

# Webinar Proceedings

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No. 6

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## Principles for Water Governance in a Post-COVID World

Webinar Series on the Socio-Economic Impact of the Covid Pandemic



BAHÁ'Í CHAIR  
FOR STUDIES IN  
DEVELOPMENT

DEVI AHILYA VISHWAVIDYALAYA

Principles for Water Governance in a  
Post-COVID World

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The Bahá'í Chair for Studies in Development is an endowed Chair at Devi Ahilya Vishwavidyalaya, Indore established to promote interdisciplinary research and scholarship on social and economic development based on a vision that regards enduring prosperity as an outcome of material and spiritual progress. As part of its mandate, the Chair organizes spaces for dialogue, exchange of ideas and discussion on themes related to development with various stakeholders in the field of development including academicians, civil society organizations and representatives of government organizations.

In response to the Covid 19 pandemic, the Chair has organized a series of webinars on the social and economic impact of the pandemic on India's most vulnerable and marginalized populations in rural and urban areas. These webinars bring together some of India's best-known social scientists and development practitioners to share insights on the challenges facing these vulnerable groups and the steps that can be taken at the level of policy making and practice to address these challenges.

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## Profile of the Speakers

**Dr. Vishal Narain** is Professor at the Management Development Institute Gurgaon, India. He holds a PhD from Wageningen University, the Netherlands. His academic interests are in interdisciplinary analyses of public policy processes and institutions; water governance; rural-urban transformations and peri-urban issues; vulnerability and adaptation to climate change; and gender, rights and equity issues in water access and control. In particular, he is interested in the relationship between technology and institutions in water management and how the intersection of different identities and multiple stresses shapes people's differential vulnerability to environmental change. He explores these issues relying predominantly on ethnographic and participatory research methods. He has published widely on these issues. He is the author of *Public Policy: A View from the South* and has co-edited, among other books *Water Security in Peri-Urban South Asia*; *Adapting to Climate Change and Urbanisation* and *Climate Change Governance and Adaptation: Case Studies from South Asia*.

**Mr. P. S. Vijayshankar** is a founder member of Samaj Pragati Sahayog (SPS), an NGO based in Dewas district of Madhya Pradesh. As part of SPS, he has lived and worked among the tribal communities of the Narmada valley for the last 28 years. His areas of interest are water resource management, sustainable agriculture and strengthening of community-based and self-reliant people's institutions. He has been engaged in training and capacity building of a wide range of organizations and is a member of the Faculty of the Baba Amte Centre for People's Empowerment (BACPE), set up by Government of India for extending training and field support to grass-roots agencies implementing watershed projects in different parts of India.

He has co-authored the book, *India's Drylands: Tribal Societies and Development through Environmental Regeneration* and co-edited the book, *Water: Growing Understanding, Emerging Perspectives*. He has published many papers including *Groundwater Demand Management at Local Scale in Rural Areas of India: A Strategy to Ensure Water Well Sustainability based on Aquifer Diffusivity and Community Participation* and *India's Groundwater Challenge and the Way Forward*.

**Mr. K. J. Joy** is a Founding Member and Senior Fellow at Society for Promoting Participative Ecosystem Management (SOPPECOM), Pune, India, and the Convener of the Forum for Policy Dialogue on Water Conflicts in India. Mr. Joy has been an activist-researcher for nearly 40 years and his areas of interest include drought, participatory irrigation management, river-basin management, institutions, multi-stakeholder processes,

water conflicts, dams and hydropower, renewable energy, water ethics, and people's movements. He has published extensively on water-environment-development issues and some of his co-authored/co-edited books include *Split Waters: The Idea of Water Conflicts*; *India's Water Futures: Emergent Ideas and Pathways*; *Alternative Futures: India Unshackled*; *Water Conflicts in Northeast India*; *Water Conflicts in India: A Million Revolts in the Making* and *Community-based Natural Resource Management: Issues and Cases from South Asia*.

**Dr. Safa Fanaian** is a research fellow at the Crawford School of Public Policy at the Australian National University. Dr. Fanaian currently works on the intricacies of water economics, explores participatory methods such as dialogues for equitable decision-making, and focuses on issues of water justice. She has a doctorate from the School of Geography and the Environment, University of Oxford, United Kingdom, and is an Oxford-Indira Gandhi Scholar at the Oxford-India Centre for Sustainable Development. Her doctoral research explored the co-evolution of water risk and governance processes in an intermediate riverine city, Guwahati, India. Dr. Fanaian also has a master's degree in water management from IHE Delft Institute for Water Education in the Netherlands and a Master of Science in ecology and environmental science from Pondicherry University, India. She has more than seven years of experience working with nongovernmental organizations on collaborative research projects to improve water security in South Asia.







## **Background Note**

The COVID-19 pandemic has brought to light many aspects of the crises in humanity's relationship with water. The emphasis on washing hands, and practicing personal hygiene brought into sharp relief the severe water scarcity facing millions of India's most underprivileged people in rural and urban areas. The unforeseen and rapidly escalating nature of the crisis demonstrated the need for greater resilience in public health systems. Reliable access to water for drinking and personal hygiene is an indispensable element of this system. At a broader level, the pandemic highlighted the extent to which social and economic life is dependent on and circumscribed by the larger ecological system and the perils of ignoring or abusing this connection. The scarcity of water remains one of the most visible and acute manifestations of the crisis triggered by an anthropocentric worldview.

The crisis of water in the present world relates to both its availability and its quality. Globally, the demand for fresh water will exceed supply by 40 percent. South Asia is particularly hard hit by this scarcity. Lakes, ponds, wetlands, and rivers that were the main sources of freshwater are drying up with rising demand to cater to agriculture, industry, and the needs of fast expanding cities on the one

hand, and the blockage and encroachment of catchment areas on the other. Most of these surface water bodies are also heavily polluted with industrial effluents, sewage, plastic, and other refuse. Faced with growing scarcity, millions have turned to the only other source of fresh water to meet their multiplying needs – subterranean aquifers. In India, water from subterranean aquifers is being over-pumped despite most areas of the country having a very low rate of natural recharge. This has resulted in fast depleting water tables with the prospect of cities running out of groundwater in the coming decades becoming a distinct possibility. Further, water from these aquifers in many parts of the country has been found to contain high levels of fluoride, arsenic, mercury, and even uranium and manganese which have serious health implications.

What compounds to the crisis of drying surface water bodies and the over extraction of groundwater is the effects of climate change that threatens to alter rainfall patterns leading to more intense and frequent droughts and floods.

In addressing the challenge of water scarcity in the country, one of the steps suggested has been to shift to agroecological farming that is more environmentally-sound and water-efficient<sup>1</sup>. Other suggested interventions include

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<sup>1</sup> Among the most significant causes of the depletion of groundwater has been the agricultural policies adopted with the Green Revolution in the 1970s. To address India's food shortages, these policies encouraged Indian farmers to grow large quantities of water-guzzling cereals such as rice and wheat. To incentivize the cultivation of these crops, farmers were provided free or highly subsidized electricity to make it possible for them to draw

imposing water limits on agriculture and industry, promoting circular water systems which promote wastewater treatment, rejuvenating depleting surface water bodies by protecting the catchment areas, promoting local rooftop and backyard water harvesting and increasing investment not only in pipelines and reservoirs but also in boosting natural eco-systems such as wetlands, forested watersheds, and floodplains.

Policy interventions in addressing water stress will also have to be sensitive to the way existing social and economic inequalities affect access to water. Those who are most economically deprived in the country - in rural areas or urban informal settlements – are also the worst hit by the scarcity and contamination of water. Further, it is usually women who are worst affected by water scarcity. They are forced to travel long distances or stand for hours in long queues for water. This leaves them with much less time for attending school, childcare, farming, or other income-generating activities. In many parts of the country, the persistence of the caste system implies that people belonging to lower castes are deprived of access to water. This discrimination is often institutionalized through the limited representation of women and those of lower castes in institutions of water governance.

To contribute to enduring change, there is the need for a fundamental reconceptualization of humanity's relationship with water. It will have to be based on a more profound

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groundwater to irrigate their farms. With free access to electricity and water, farmers used tube wells to pump ground water throughout the day for their fields.

consciousness of the interconnectedness of all life and the oneness of existence. Water is a common resource that is the shared heritage of all humanity. Unlike land, it cannot be divided or partitioned. Yet, most of the existing policies and rules that govern its use ignore its shared nature and treat it as a commodity to be owned, traded, and managed. For example, the rules that relate to groundwater use in India consider the water extracted from a piece of land to be the personal property of the owner of the land. It is this atomistic conception of ownership that has resulted in the present crisis where landowners engage in the competitive drilling of ever deeper tube wells to draw as much water as possible.

A more mature and sustainable conception of the relationship between humankind and the natural world can be found in the principle of stewardship. To be a steward is not to own a resource but rather to be a conscious and conscientious trustee of a heritage that belongs to humanity as a whole across generations. When applied to the context of humanity's relationship with water, this would require a reconceptualization of the governance of water and of the role that individuals, institutions, and communities play in this process. It would require water education that would create knowledge of local water systems that are grounded in particular biophysical settings. There would need to be more community participation in water governance and better institutional structures for collective governance of the commons.

The Bahá'í Chair for Studies in Development at Devi Ahilya University is organizing a webinar on the theme 'Principles for Water Governance in a Post-COVID World' to explore

the contours of a new paradigm for water governance based on the principles of environmental stewardship, justice and the oneness of existence. The webinar seeks to bring together empirical insights and the learning from promising prototypes, to show the way forward towards a more sustainable water future.





## **Webinar Proceedings**

As part of its series of webinars exploring the social and economic impact of the COVID-19 pandemic on India, the Bahá'í Chair for Studies in Development at Devi Ahilya Vishwavidyalaya organized a webinar on the theme 'Principles for Water Governance in a Post-COVID World'. The pandemic has underscored humanity's fraught relationship with water, emphasizing the acute scarcity of this resource for hygiene and survival, particularly in underserved communities.

India's water crisis manifests in both availability and quality. Surface water sources such as rivers and ponds are drying up or being polluted by industrial waste, sewage, and plastics, while groundwater reserves are being over-extracted with low recharge rates. These issues are exacerbated by climate change, causing erratic rainfall, droughts, and floods. Addressing these problems among other things requires a comprehensive understanding of interconnected ecological and social systems.

At a broader level, the webinar sought to explore how the issue of water governance can only be comprehensively addressed in the context of a moral transformation that seeks to build a society that embodies the principles of



environmental stewardship, justice, and the oneness of existence.

The panellists of this webinar were Mr. P. S. Vijayshankar, Founder, Member and Director of Research, Samaj Pragati Sahayog; Dr. Vishal Narain, Professor, Public Policy and Governance, Management Development Institute, Gurgaon; Dr. Safa Fanaian, Research Fellow at the Crawford School of Public Policy at the Australian National University and Mr. K. J. Joy, Senior Fellow, Society for Promoting Peoples Participation in Ecosystem Management (SOPPECOM), Pune.

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Dr. Vishal Narain, the first speaker on the panel, set the stage with a conceptual exploration of narratives in public policy. He emphasized how the way a problem is framed fundamentally influences the solutions proposed. The COVID-19 pandemic offers an opportunity to reevaluate India's water crisis, shifting from traditional views of water scarcity as a purely physical issue to one of unequal access and distribution.

*Analysing Inequalities through an Intersectional Lens*

Dr. Narain argued that narratives are central to understanding public policy choices. Historically, India's water crisis has been framed as a physical scarcity issue, prompting infrastructure-focused solutions such as building dams and pipelines. However, he advocated for reframing this crisis as one of institutional and distributional inequities, which the pandemic has starkly exposed. For instance, while

urban, gated communities enjoy consistent water access, adjacent informal settlements struggle with severe shortages.

Dr. Narain underscored the importance of addressing unequal access and fostering partnerships to resolve water inequities. He highlighted the necessity of considering social differences, particularly gender, as a fundamental axis of inequality in water access. Gender issues, which naturally emerged in his field research, illustrate how water scarcity disproportionately affects women, who often bear the burden of fetching water, limiting their opportunities for education and economic activities.

Dr. Narain called for a more nuanced approach to the conceptualization of social inequalities that had a singular focus such as gender and called for analysis of inequalities to be informed by greater intersectionality that considered gender along with caste, class, and location. He called for sensitizing State agencies to view water provisioning not just as infrastructure development but through a conceptual lens that integrates gender and other social dimensions.

This reframing of water governance through narratives and intersectionality should form the basis for transformative policy interventions aimed at achieving equitable and sustainable water access.

### *Blurring Boundaries between the Rural and Urban*

Another concern with public policy narratives that Dr. Narain pointed out in his comments, was the traditional distinction between rural and urban water supply which has become increasingly untenable. Research in South Asia highlights the interconnectedness of these systems, with urban water expansion often depleting rural sources such as lakes, wetlands, and tanks. This rural-to-urban water transfer exacerbates competition and resource scarcity.

He argued for integrated planning to address these issues, particularly in peri-urban areas where rural and urban characteristics overlap. The COVID-19 pandemic underscored this need, as it revealed vulnerabilities in areas with mixed characteristics, such as informal settlements with high population density and inadequate water infrastructure.

### *Evolution of Water Resource Education in India*

To bring about change in public policies on water, Dr. Narain emphasized the need to reform water resources education to focus on interdisciplinarity. Historically, India's water professionals were trained as civil engineers, emphasizing technical solutions like infrastructure and supply augmentation. However, water resources education has become more interdisciplinary in recent years. Institutions such as the TERI School of Advanced Studies and Shiv Nadar University now incorporate governance, distribution, and social dimensions of water into their curricula.

Efforts by organizations like SACI Waters have also reoriented traditional engineering programs toward interdisciplinarity, attracting more female students to these programs. This shift promises a new generation of water professionals better equipped to address water's governance challenges and societal impacts, fostering a broader understanding of water issues.

Dr. Narain concluded by stressing the need for greater collaboration between academics, State agencies, NGOs, and civil society in addressing the challenge of ensuring equitable water access.

The next speaker on the panel, Mr. P.S. Vijayshankar introduced the COVID-19 pandemic as a moment for rethinking water governance. The crisis exposed stark inequalities in water access, particularly for marginalized populations like urban migrants. These disparities, long-standing but often ignored, became visible during the pandemic.

### *Two paradigms of water management*

Mr. Vijayshankar contrasted two paradigms of water management. The first which he called the extractive approach, focused on maximizing resource use, often favouring certain groups at the expense of others, leading to groundwater depletion, deforestation, and climate-related impacts like glacier melting. On the other hand, the ecosystem or regenerative approach advocated for stewardship and respect for water as part of a larger ecosystem, emphasizing sustainability and intergenerational

equity. It recognized water as a shared resource, vital for ecosystems and future generations. The pandemic underscored the urgency of moving away from extractive practices to more equitable and sustainable solutions, particularly as water scarcity and degradation intensify globally.

### *Reforming agriculture*

He highlighted agriculture as the primary consumer of water in India, with up to 90% of the total water demand allocated to farming, with drinking water accounting for only about 5%. He attributed the cause for excessive water use in agriculture to practices that emerged after the Green Revolution, particularly the emphasis on water-intensive crops such as paddy, wheat, and sugarcane. Together, these three crops consume 80% of agricultural water in the country.

For example, Punjab—a naturally dry region—was transformed into an irrigated agricultural hub, leading to unsustainable water use due to the cultivation of paddy, a water-guzzling crop. This paradigm is contrasted with the potential benefits of cultivating less water-intensive crops like millets, pulses, and oilseeds. Such crops are not only more sustainable but also economically and environmentally viable, particularly for small-scale farmers.

### *Groundwater Management*

Groundwater resources are under severe stress due to decades of unregulated extraction facilitated by borewells and pumps. States like Punjab have exhausted shallow

aquifers, forcing reliance on deeper, less sustainable reserves. In regions like Madhya Pradesh, groundwater depletion has become a critical issue, with cities like Indore now dependent on surface water from the Narmada River.

Mr. Vijayshankar further emphasized the need for a shift toward aquifer-based management frameworks. This approach involved mapping aquifers, assessing water availability, and implementing community-based protocols for sustainable use. Programs like the Atal Bhujal Yojana and draft groundwater legislation are positive steps, but effective implementation remains a challenge.

The next speaker on the panel was Mr. K. J. Joy, a senior fellow at the Society for Promoting Participative Ecosystem Management and an activist-researcher for over 30 years. In his initial comments, Mr. Joy underscored water's critical role as a social determinant of health, particularly highlighted during the pandemic. Access to clean, adequate water became essential for maintaining basic health, a critical determinant of societal well-being. Drawing attention to India's stark water crisis, Mr. Joy referenced the 2018 NITI Aayog report, which paints a grim picture: nearly 600 million people face severe water stress, and by 2030, water demand is projected to be double the available supply.

He argued that the pandemic offers a unique opportunity to rethink water governance, embedding it within frameworks of environmental and social justice. Mr. Joy stressed the need to view water as an ecosystem resource rather than a commodified entity, drawing attention to the

interconnectedness of water quality, land use, forest cover, and broader ecological systems.

### *Rethinking Water Narratives*

Mr. Joy critiqued interventions like large dams, river interlinking, and excessive groundwater extraction, which disrupt natural processes. Quoting Prof. Ramaswamy R. Iyer, Mr. Joy asserted that rivers are not mere human artefacts but integral to ecological and cultural systems. He called for abandoning the dominant mindset that views water as a resource to be exploited for human consumption, epitomized by the notion that “any drop of water going into the sea is a waste.” Contrary to this supposition, Mr. Joy cited recent research that highlighted the ecological necessity of maintaining freshwater flows to the sea, which regulate ocean temperatures, salinity, and monsoonal rainfall. He warned against paradigms that prioritize closing river basins, citing the example of Indian rivers like Krishna and Cauvery, which often fail to reach the sea. He argued for rethinking interventions to align with ecological realities and sustainability goals.

### *The Hydraulic Mission*

Mr. Joy critiqued the "hydraulic mission," an approach rooted in the 19th and 20th centuries, which combines scientism, technological domination of nature, and infrastructure development. This ideology has shaped water governance in India, manifesting in large dams and grid-based systems, even for decentralized needs. He critiqued India's reliance on centralized, large-scale water

infrastructure projects, likening them to a "Bhagirath system" where enormous financial resources are directed towards infrastructure-heavy approaches. He argued that decentralized, community-based solutions can address water scarcity effectively without the need for such massive investments. He also questioned the efficacy of government initiatives like the Jal Jeevan Mission, suggesting that while these programs aim to provide taps in every household, they fail to ensure reliable water availability.

He discussed India's enduring dependence on the "hydraulic mission" paradigm, contrasting it with the West, which has moved away from such approaches and advocated for a paradigm shift towards more sustainable and ecologically-integrated water management practices.

### *The Climatization of Problems*

Mr. Joy discussed the pervasive "climatization" of problems, where climate change is blamed for all water-related issues, such as floods and droughts. He acknowledged the gravity of the climate crisis but warned against using it as a convenient excuse to avoid addressing structural issues like political economy choices and unsustainable development paradigms. He further pointed out the importance of addressing uncertainty brought about by climate change, particularly in water resource planning. Climate variability demands a new approach to knowledge production, acknowledging gaps in our understanding of hydrological systems. He stressed the need for humility and precaution in water governance, advocating for nature-aligned interventions and adopting a precautionary principle that



errs on the side of safety in the face of incomplete knowledge.

*Principles for Sustainable Water Governance*

To address these challenges, Mr. Joy outlined some of the key principles for water governance:

1. **Ecosystem-Based Planning:** Developmental interventions should align with the ecological contours and carrying capacities of water basins.
2. **Precautionary Principle:** Given the uncertainty in water science, decisions should prioritize safety, ensuring interventions cause minimal harm.
3. **Subsidiarity:** Water needs should be addressed at the lowest possible scale, such as village or micro-watershed levels, reducing dependency on large-scale projects like inter-basin transfers.
4. **Rights of Nature:** Drawing inspiration from global precedents like New Zealand's legal personhood for rivers, Mr. Joy called for recognizing rivers' intrinsic rights in India to ensure their protection and ecological functions.

He also argued for shifting focus from augmenting water supply to managing demand. This includes prioritizing green water (soil moisture) and grey water (recycled water) over new surface water storages. The agricultural sector, which consumes 80-90% of India's water, was identified as a key area for reform, including optimizing crop patterns and reducing water-intensive cultivation practices.

Another theme that emerged in Mr. Joy's comments was equity and the need for distributive justice to address historical and structural inequalities in water access. He highlighted the need to challenge entrenched systems of power and privilege, ensuring that water governance prioritizes the needs of the most vulnerable.

The discussion continued with a focus on systemic inequities within the water sector, emphasizing the intersection of land rights, water access, and socio-economic disparities. One significant challenge is how to decouple land ownership from water rights to ensure equitable access to water for productive uses. Experiments in adaptive management have revealed the importance of flexibility in governance structures, allowing for adjustments based on new information and evolving circumstances.

*The need for spaces for public participation*

Mr. Joy advocated for democratizing the water sector by creating legally mandated institutional spaces at various scales—from micro-watersheds to river basins. These spaces would enable meaningful public participation, shared decision-making, and conflict resolution. However, current frameworks lack institutionalized mechanisms for negotiation and collective action, especially in addressing deep-rooted conflicts.

To address these issues, Mr. Joy underscored the need to rethink social and ecological relationships, embedding water governance within an environmental and social justice framework. He argued for the need to empower

marginalized communities to articulate and build alternative narratives in the water sector and that these transformations, while daunting, are essential to achieving equitable and sustainable water management.

The final speaker on the panel was Dr. Safa Fanaian. Building on Mr. Joy's insights, she called for a “coalition to reimagine water governance” in a post-COVID world. The pandemic had amplified existing flaws in water governance, exposing the inadequacies of traditional hierarchical systems. Terms like "integrated water management" had become widespread in policy discourse, yet their practical implementation often remains fragmented and disconnected from ground realities.

#### *Reconceptualizing Governance beyond Efficiency*

Dr. Fanaian critiqued the dominant paradigm of efficiency, which has become central to water governance but often prioritizes economic and engineering concerns over social equity and sustainability. While the analytical approach to water governance has advanced knowledge, it fails to address the interconnectedness of modern challenges. For example, urban flooding is influenced not just by weather patterns but by changes in infrastructure, politics, and urban planning.

Efficiency, while valuable, disproportionately benefits privileged groups and overlooks vulnerable communities. This framework often commodifies water, sidelining cultural and ethical dimensions. Dr. Fanaian argued for a shift from efficiency-centered governance to justice-

centered governance, where equity and ethics guide decision-making. Collaboration and cooperation, while essential, must also align with principles of justice to ensure inclusivity.

### *Towards a Just Water Governance Framework*

Dr. Fanaian outlined the challenges of transitioning to a justice-oriented governance system. While ideals like transparency and accountability are frequently cited, achieving these goals requires practical, localized efforts. Informal water communities often demonstrate resilience and agency by organizing themselves to secure water access. However, such efforts are time-intensive and demand significant resources, highlighting systemic power imbalances.

The question remains: how can governance systems proactively incorporate justice without requiring marginalized groups to bear the brunt of advocacy efforts? Dr. Fanaian emphasized that water governance is inherently dynamic. Achieving a just paradigm demands ongoing engagement, systemic restructuring, and a commitment to addressing inequalities at all levels.

Dr. Fanaian emphasized the importance of justice as a central framework for water governance and the need for a governance system rooted in universal principles and ethical participation. She warned against exploiting marginalized groups under the pretext of participation, highlighting the unequal value placed on people's time and the systemic barriers that prevent meaningful inclusion.

To address these inequities, Dr. Fanaian proposed several key steps:

1. Encouraging diverse representation to include voices from all communities, particularly those who are often overlooked.
2. Valuing all knowledge systems, breaking the monopoly of dominant knowledge centers, and dispersing knowledge to create more equitable systems.
3. Consistently promoting the message of justice to counteract misinformation and build collective action around equitable water governance.

Dr. Fanaian also called for a deeper understanding of interdependencies in water systems, avoiding siloed approaches, and fostering local innovation within a justice-centered framework. She concluded with an inspirational quote, urging persistence in the face of skepticism and a commitment to creating transformative change.

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### *Connecting Local Knowledge with Science*

A range of themes were raised in the discussion that ensued after the panellists spoke. A question about translating scientific knowledge into layperson-friendly terms sparked a conversation about the importance of understanding community narratives. The panellists emphasized that researchers should begin by listening to how communities describe their experiences and then connect these narratives to scientific concepts. For example, villagers' observations

of seasonal changes, such as celebrating Diwali during warmer weather, can be interpreted as evidence of longer summers and changing climates.

Dr. Narain shared a fieldwork experience that highlighted the importance of aligning scientific language with local terminologies. In Gujarat's Kachch region, geologists successfully used terms familiar to local communities to describe geological characteristics, fostering better understanding and cooperation. The broader challenge, however, lies in recognizing the diversity within communities and addressing competing narratives, as there is often no single "community perspective."

*The Interplay of Knowledge and Agency*

Building on the discussion of narratives, the panel explored how knowledge shapes agency. Historically, communities had systems and worldviews—however imperfect—that were disrupted by the imposition of technocratic approaches. For instance, tribal communities in Madhya Pradesh once managed resources based on ecological principles that modern interventions often disregard. Empowering communities requires valuing their knowledge systems and integrating them with scientific understanding rather than overshadowing them.

Mr. Joy raised concerns about the increasing “technification” of water issues, which depoliticizes fundamental questions of resource distribution. While technology has its place, it must align with social priorities to ensure it serves collective needs rather than reinforcing

inequities. Simplified concepts, such as comparing water budgeting to living within one's means, resonate with communities and encourage sustainable practices.

### *Co-Production of Knowledge: Challenges and Potential*

The idea of the co-production of knowledge was explored as a means of bridging gaps between academic, scientific, and community-based perspectives. The panellists agreed that true co-production required more than simply collecting community inputs; it demands an equitable balance of power. Traditional knowledge must be treated with the same respect as scientific data, avoiding tokenism or relegating local insights to appendices in research papers.

Mr. Vijayshankar shared an example from a climate change project where the research team faced tensions between climatological data and community narratives. In cases where these sources aligned, the process of triangulation was straightforward. However, when discrepancies arose, the team struggled to reconcile the two. This highlights the importance of recognizing community perspectives as valid interpretations of reality, not merely subjective perceptions.

The conversation concluded by acknowledging the inherent power dynamics in knowledge production. Co-production risks becoming a tool for reinforcing existing hierarchies unless deliberate efforts are made to address these imbalances. By integrating diverse voices—while remaining vigilant about power dynamics—co-production can pave the way for more inclusive and sustainable solutions to pressing environmental challenges.

The discussion continued to explore how dominant ideologies shape water governance narratives, emphasizing the role of media and technology in reinforcing these frameworks. Dr. Fanaian highlighted that technologies often depoliticize discussions around water governance by framing decisions as neutral when, in fact, they are deeply political. These decisions, made by influential groups, prioritize certain problems while neglecting others. Consequently, infrastructure and technological solutions often serve specific interests, perpetuating existing power dynamics rather than empowering marginalized groups.

#### *The Role of Discourse and Repetition*

A subsequent discussion then built on Dr. Fanaian's insights, focusing on how discourse influences water governance practices. Mr. Joy highlighted the dual nature of slogans and rhetoric: while they can oversimplify complex issues, they can also serve as powerful tools for change when used effectively. Dr. Fanaian's point on the importance of consistent messaging resonated here, as repetition can reinforce equitable ideas and shape policy frameworks.

#### *The Complexities of Participation and Power Dynamics*

The panel explored the political nature of participation, noting that genuine involvement requires more than dialogue. Legal frameworks must provide structured opportunities for communities to contribute to governance. However, this is insufficient without organized grassroots movements and institutions advocating for marginalized groups. Effective participation, as observed in Kerala's



equitable outcomes, often stems from robust community organization.

Panellists cautioned against idealizing participation. Past initiatives, such as participatory irrigation management (PIM) in India, often fell short due to local power imbalances. Without mechanisms to counteract elite capture and ensure accountability, participatory structures risk reinforcing existing inequities. The panellists concluded that participation, while vital, must be complemented by systemic safeguards and broader cultural shifts.

#### *Addressing Uneven Resource Distribution and Ecosystem Perspectives*

A question from the audience introduced the challenge of addressing natural inequalities in water distribution. Mr. Joy highlighted the anthropocentric assumptions underpinning concepts like "surplus" and "deficit" basins. He critiqued the notion of transferring water as a universal solution, advocating instead for a deeper understanding of ecosystem functions and their interdependencies.

Panellists suggested that distributive justice does not always require physical redistribution of resources. Instead, focusing on equitable access to benefits—such as shared agricultural outputs—can address disparities without disrupting ecosystems. This broader perspective underscores the importance of integrating ecological considerations into water governance frameworks.

This detailed discussion reflected the multifaceted challenges of water governance and the need for justice,

ethical participation, and systemic transformation to ensure sustainable and equitable outcomes.

*Deepening Natural and Social Divides in Water Policy*

The discussion then shifted to how existing divides in natural and social ecosystems are often exacerbated by human intervention, particularly in the water sector. Historical examples, such as the Green Revolution, highlight how policies tend to favour resource-rich areas, deepening divides rather than bridging them. For instance, regions with better water endowments received greater attention and resources, leaving dryland and marginalized areas neglected. This pattern persists today, with water policies often enriching already well-endowed communities while depriving the less privileged. The conversation emphasized the need for justice-driven interventions that unite rather than divide communities.

The panellists examined how human behaviour has conformed to the artificial divides created by infrastructural development. Urban populations acclimate to consistent water availability, such as in gated communities, while rural and riverine populations adapt to floods and scarcity. However, these adaptations are not inherently equitable or just. Even within micro-watersheds, interventions in one area can have downstream effects, such as increased water availability in valley regions at the expense of upland areas. Sharing the costs and benefits of such interventions remains an unresolved challenge.

### *Role of Technology in Water Management*

The potential of technology, such as solar-powered irrigation, to mitigate groundwater depletion was discussed. While initiatives like solar irrigation pumps have shown promise, their effectiveness in conserving water remains mixed. The broader point underscores the need for sustainable and context-specific technological interventions rather than blanket solutions that may inadvertently exacerbate issues. The depletion of aquifers in regions like Punjab and Andhra Pradesh serve as evidence of the negative impact of over-reliance on blanket application of technology (in this case, borewell irrigation). The panellists argued that a more integrated approach is necessary—one that acknowledges social conflicts and aims to regenerate rather than exploit water resources. This perspective challenges the notion that technological interventions alone can resolve the complex, interconnected issues of water scarcity and distribution.

### *Water Justice within Broader Systems*

Building on earlier discussions, panellists highlighted the interconnected nature of water justice issues within broader social, economic, and environmental systems. Addressing water inequality requires making justice and equity central to governance and policy. To achieve this, panellists proposed creating coalitions to mainstream stories of justice, equity, and rights-based approaches, shifting the dominant narrative from economic efficiency to equitable resource distribution.

Examples of success in water governance demonstrated the power of coalitions and consistent messaging. These efforts could pave the way for systemic change, particularly when equity becomes the guiding principle in decision-making. The panellists expressed optimism that such shifts are achievable, provided there is sustained collaboration among diverse stakeholders.



Clockwise from left to right: Dr. Safa Fanaian;  
Dr. Arash Fazli; Mr. K. J. Joy; Dr. Vishal Narain and  
Mr. P. S. Vijayshankar.









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