

Liquid Dynamics: Accessing Water and Sanitation in an Uncertain Age

From STEPS Working Paper 42: Liquid Dynamics: Accessing Water and Sanitation in an Uncertain Age - Symposium Report

STEPS briefing 42

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Credits

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About the STEPS Centre

The STEPS Centre (Social, Technological and Environmental Pathways to Sustainability) is an interdisciplinary global research and policy engagement hub uniting development studies with science and technology studies. We aim to develop a new approach to understanding, action and communication on sustainability and development in an era of unprecedented dynamic change. The STEPS Centre is based at the Institute of Development Studies and SPRU Science and Technology Policy Research at the University of Sussex with a network of partners in Asia, Africa and Latin America and is funded by the Economic and Social Research Council. Find out more: www.steps-centre.org

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The Liquid Dynamics Symposium in November 2009, hosted by the STEPS Centre, brought together people from disciplines including water resources, sanitation, health, and climate change, to address issues of sustainability and social justice in water and sanitation. "Liquid dynamics" is a term used to capture how the social, technological and ecological

dimensions of water and sanitation interact, and how these interactions are shaped by uncertainty, risk, politics and power.

By critically examining the challenges of uncertainty, dynamics, governance, and learning/appraisal in key policy areas such as climate change, urbanisation and water and



Water sanitation. India. Photo: © Photo: World Bank / Curt Carnemark

sanitation governance, the organisers hoped to explore alternative pathways to meet the needs of the marginalised in a sustainable and just way.

Four broad themes formed the focus of the presentations and discussions at the Symposium:

- Climate change and uncertainty
- Meeting the challenges on the peri-urban fringe
- Sanitation and disease ecologies
- Technology, access rights and uncertainty

The Symposium identified some important challenges in those areas for the provision of water and sanitation for poor and marginalised people.

“Our understanding of the impact of climate change on water is still growing”

Key questions for water and sanitation Climate change

Climate change studies suffer from a lack of communication across disciplines, and the scientific understanding of the impact of climate change on water – such as long term changes in precipitation patterns – is still evolving. The climate change community has not paid sufficient attention to the significance of water for agriculture and other systems. As the climate changes, it is likely that there will be an increase of risks, intensity of variability and more extreme events, and it is critical to address the capacity of institutions and individuals to respond to unexpected events. What are the practical, policy and management implications of such a dynamic landscape, where uncertainty becomes a key issue?

The peri-urban

Peri-urban challenges might be even greater than that of climate change, as the rate of urbanisation is rising, and over a third of urbanized people live in slums. A mere 1% of aid is targeted towards urban slums, and sanitation is consistently neglected. The growth of African cities is related to population growth, not to rural-urban migration – there is a “crisis feel” to the situation, and hence governments have not typically reacted by putting in the infrastructure to serve new urban populations. On the contrary, governments are developing policies to try to stop urbanization, rather than deal with it, because if you offer the services, you provide an incentive for migration.

Urban and peri-urban water and sanitation issues are closely linked to the informal sector, and there are blurry lines between legality and illegality, where some participants consciously opt out of the formal system. How do poor people cope with the lack of (or insufficient) services? How can sustainability be achieved in so-called “transient zones”?

Sanitation and disease ecologies

Water and sanitation debates tend to be framed in technocratic terms that are separated from on-the-ground realities. How do the advocates – researchers, practitioners and policymakers – for water and sanitation issues work to integrate “ground-level” issues into mainstream policy? Advocacy is the art of convincing others; so which arguments for sanitation and hygiene are successful?

If policy is the interplay between institutions and ideas, how do we go about shaping policies? Simplicity and clarity are important. Community Led Total Sanitation is an example of this. CLTS helps people to reach their own understanding of the consequences of defecation practices, and triggers collective action to use local resources to construct toilets and change behaviour. But how resilient/sustainable is this approach over time?

Technologies, access rights and uncertainty

There is often a broad array of choices in setting up water and sanitation infrastructure, ranging from traditional technology to structured coherent technology. For example, are treadle pumps or large-scale canal systems more suitable for the Nile Delta? How do we link the physical nature of water resources with technical architectures and institutions and human behaviour? In terms of water sharing arrangements, for instance, role-playing games can be used to create a space for water users themselves, rather than experts, to reflect critically on issues of sharing, use rights arrangements and technological designs. The patterns of water distribution within and between systems and sectors represent a real challenge, as distribution is very difficult to do uniformly. The question of how we should we design water distribution, taking into account human and institutional aspects, remains a challenge.

Finally, we need to interrogate the notions of “sustainability” and “risk” in relation to access to water and uncertainty. For example, some people say that we need 25 per cent more water to feed the world, whereas others argue that we need to reduce consumption by 25 per cent to protect the ecosystem. What are the risks, and who is carrying the burden of risk?

“Often, rights of access to water and sanitation emerge through struggles”

What kind of societies do we want to build through our water policies? Often, rights of access to water and sanitation emerge through struggles; people don’t come to think of access as a right before mobilising and making demands. Rights are not static. Moreover, how do public policies match users’ needs and preferences? A major challenge is to link and aggregate multiple preferences (e.g. reliability, cost, quantity and quality).

Peri-Urban Challenges – the Chinese model

In China, the government is pro-urbanisation, and sees it as a way to deal with environmental and poverty problems. Converting land from rural to urban purposes provides income for the government and private sectors through land transfers, with infrastructure. There are also crucial linkages to climate change: most of this development is happening on the coast, which is vulnerable to rises in sea level.

Key issues for water and sanitation

- **Climate change:** the impact of climate change on water and sanitation needs more attention. Institutions and individuals will need to change to be able to respond to increasing risk and uncertainty.
- **Peri-urban challenges:** how can we find sustainable solutions to the challenge of water and sanitation in peri-urban areas where formal and informal structures co-exist?
- **Sanitation and disease ecologies:** How can people’s sanitation realities, particularly in the rural areas, be dealt with in a sustainable way, and what is the potential of community-led solutions?
- **Technologies, access rights and uncertainty:** How do we find ways to better deal with ecological uncertainty both through technological structures and institutional arrangements, to ensure people’s fair access to water?