Understanding, engaging, communicating and influencing

The STEPS Centre's research engages with both academic audiences and policy-makers and practitioners, in offering practical recommendations as well as designs for new tools and procedures. We also aim to provide a hub for global debate and reflection on the framings, values, implications and shortfalls, both of current policy approaches and alternatives.

Case 1: Rethinking appraisal, planning and policy – the case of building large dams

Problems of water scarcity, under-development and poverty are typically framed in highly specific ways, such as to reduce ambiguity and privilege the benefits of large dams. Decision-making is reduced to a simple balance between the rights of the majority (or nation as a whole) pitted against the rights of a small minority (those displaced by the dam), who are asked to sacrifice their interests in the face of this greater good. Appraisal techniques, such as cost-benefit analysis, focus narrowly on the large dam project as the single route to progress, to the exclusion of alternatives. The risk-based characterisations of such appraisal approaches fail to account either for uncertain dynamics (e.g. changes in river flow) or for ambiguities, as planners and local residents, for instance, frame dynamics and their possible outcomes in different ways. Thus planners' conceptions of water scarcity may conflict with dryland farmers' and pastoralists' understandings of ongoing water fluctuation, and the strategies they have developed for living with it.

More reading

Pathways to Sustainability: an overview of the STEPS Centre approach, by Melissa Leach, Ian Scoones and Andy Stirling (2007)
ISBN – 13: 978 185864 656 1

For other titles in this series (agriculture, water, health, dynamics, governance, designs) see: www.steps-centre.org/publications

Credits

This briefing was written by Melissa Leach and edited by Julia Day.

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

Contact us

STEPS Centre, Institute of Development Studies, University of Sussex, Brighton
BN1 9RE, UK
Tel: +44 (0)1273 606261,
ask for Harriet Le Bris
Email: steps-centre@ids.ac.uk
Web: www.steps-centre.org

Institute of Development Studies

University of Sussex
SPRU – Science & Technology Policy Research

STEPS centre

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Pathways to Sustainability: the STEPS Centre approach

From STEPS Working Paper: Pathways to Sustainability: an overview of the STEPS Centre approach

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How do we deal with the spread of HIV/AIDS or avian 'flu? How can farmers in dryland Africa cope with the challenges of climate change? How do we address water and pollution problems in rapidly-growing Asian cities? Who benefits from genetically-modified crops? Today's world is experiencing rapid social, technological and environmental change, yet poverty and inequality are growing. The STEPS Centre seeks to grapple with two of the central challenges of our times: linking environmental sustainability with poverty reduction and social justice, and making science and technology work for poor and marginalised people.

Making sense of a dynamic world

Today's world is highly complex and dynamic, with interacting social, technological and ecological processes, many uncertainties, and often conflicting understandings and priorities amongst different people.

Chad, Iridimi refugee camp / Sven Torfinn / Panos

Environmental conditions are changing fast, as water, land and other ecological systems interact with climate change and new patterns of disease. Scientific and technological developments proceed ever faster, while social systems change rapidly, linked to population growth, urbanisation and market relationships. These dynamics are, in turn, driven by shifting patterns of mobility – of people, microbes, ideas and technologies – and globalised economic change, as some areas of the world transform, while others remain in deep poverty.

All this raises major policy and development challenges. As technology and economic growth bring wealth for some, those living on the margins - in overcrowding, pollution, ill-health and hazard – suffer the fall-out. Models of planning, innovation, and regulation models need to be rethought in order to work in dynamic settings and respond to poorer people's perspectives, grounded in their everyday lives.

No simple blueprint

Dynamic social, technological and ecological processes interact in different ways according to local settings. So simple blueprints, technological fixes, or the transfer of technologies and regulations developed elsewhere, are unlikely to work - and often create further problems.

Although far from being new phenomena, systems dynamics are often ignored in policy approaches for development and sustainability. Conventional approaches, rooted in standard thinking about equilibrium, often assume models developed for one controlled, managed setting will work in others: exported from the developed to the developing world, or from the laboratory to the field. These approaches often make wider assumptions about the goals of 'development', 'sustainability' and a singular path to 'progress'. Yet emerging backlashes – from nature, from social movements, from politics – reveal widening gaps between standard policy approaches and dynamic systems.

Incertitude and framing

Dynamic systems and contexts involve various forms of incertitude, whether it be risk (where probabilities amongst possible outcomes are known), uncertainty (where probabilities cannot be assigned), ambiguity (where there are different, incommensurable views of outcomes) or ignorance (where we don't know what we don't know). Conventional analysis and policy approaches are well-attuned to handling risk, but are inadequate where these other kinds of incertitude prevail.

Furthermore, different people understand or 'frame' dynamics, and value goals and outcomes, in different ways.

Systems therefore need to be seen both as objective – existing in a material world – and as open to multiple, subjective framings – for instance from stakeholders – researchers, regulators, NGOs or poorer women and men, for instance - or disciplines - social, physical or life sciences.

Sustainability trade-offs, politics and power

A crucial part of understanding systems dynamics, especially in debates about sustainability, is to see how their properties respond to both transient shocks and enduring stresses.

Generally, '¬sustainability' refers to being "capable of being maintained at a certain rate or level". But this does not address contested framings of systems dynamics and goals. For this, we must highlight the specific implications of 'Sustainability', referring to properties valued by particular social groups or in the pursuit of particular goals.

This distinction is central to the STEPS approach to understanding and designing pathways to sustainability. We argue that Sustainability must be defined in normative terms, linked to poverty reduction and social justice, and to ways different groups define these goals in particular settings. Rather than singular notions of 'progress' in relation to environment, technology or development, we increasingly face situations in which there are many possible Sustainability goals, and multiple pathways to reach them. These are often contested – yet policy and management approaches often do not take systems dynamics, multiple perspectives and contested Sustainability goals into account (See Case 1).

The centrality of governance to pathways to Sustainability lies at the heart of the STEPS approach. Political and institutional relationships, including those of power/knowledge, must take centre-stage, as these shape which pathways come to dominate.

India, Maharashtra anti-dam protestors / Karen Robinson / Panos

Our work and projects

The STEPS Centre's work cuts across three domains - food/agriculture, health/disease, water/sanitation - and three themes – dynamics, governance and designs - and brings together natural and social science. Our research:

- reveals the diverse understandings of systems goals, properties and dynamics held by different institutions and groups
- analyses how particular perspectives come to dominate, and how they play out in politics, policy and management
- exposes the effects and implications - for linked social-technological-ecological processes, and for the livelihoods and well-being of particular groups of poorer, marginalised people
- challenges institutional and political relationships and forms of power/knowledge that contribute to unsustainability and social injustice
- suggests alternative approaches that facilitate the negotiation of pathways to Sustainability.

Our task is to map out what works in different circumstances, and in relation to different systems, in order actively to promote pathways to Sustainability and social justice in different settings, north and south.

The STEPS Centre's first set of projects, with partners in Africa, Asia and Latin America include: investigating maize and farming system dynamics in African areas affected by climate change; urbanisation and sustainability in Asia's growing cities; drug and seed regulation in China and Argentina; risks and uncertainties in areas of rapid technological advance; and procedures for addressing epidemics.

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