

## Governance for sustainability

Sustainable development is rapidly moving from the periphery to the mainstream of politics, business, and science. Over the past several years, a strong consensus has started to emerge that some of the major global problems can only be overcome through large-scale concerted action. Recent additions to the debate include the reports by the International Panel on Climate Change, the Stern Report on the economics of climate change, Al Gore's *An Inconvenient Truth* and, perhaps less known, the Potsdam Memorandum<sup>1</sup>. The latter communication was recently presented by a broad group of Nobel laureates and is titled "The Great Transformation." The statement pleads for fundamental changes in our economies and societies and asks,

Is there a "third way" between environmental destabilization and persisting underdevelopment? Yes, there is, but this way has to bring about, rapidly and ubiquitously, a thorough re-invention of our industrial metabolism—the Great Transformation. This is an awesome challenge, yet we have one comparative advantage over all previous generations: an incredibly advanced system of knowledge production that can be harnessed, in principle, to co-generate that transformation together with courageous political leaders, enlightened business executives and civil society at large.

Since 2001, an experiment in governance has been ongoing in the Netherlands that seeks to answer this call for a novel governance paradigm and strategy to deal with long-term societal change. The emerging new theoretical and practical results of 'transition management', offer interesting leads, ideas and insights for innovating science and policy for sustainable development. Transition management is being codeveloped in theory and practice by a broad network of scholars, policy makers, business and nongovernmental organizations (NGOs). Since its introduction in the Fourth National Environmental Policy Plan (NEPP) in 2001 (VROM,

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<sup>1</sup> See <http://www.nobel-cause.de/potsdam-memorandum>

2001), the experimental approach has been implemented for a sustainable energy supply, mobility system, agriculture, health-care and water management. Transition management is a coordinated effort to influence the speed and direction of large-scale processes of social change based on the concepts of social transitions and sustainable development (Loorbach, 2007; Rotmans, Kemp, & Van Asselt, 2001). The Netherlands has extensive experience with environmental planning and coordinated innovation policy and the country is characterized by close cooperation between research and policy communities. However, in spite of the achievements of Dutch environmental policy over the past few decades, several problems remained for which no solutions were available and all existing policy or market strategies and instruments were ultimately inadequate. Neither can by itself support a directed long term sector-wide change: such a process can only come about through combinations of top-down and bottom-up changes, and self-organization within civil society.

The unsustainability of our society lies in “persistent problems”—problems that are deeply rooted within our societal structures, involve multitudes of actors, evolve variously on different levels of scale, and require a very long-term perspective to understand, and presumably, to deal with effectively (Rotmans, 2005). Society is regularly confronted with the “symptoms” of these persistent problems such as energy crises, air and water pollution, environmental degradation, congestion, and ill health. Sciences traditionally try to understand or address these problems through disciplinary analysis and the formulation of specialized solutions, but it appears that with each iteration the extant dilemmas become more complex and unmanageable.

Let us consider the mobility issue where traffic jams and automotive air pollution are targeted by measures designed to increase road capacity or to decrease emissions. Although such approaches generate incremental improvements in the short-term, they foster predictable

increases in mobility that undermine the improvements and ultimately lead to more congestion and pollution. From this perspective, sustainable development implies breaking with traditional routines and modes of thinking to overcome the inertia that limits our capacities for innovation and change. In other words, new expressions of the same policy approaches—whether grounded in government regulations or market incentives—are unable to correct the range of problems that have been created by earlier applications of these interventions.

To deal effectively with persistent societal problems, transitions are necessary—long-term continuous processes of change during which a sub-system of society fundamentally changes. Transitions are recurring patterns of sociotechnical change in culture, structure, and practices. History witnessed numerous transitions in economy, agriculture, mobility, and energy, but also in areas such as education, health-care, and social structure (Geels, 2004; Rotmans, Kemp, & Van Asselt, 2001). In these domains, relatively long temporal stretches of stability were alternated by relatively short periods of rapid change in a social system. Transition management is based on an evolving understanding of the patterns and mechanisms. Various scientific disciplines have contributions to make here, including ecology, biology, complexity science, and physics as well as the more socially and technologically oriented disciplines such as sociology, psychology, demography, socio-technical studies, and history. Internationally it is also recognized as an inspiring integrative concept, as it is slowly becoming part of the debate in complexity science, governance, ecosystems management, and innovation research. Although different disciplines tend to describe processes of transition using their own terminologies, discourses, methodologies and focus on transition processes at different levels of scale, a number of striking commonalities exist. Common points of agreement are:

- Transitions are the result of alternating processes of slow and rapid change leading from one relatively stable state of a system to another.
- Transitions are the result of co-evolutionary processes occurring at different levels of scale.
- Transitions are highly unpredictable and uncertain in terms of their speed and direction.
- Transitions are driven by changes in the external environment of a system as well as internal innovation.

The ambition of transition management is to generate processes of sustainable development that foster continuous social improvement in which economic vitality is in balance with resource use, social welfare, and cultural and societal diversity. Such “management” of transitions can by definition not be a top-down, imperious approach. The most influence we can expect to have over transitions is to shape their speed and direction due to the complexity and uncertainty that is inevitably involved in such processes. By articulating and debating desired future societal states and development paths, transition management emphasizes the inevitable need for normative processes and governance strategies. Sustainable development should not be seen as a blueprint or fixed goal, but rather as a guiding notion that enables both science and society to search for long-term collective goals and ambitions, to experiment in the short-term, and to regularly assess the progress that is being made.

Several principles grounded in transition thinking provide the theoretical basis for transition management. The starting point is that societal systems are analyzed in terms of

complex systems with typical behavior and mechanisms (for example co-evolution, emergence and adaptation). The basic tenets are:

- The need to simultaneously consider different domains (multi-domain), different levels of scale (multi-level), and different system states (multi-phase).
- The need to adopt a long term perspective (generally 25 years or more) as a framework for short-term actions.
- The need to employ a multi-actor approach.
- The need to utilize both backcasting and forecasting to reconcile uncertainties and to plan for surprises.
- The need to focus on social learning through learning-by-doing and doing-by-learning.
- The need to encourage transitions through the creation of (sociotechnical) niches.

Transition management is concerned with the functioning of the variation, selection and reproduction process at the societal level: creating variety informed by visions of and experiments for sustainability, shaping new pathways and gradually adapting existing institutional frameworks and regimes (Kemp & Loorbach, 2006). In this sense it is an example of what is called ‘reflexive governance’ (Voss, Bauknecht, & Kemp, 2006). During the past several years, experiments with this approach in both the Netherlands and Belgium have led to the development of a governance framework to structure implementation of the approach and the formulation of a number of “systemic instruments”. The framework distinguishes between different types of governance activities: strategic (informal processes of problem structuring and

envisioning), tactical (networking, coalition building, negotiating, developing new regulation, institutions and structures), operational (experimenting, new business development, involving consumers and citizens) and evaluation (monitoring, adjusting ambitions and agendas). These different types of activities occur simultaneously through transition processes and influence each other, but each has its own dynamics, types of actors involved and impact in different phases of transition (Loorbach, 2007).

The systemic instruments developed based on this framework seek to influence ongoing transitions by bringing together innovators in policy, business, science, and NGOs to redefine and reframe urgent social problems and their potential solutions. One example of such an instrument at the strategic level is the “transition arena” that encourages a group of innovative frontrunners from different organizational backgrounds to formulate an alternative vision of the future and to develop strategies outside of the existing (policy) regime on how to reach such a future. Through the “transition approach,” a common language and mode of communication is produced in order to aid strategy development and move toward concrete action. This procedure facilitates the creation of a community with shared goals and ambitions at a collective, system, level, while allowing for disagreement and competition on a more concrete and everyday level.

The concepts of transition and transition management are an inspiring basis for debate and action between scholars and different scientific disciplines. They also offer a fruitful context for cooperation and debate among scientists, policy makers, and business managers. As an analytical concept, it stimulates interdisciplinary analysis and offers a framework within which to discuss similarities, contradictions, and the relative value of various disciplines in contributing to different problems. In the Netherlands a broad transition research network exists, including economists, historians, political scientists, technology and innovation experts and consumption

researchers that each focus on particular aspects of transitions at different levels.<sup>2</sup> The possibilities for this area of activity to contribute to substantial methodological advances appear to be parallel to its opportunities to enrich social and policy practices. As a governance approach, the concepts of transition and transition management are being used to facilitate cooperation and coproduction between science and policy, as well as for the development and use of new scientific methods. New coalitions, strategies, and experiments involving pioneering scientists, “courageous political leaders, enlightened business executives and civil society at large” have been launched in its wake. This, in essence, is the definition of transition management as governance for sustainability: a collective process of learning-by-doing and doing-by learning based on an integrative way of thinking. Not to achieve fixed goals, but to gradually work towards shared ambitions through innovation, integration and transition. And the beauty is, that everyone can contribute in his or her own way.

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<sup>2</sup> See the Knowledge Network for System Innovations and Transitions at <http://www.ksinetwork.org>.