



Addressing Tipping Points for a Precarious Future

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Commentary 7.4

Making Sense of the World

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[-] Abstract and Keywords

Ideally there is a world of physical processes and socio-economic analyses and actions which are progressive and predictable in the face of possible tipping points. In practice, the science and evidence base are incomplete, and the necessary long-sighted leadership woefully lacking. Mental constructs guide our interpretations of possible futures and ways of getting there. Such maps are culturally determined and connect to the values of the groups through which we relate. As creatures of habit, changing our ways takes time and persistent leverage. This process is made more difficult if the outcomes of actions are geographically and politically separated. Community-based adaptation can make inroads so long as there is appropriate capacity and trust building and targeted and reliable donor aid.

Keywords: tipping points, mental maps, community-based adaptation, inequality, privilege

We all use mental maps and various models to make sense of the world, and understand how the different elements relate to each other. Some of these models are based on close observation of cause and effect, while others rely on a looser set of assumptions. In the first case, the biophysical world provides many settings in which we can be fairly sure that one set of actions will produce a given result. For example, planting a belt of trees will provide a sufficient windbreak for crops, animals, and pastures on the leeward side, thereby significantly increasing their productivity.

But in many other cases, particularly where people and decision-making are involved, we have to work with far looser connections, and less confidence in cause and effect. As a policy-focused research centre, the International Institute for Environment and Development (IIED) works with a 'theory of change' that is based on a set of assumptions around the importance of well-crafted information, ideas, and evidence. We seek to address what we would like to believe to be a benign, far-sighted political leadership, ready to listen and act on sound evidence, as part of a

government responsive to the needs of citizens rather than narrow self-serving interests of particular lobby groups.

In practice, we recognize that many of these assumptions are only partially true and consequently we need to adapt our activities to cope with the existence of short-sighted politics, psychological denial, and the power of certain interests to both contest sound science and ensure government acts in their favour (see 6.7). We also recognize that government is not the only actor that counts, and hence the importance of working through citizen engagement, and encouraging competition amongst business leaders to show stronger sustainability credentials.

(p.281) Many of us imagined that in Copenhagen in 2009, world leaders would make bold, courageous choices in favour of cutting greenhouse gas emissions, putting aside various biases for the benefit of humanity. We were wrong. We had failed to factor in the lock-in inertia in our economic patterns, the interests spearheading our political systems, and the unwillingness of our politicians to take long-term decisions that might bring short-term electoral costs.

Mental models are clearly important in helping us debate the choices we face as global citizens, and the consequences of choosing a given pathway. Our readiness to accept a particular vision of the world is based on various factors, beyond rational acceptance of evidence. Kahan (2012) shows that adherence to a particular social group and its associated values may be more important than a careful weighing up of scientific arguments. He notes that people tend to filter out information and attitudes that would tend to drive a wedge between themselves and their peers (see also 3.2).

The study of global environmental change offers plenty of room for close observation of the biophysical and the human dimensions, as well as their multiple interactions. Communicating the complexity of global environmental change has been a big challenge, for which the concept of 'tipping points' has offered a valuable metaphor (see 3.1 and 7.1), although it brings its own baggage.

There have been key moments in recent and more distant history when the pattern of ideas has undergone major shift and re-adjustment. Such movement does not happen all at once. Historically, we can point to Galileo and Copernicus whose ideas and writings confirmed a radical shift in people's conception of the Earth's place in the universe; or to Hutton and Darwin, for their proof of the dizzying length of time that must have passed for particular geological features to have been produced, and for the slow painstaking process of evolution to generate such marked differences in animal and plant varieties.

More recently we have seen acceptance by governments and publics of the link between smoking and lung cancer, which has led to smoking bans in public places and controls on advertising. On the environmental front, one of the key insights of Barbara Ward, founder of IIED, has now started to take hold, 30 years after her death. This is that the cumulative actions of individual people and nations can collectively render our planet Earth unfit for human life. Having seemed limitless in scope and scale, this planet is showing its biophysical limits. In a world of scarcity and limits, Ward **(p.282)** argued that it will be vital to address inequality, and provide means to privilege the needs of the many over the wants of the few.

Social theorists suggest that it can take 30–40 years for new ideas to become accepted and integrated as the new norm. Humankind exhibits a wide range of responses to new thinking – from denial, argument, and resistance, to broad acceptance, integration, and regulation (see

also Sara Parkin in Chapter 6.3). As creatures of habit, with considerable investment in tried and tested ways of doing business, it often takes great force to achieve changes in behaviour, given the inertia, cognitive capture, and the press of interests keen to keep things as they are. The forces pushing back on achieving change can be evermore potent when there is a mismatch between the politico-administrative unit and the scale of the problem, as we see with nation states grappling with global challenges yet constrained by domestic interests, sovereignty, and competition.

Climate change and development

At IIED, we have focused on building resilience to climate change, by strengthening existing mechanisms and introducing new ways to cope with change. Such actions are premised on the costs of preparation for hazards usually being much smaller than the costs of coping with impacts after the event, and on the value of local knowledge and expertise in understanding and responding to shifting local conditions. There is a growing body of expertise around community-based adaptation (CBA), drawn in part from research in the 1970s and 1980s on coping with drought and establishing early warning systems. The six annual international workshops on CBA organized by IIED have also now built up a global constituency of people and ideas, able to share learning and offer practical insights. Key elements from the field of building resilience include:

- Recognizing local rights and agency, to manage and control access to resources;
- Supporting diverse livelihoods, putting eggs into many baskets;
- Bridging local and modern science, in ways which recognize their complementary value;
- Supporting the revolution in ICT to maximize connectivity and access to information;
- Investing in social infrastructure and social learning, through building cooperation, trust, and mutual obligations; **(p.283)**
- Setting up safety nets, for food or income support, and establishing payments for ecosystem services;
- Building low-carbon collective infrastructure, especially for water, transport, and energy.

In Europe and North America, we have much to learn from adaptation and resilience in poorer countries. Our current economic models are pushing us in the opposite direction from resilience, leading to increased fragility in our economic and social infrastructure, through 'just in time' sourcing, long elaborate supply chains, few local connections, and eroded social capital.

Given the slow global response to cutting greenhouse gases, we now face the likelihood of a 3–4 degree rise in average temperatures by mid-century. Hence, adaptation will be critical to enable people to survive and hopefully prosper. Adaptation is not cost-free. While there may be multiple ways in which people cope with change, it tends to absorb resources that could have been used in other ways. Equally, it should be remembered that there are limits to adaptation. Language amongst donors and analysts asserts the availability of innovations which can bring 'win-win-win' solutions for climate adaptation, low-carbon mitigation, and pro-poor growth, sometimes referred to as the 'sweet spot'. Such optimistic language needs to be tempered by recognition of the fundamental unfairness of climate impacts affecting poor people and vulnerable countries most of all.

The Rio+20 summit was another opportunity to get our political leaders to focus attention on the challenges of sustainability. In contrast to COP15 (the Copenhagen climate change summit) in 2009, most observers had fewer ambitions for the outcome of such a global summit. With an outcome document with few if any commitments, even these low expectations were barely met. Our political leaders seem to be way behind many of their voters. The multilateral system is at a low ebb, but it is unclear how long the tide will be out. There is an absence of trust between nations, and the continued unhelpful dichotomy of developed versus developing countries, through the maintenance of the G77, no longer represents global reality and its greater complexity. International negotiation tactics are taken from the trade sector, with many country negotiators coming from a GATT and WTO background, where there is an emphasis on win-lose, rather than everyone contributing to a collective goal.

We hope that the next three years' work to draw up a set of sustainable development goals (SDGs), as agreed in Rio, could offer a better place to focus attention. The post-2015 agenda needs to be built up from below, and **(p.284)** to address the multiple priorities of low- and middle-income countries as well as bringing change to the consumption patterns of rich nations.

Reference

Bibliography references:

Kahan, D. (2012), 'Why We Are Poles Apart on Climate Change', *Nature*, 488: 255.

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