

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
(National Water Mission)

Proceedings of the Tenth Water Talk

1. National Water Mission (NWM) has initiated a seminar series- 'Water Talk' - to promote dialogue and information sharing among participants on variety of water related topics. The 'Water Talk' is intended to create awareness, build capacities of stakeholders and to encourage people to become active participants in conservation and saving of water. NWM had already organized nine 'Water-Talks', the details of which are annexed.
2. Tenth Water Talk in this series was held on 20th December, 2019. Dr. Mihir Shah, Former member of erstwhile Planning Commission and Distinguished Professor of Shiv Nadar University delivered the Water Talk. Shri U. P. Singh, Secretary (DoWR, RD & GR) MoJS; officers from CWC, CGWB, NMCG, CSMRS, NWDA and D/oWR, RD & GR attended the programme.
3. Shri JP Singh, Deputy Secretary, National Water Mission, gave the opening remarks, briefing the audience and the speaker about the objective of Water Talk Series. He explained that the programme intends to be a platform for transferring knowledge, solving problems, brainstorming and promoting teamwork amongst various participants. This, as he explained, also provides an opportunity for 'learning something new' and broadening public's perspective through sharing of knowledge and experience. Shri JP Singh then introduced the speaker and requested him to commence his talk on "A New Strategy for India".
4. Dr. Mihir Shah began his discussion by mentioning about the scale of crisis of India's water resources management. He pointed out that how changing climate is poised to exacerbate the pressures of industrialization, population growth and protracted conflicts on country's water resources.
5. He enunciated that despite investing heavily in major and medium irrigation projects since Independence, water is not reaching to the farmers for whom it is meant. He brought forth the case of Maharashtra where despite significant investment in large scale irrigation projects only 18% of the total area under cultivation is irrigated, amounting to half of the national average.
6. He, therefore, emboldened the need for organizing a cross-disciplinary engagement with this sector whereby an integrated framework of management can be diligently pursued. In another example of our ancestors' penchant for engineering pursuit, he prudentially enunciated the delirious status of India's ground water resources.

7. Dr. Mihir Shah further stated that groundwater provides 80% of India's drinking water and nearly two-thirds of irrigation needs. Over the last four decades, around 84% of the total addition to irrigation has come from groundwater. As he explained, excessive and unbridled ground water exploitation, although promoted to augment the benefits of green revolution in 1960s and thereafter, is all set to pose new challenges of food, health and water security for the country. He added that the single most important factor explaining the drying up of India's peninsular rivers is the over-extraction of groundwater. He mentioned that the depletion of spring flows in the mountains has also impacted river flows downstream.
8. He presented that a study of 55 catchments shows a decline in the annual run-off generated by India's major river basins such as Baitarni, Brahmani, Godavari, Krishna, Mahi, Narmada, Sabarmati and Tapi which cannot be attributed to the fall in rainfall but this has happened on account of economic activities also resulting in destructive of catchment areas. He cautioned that if this trend continues, most of these rivers will almost completely dry up.
9. Dr. Shah guided the audience towards the warranted paradigm shift in water management. He broadly underscored the need for overhauling existing agriculture practices as this sector guzzles almost 90% of country's water resources and India's current agriculture water use efficiency is amongst the lowest in the world.
10. He articulated the historical trajectory of development and the system of incentivization that has yielded skewed attention towards water guzzling crops of paddy and wheat in the agriculture sector. He thereafter, charted the future course of action which agriculture sector can adopt for bringing greater rationality in its use of water resources. He explained how India can shift from rice and wheat cultivation to growing nutri-cereals and alluded to the schemes of *Poshan Abhiyan* and *Jowar Utsav* while presenting existing efforts of government in this direction.
11. Dr. Shah strongly advocated for reduction in fertilizers and pesticides use in the agriculture sector. He explained how the root of the problem can be traced back to India's green revolution and this, in turn, has now burgeoned into a national health problem. Chemical agriculture, as he continued, has reached its limit, yielding negative marginal returns in many areas due to reduced yield response to fertilizers and pesticides. This has also led to a dramatic rise in the cost of production with disproportionate burden on poor and marginal farmers. He cautioned about the implementation of measures like higher subsidies for chemical inputs, cash transfers, loan waivers, higher MSPs for wheat and rice.
12. He presented the case of natural farming which, as he explained, leverages the biological synergies amongst numerous plant and animal species allowing a) exchange process between plants, soil microbes and soil nutrients; b) making hitherto locked nutrients bio-available to plants; c) building of soil humus and soil fertility; and d) increase in soil moisture thereby resulting in enormous water savings. He alluded to some tried and tested methods,

viz. Non-Pesticide Managed Farming, Low Budget Natural Farming, Conservation Agriculture and Low External Input Sustainable Agriculture.

13. He further enunciated that how on-farm practices can abet improvements in water savings and therefore underscored the need for installing water efficient fixtures on farms, viz. drip and sprinklers. He also emphasized the need for involving local farmers in the management of irrigation infrastructure. He presented that 24mha of additional land can be added under irrigated area at a cost of ₹ 1.5 lakhs per hectare as against ₹ 3-5 lakhs per hectare which is the present cost as per the present strategy of constructing more and more crops. He also explained the key benefits of pursuing Participatory Irrigation Management primarily in its ability to help water managers to wean away from the pitfalls of land acquisition, major construction efforts, contraction-politician-official nexuses, cost escalation and time overruns.
14. Dr. Shah further advocated for Participatory Groundwater Management wherein he overruled the possibility of managing ground water structures through licence-quota-permit raj and suggested that the only way forward is the participatory aquifer management by primary stakeholders. He enunciated for demand side management and crop water budgeting with ground water recharge.
15. He articulated much required reforms in India's water governance approach starting from scientific management of river basins or catchments. He highlighted some key concerns emerging out of our failure to management water at a catchment scale and furthermore, showcased cases wherein excessive concretization in the name of development has stifled the river insofar as its interaction with the broader catchment processes and ecology is concerned. He elaborated upon the canon of "healthier basins for the health of the river" and made reference to the case of New York and Cities from other countries wherein residents are going at length to uphold the integrity of broader catchment processes which in turn abet these Cities in sourcing clean water and ancillary ecosystem services.
16. He also explained the three kinds of 'hydro-schizophrenia' gripping our country's water managers. These are primarily between irrigation and drinking water, surface and ground water, and, water and wastewater which have resulted in slipped back habitations, dried up rivers, depleting water quality and serious health implications for the public and ecosystem. To end this schizophrenic state of affairs, he added, water managers need to a) ensure source sustainability, b) integrate wastewater management, and c) promote conjunctive use of ground water and surface water.
17. Dr. Shah surmised his presentation by underscoring the key role that civil society can play in nurturing the overall architecture of governance in the country. India's water management strategy can recourse to PIM and participatory forms of ground water, including sustained partnerships between key public and private institutions, to accelerate sustainable and efficient water resources management practices. He also added that navigating these

transitions will require a cross-disciplinary approach whereby experts from social science, agriculture, ecological economics and other allied disciplines will have to work in partnership for developing and thereby implementing an integrated framework for managing country's water resources.

18. Following Dr. Shah's Talk, Shri U.P. Singh, Secretary, D/o WR, RD & GR, Mo JS, addressed the audience and quoted the case of Jakhni village, Uttar Pradesh, which has pioneered grass roots based participation towards water conservation. Furthermore, recognizing the challenges in sustaining public's participation in development process, Secretary traced the genesis of this problem to the colonial era, the legacy of which has still prevailed whereby 'locals' are understood as mere subjects who remained perennially depended on the 'state' for accessing basic public services. He supported Dr. Shah's idea for Hydro-Schizophrenia, its results and the process for ending it. He added that the policy corridors in this country has for long remained a stronghold of engineering faculty and the same cannot continue owing to the challenges of the full scope of the mandate of sustainably managing India's water resources.
19. Following Dr. Shah's talk, and subsequent address by Secretary, D/o WR, RD & GR, Mo JS, audience were invited in the session of question and answer. The ensuing discussions revolved around the role of public participation for water management and the limited focus on managing urban water crisis in India. In the case of latter, participants noted with concern that most of the strategies for navigating India's current water challenges have yielded themselves towards managing irrigation needs for agriculture, whereas, urban areas have not featured much in the policy discourse. As it was highlighted, more than 30% of country's population is living in urban areas and this figure is only expected to increase in the next decades. Given the urgency of this issue, strategic actions are desired for addressing the challenges facing India's urban milieu.

Annexure

Water Talk	Name of the Speaker	Theme of the Talk	Date
1 st Water Talk	Shri U.P. Singh Co Speaker: Shri Pushpendra Singh, Shri Alok Sikka, Shri Manu Bhatnagar, Shri Sachin Oza	'Outlining the concept of Water-Talk ' 'Water conservation in Bundelkhand - Aapna Talaab Abhiyan' 'Agricultural water management' 'Urban water supply and management' 'Ground water management and integrated water resource management in the command area of irrigation systems of northern water stressed areas of Gujarat'	22.03.2019
2 nd Water Talk	Shri Shashi Shekhar	"Ground Water Governance-prospective, challenges and suggested interventions"	1.05.2019
3 rd Water Talk	Dr. Nayan Sharma Shri Pradeep Gandhi Shri S.C Bardhan	'Upgrading Technology in Irrigation, Hydro Power, Navigation and Flood Control for Optimal Water Conservation' 'Water Conservation at Ground Level' 'Water Conservation and Management'	24.05.2019
4 th Water Talk	Dr. Anil Joshi	'Ecology Inclusive Economy'	21.06.2019
5 th Water Talk	Dr. Tushaar Shah	'Governing India's Energy-Groundwater Nexus: Old Constraints and New Opportunities'	19.07.2019
6 th Water Talk	Shri Popatrao Pawar Shri Umakant Umrao	'Hiware Bazar – A Water Budgeting model' The Dewas Initiative: An economically viable & environmentally sustainable Water Conservation Model 'Beyond Rivers'	23.08.2019
7 th Water Talk	Shri Sonam Wangchuck	Water Conservation and construction of artificial Glacier known as Ice-Stupa in Leh-Laddakh Region.	20.09.2019
8 th Water Talk	Shri Heera Lal	'Water Conservation in Banda District, UP'	18.10.2019
9 th Water Talk	Dr. Himanshu Kulkarni	'Groundwater Management and Governance in India'	15.11.2019
10 th Water Talk	Dr. Mihir Shah	'A New Water Strategy for India'	20.12.2019