashtra Pollution Control Board (MPCB) in December 2019 served a show cause notice to Pimpri Chinchwad Municipal Corporation (PCMC) regarding heavy pollution in Pavana and Indrayani rivers. The board had asked the civic body to submit a time-bound programme to contain river pollution or face action.
Read more:

### J&K admin to fell 21 lakh trees to 'reclaim' Wular Lake

The Jammu and Kashmir administration has embarked on a project to cut over 20 lakh trees to "reclaim" the shrinking Wular Lake spread across north Kashmir's Bandipore and Baramulla districts. With the cutting of 2 lakh trees already underway in the first phase, experts advise caution.Read more:

### IIT Madras Designed Check Dam Aids Palar River To Store Surplus Rainwater

Funded under CSR by Madras Atomic Power Station (MAPS) at Kalpakkam, the Project Design of IIT Madras Researchers helped save Rs. 49.5 crore.
Read more:

### Central Water Commission Panel Inspects Jayakwadi Dam

A committee of experts of the Central Water Commission (CWC) on Thursday conducted an inspection of the Jayakwadi dam in Aurangabad district of Maharashtra. The panel comprising state and central government officials visited the dam and inspected the dam in terms of its security and management, an official said.
Read more:

## Academic news: scholarships

### Integrated Water Centre (IWC) Scholarships 2019/2020 for International Students to Study in Australia


Read more:

### ARES Scholarships in Belgium for Developing Countries


Each year, the ARES offers the chance to pursue a one-year specialised master's degree programme or a 4-to-6-month advanced training course within a higher education institution of the Wallonia-Brussels Federation, Belgium.Read more:

### International Water Center Scholarship (IWC) 2020


Masters in Integrated Water Management (MIWM)

Program Period:1 to 2 Years.
Read more:

## Conference/call for papers:

### LET2020 – The 17th IWA Leading Edge Conference on Water and Wastewater Technologies

The IWA Leading Edge Conference on Water and Wastewater Technologies is designed to be the place where new ideas are introduced and the opportunity is provided to interact with the "best of the best". This is the global conference where new insights into how pioneering science, technological innovation and leading practices shape the major transformation in water management that is underway.
Read more:

### The Global Summit on Waste Water Treatment & Reuse

The Annual Global Summit on Water & Wastewater Treatment & Reuse (GSWWTR), scheduled for 30th- 31st January 2020 at Hotel Le Meridien, New Delhi, India, brings together Industrial and Municipal wastewater professionals, providers of water and wastewater treatment technology & consultants to discuss challenges, efficient solutions and presents the latest thinking and technology to help solve our country's Waste Water challenges.Read more:

### 13th Annual Global Water Alliance Conference 2020


The Global Water Alliance (GWA), an international NGO, is organising the GWA conference 2020 with an aim to achieve WASH sustainability goals for developing countries.
Read more:

## Course/ Training Seminar Workshop/Contest:

### Water Heroes - Share Your Stories Contest


The "Water Heroes – Share Your Stories" Contest is being launched by Department of Water Resources, River Development & Ganga Rejuvenation; Ministry of Jal Shakti, Government of India with the objective of promoting value of water in general and for supporting country-wide efforts on water conservation and sustainable development of water resources.Read more:

### International Seminar on Sustainability Issues in Water and Energy - Nanotechnology Solutions


The International Seminar on Sustainability Issues in Water and Energy - Nanotechnology Solutions aims to Discriminate information on the latest trend in research in the areas of air, water and energy, Identify research areas relevant to sustainability of air, water and energy, form the group of researchers to collaboratively work on the above areas and Contributing to making the world better. Read more:

### 5th Edition of India Industry Water Conclave


The Conclave provides a platform to showcase best practices, deliberate on policy issues and highlight sustainable water management practices.
Read more:

## Student Highlight

Field work Semester 3: Training in watershed management

**Samaj Pragati Sahayog (SPS), Dewas, Madhya Pradesh (August 2019)**

The module is prepared with the objective that the students become fully capable of implementing and managing integrated watershed development projects on their own. Students get a first-hand exposure to field experiences of watershed management. They get to understand the need for watershed management, the ridge-to-valley approach and participatory planning methods used, the details of watershed structures constructed as well as the social issues that arise during implementation. The students will get to understand both the supply-side (water conservation and storage) and the demand-side (water use in agriculture) aspects of watersheds, the rationale of watershed structures, their location, design, construction and maintenance aspects. They will get hand-on experience in developing watershed treatment plans, integrating demand-side and supply- side aspects, with costing and physical and financial planning.

**For any comments or queries please contact:**

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