

STEPS Centre Launch
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Unprecedented change

We live in an era of unprecedented change. Changes in environment - as water, land and other ecological systems interact with climate change and disease ecology. Changes in science and technology - with scientific advance and the spread of technologies shaped by new and often highly globalised patterns of investment and information. And changes in social systems - population growth, urbanisation, markets, increasingly mobile people and ideas and shifting inequalities - as some places transform, while others remain in deep poverty and conflict - or become poorer.

Current global challenges in this dynamic world have intertwined social, technological and environmental causes and effects. For instance, the shifting interactions between humans, animals and food production technologies are triggering new diseases such as avian 'flu; can this be managed without spiralling poor, poultry-dependent farmers further into poverty?

Rapid economic growth and record investment

Rapid economic growth in the Asian cities that are becoming knowledge industry hubs, such as Bangalore, has its fall-out in the expanding peri-urban city fringes, neither urban nor rural, yet both. These are the conditions in which a growing proportion of poorer people around the world live; with farming livelihoods and health affected by pollution, hazard, overcrowding, pressure on infrastructure and water supplies, poor sanitation, and vulnerability to climate change. What does sustainability mean here and how can it be achieved?

In addressing challenges of environment, technology and poverty the good news is that we seem to have entered an unprecedented era of interest and investment - in the UK, and internationally, with many new public, private and philanthropic funding opportunities.

Conventional policy failing

Yet problematically, conventional policy approaches compartmentalise solutions by sector treating health, agriculture and water separately - and by discipline - often failing to integrate the technical and the social. These policy approaches are often driven by underlying assumptions that the world is stable and predictable, with problems reducible to calculable and manageable risks, rather than inherently dynamic and uncertain.

And they often offer universal solutions – single, 'one size fits all' pathways to progress, silver bullets for poverty reduction - with less appreciation of diverse contexts and that different people understand or 'frame' problems, and hence solutions, in very different ways. As a result, current approaches often fail the poor and risk failing altogether. Silver bullets are missing their targets.

Water scarcity, for example

Take the so-called crisis of water scarcity: Better, bigger, more efficient technologies can, it is argued, be engineered to respond before water runs out. Hydrological projections of need – for urban consumption or irrigation development, for example – provide the basis on which grand schemes are designed, whether big dams, river diversions, catchment transformation, piping or storage systems.

Yet in the dry zones of Kutch in Gujarat, India, farmers are concerned with water for livelihoods; to 'get by'. They discuss scarcity in very different ways from state planners and corporations. There are multiple scarcities – important to women or to men, for instance - depending on the place, the time, and the purpose to which the water is being used. There is much uncertainty and numerous ways of responding adaptively to the situation. There is not one solution, but many. And the issue is not so much about

absolute amounts of water, but its distribution - who gets access to the water, and when. It is not that engineering science cannot contribute, but their contributions need to recognise the many possible pathways of development, how different pathways are valued by different people and lead to different goals, amongst which choices are political.

One could cite many other examples. Biotechnology-engineered drought resistant seeds that aim to solve hunger in drought-stricken areas, but that miss opportunities to build on farmers' own soil and crop adaptations, geared to the farming and land degradation problems they are experiencing.

Backlashes

Or the emergent backlashes to global disease eradication programmes. Backlashes from nature, as in new antiretroviral drugs to solve HIV-related health problems that interact with disease ecologies, unregulated markets and social change to create new and devastating resistances... or backlashes from politics, as in the Gambia where, partly in response to the singular, hegemonic power of the drug-focused AIDS response, the president has derailed the programme by promoting his own herbal cure.

New approaches urgently needed

What is urgently needed are new, interdisciplinary approaches to understanding and addressing such situations that combine an understanding of social, technological and environmental processes; that take uncertainty, multiple perspectives and goals and power relations seriously.

We need new approaches that challenge institutional and political relationships and the forms of power/knowledge that contribute to unsustainability and social injustice. We need alternative approaches that involve poorer people themselves in negotiating pathways to Sustainability that meet their own goals.

STEPS Centre research

Developing and applying such approaches to real-world challenges is what the STEPS Centre, as a new global research and policy engagement hub, intends to do. Our work links theory - in understanding dynamic patterns of change, and their governance - with practical solutions, including designing new appraisal methods, tools and procedures that support poverty reduction, social justice and sustainability.

We aim to map out which combinations of theory and practical tools are appropriate in different settings, for different issues. Working with core partners and wider networks of scientists, decision-makers and practitioners, we are embarking on a first set of two-year projects that cut across our core domains of food and agriculture, health and disease, and water and sanitation, and that will iterate with the centre's theory and design work.

These projects focus on:

Crop, disease and innovation pathways in East Africa

Focusing on dryland Kenya and on the significant staple crop maize, this project will explore the dynamics of farming system change and human health in areas affected by increased rainfall variability linked to climate change. It will explore the diverse ways that farmers and national and global agricultural researchers frame and respond to emergent challenges, whether through local crop, soil and water adaptations or engineering drought-resistant maize strains.

Urbanisation and sustainability in Asia's growing cities

On the expanding fringe of a major Indian city, this project focuses on the conditions that a growing proportion of the world's poor and marginalised citizens will inhabit in decades to come. We will explore technological, health and environmental flows and sustainability challenges such as overcrowding, sanitation, urban farming in polluted areas, and the potentials of innovation in both socio-technical systems and institutional arrangements to build pathways to Sustainability.

Rethinking regulation in dynamic contexts

In Latin America and China this project will focus on specific cases of drugs and seeds, addressing the gap between current assumptions about regulation - based often on the norms of OECD countries - and the more complex realities in diverse, dynamic contexts. It will explore the interactions, between formal and informal regulation, that emerge to fill the vacuum, whether based on citizen action and social networks, everyday means of getting-by, or semi-legal activities, and the scope these may offer to build alternative regulatory pathways that work for Sustainability.

Risk, uncertainty and technology

In India, we will investigate how different institutions and groups frame and respond to the risks and uncertainties presented by rapid scientific and technological advance, in pharmaceuticals, vaccines, crop biotechnology, and nanotechnology. Through both focused case studies (for example of genetically-modified crops) and through a wider series of exchange visits and joint workshops between researchers and practitioners from India and the UK supported by a grant from the UK-India Education and Research Initiative. We will seek to build a more deliberative and reflexive approach to considering different options for addressing uncertainties.

Epidemics, livelihoods and the politics of policy

Changing patterns of land use, interactions between humans, livestock and wildlife and new social relations have seen the emergence of a series of new infectious diseases, amidst the new global politics of international health. As TB, HIV/AIDS and malaria are joined by new diseases such as SARS and avian flu, we will focus on understanding these interactions and on procedures for addressing epidemics that support, rather than compromise, the livelihood needs of poorer people and wider principles of social justice.

What makes STEPS different - in its approach to these projects and more generally?

- Social and natural scientists working together
- Bringing development studies and science and technology studies together in a new 'pathways' approach to addressing interactions between social, technological and environmental change
- Our interactive approach to research, involving citizens and decision-makers at all levels
- Our reflexive approach, encouraging awareness of one's own perspective and how it affects action
- An adaptive approach to dealing with uncertainty and building resilience
- A bottom-up perspective building on the knowledge and perspectives of marginalised people
- Linking research and communications with multiple participants

Collaboration

The Centre's challenges are huge, and key to meeting them will be working with partners and linking the many people and institutions around the world with valuable thoughts on parts of these agendas together; creating space for conversations across established boundaries that might not otherwise happen. This is why we see STEPS as a global hub - a place for debate and sharing - more than a conventional research centre.

Above all, the research that the STEPS Centre is embarking on, and the approach it is taking, depends on involvement of people from diverse backgrounds, in diverse positions. If you are interested in such global challenges as the interactions between environmental change and poverty reduction, the regulation of new technologies or the health consequences of rapid urbanisation, we invite you to engage with us in this ambitious and exciting journey to understand and support pathways to Sustainability.