



Understanding institutional capacity for urban water transitions



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ABSTRACT

Transitions management (TM) is emerging as an approach to governing complex sustainability problems. Critiques point to the need to understand dynamics of system change, particularly, with regard to actor agency at micro and meso scales. This paper begins to address this scholarly gap by first, developing an analytical framework of the institutional context of a transition that recognizes forms of agency. Second, a method to apply the framework to empirical cases of urban water socio-technical systems to map their institutional context is developed. The results revealed: i) ways to identify problematic features of current systems and underlying cognitive and normative frames, to assist with envisioning and transition pathway development, ii) a method of system analysis that can target leverage points for strategizing transitions agendas and experiments, and iii) a dynamic description of the system to assist with evaluating TM interventions and monitoring transitions. By providing a systems analysis cognizant of contextual dynamics and targeted to the knowledge needs of TM activities, this analytical tool shows promise for improving TM through further empirical application and research.

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1. Introduction

There are significant environmental, economic and social pressures challenging the ability of many socio-technical systems to provide goods and services to human society. Sustainability scholars argue this is an indication that societal organization is unable to deal with the complex issues of sustainable development [1–3]. Many argue that fundamental governance change to mitigate and/or adapt to global environmental change is now needed [1,3]. Adaptive governance is proposed as a new form of governance for organizing society to ‘adapt’ to pressures [4–6] by reflexively considering multi-scale feedbacks [7], using participatory processes to facilitate social learning [8,9], and thereby enable social (as well as technological) innovation [2]. Transitions management (TM) has become a prominent contender as an operational form of adaptive governance [10–13]. The TM approach involves experimentation with alternative practices

(transition experiments), which inform multiple intermediate strategies (transitions pathways) toward possible futures (transition scenarios), linked to long-term sustainability goals and visions. However, the main strength of the approach comes through an emphasis on deliberative group dynamics (transition arenas) with key actors or frontrunners, to set up spaces for ‘safe’ experimentation and seed social learning [14]. By coordinating and aligning novel efforts to reinforce one another, TM scholars assert that when the opportunity arises these niches can compete with the incumbent regime, and adjust or replace governance arrangements [12,15]. It is argued such an approach establishes a process of governance ‘evolution,’ rather than revolution through imposition of new governance forms and the large-scale structural changes they entail [16]. Recent comprehensive reviews of the literature highlight that understanding how niches and regimes interact through a transition to produce new forms of governance is a key knowledge gap for TM [10,17]. Particularly, the assumptions that: i) careful selection of transition arena participants and appropriate facilitation will generate group dynamics to access expert knowledge, and

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develop collaboration between participants to design and commit to implementing experiments and agendas beyond the ‘safety’ of the arena, and ii) that the empowerment of frontrunners and coordinating role the TM process will provide the acumen to prepare for and influence/challenge the regime at an opportune moment.

This paper seeks to make a start on closing this knowledge gap by drawing on the intellectual resources of new institutionalism to study empirical cases of potential transitions. The paper first briefly reviews TM and its critiques, making the case that understanding the institutional context underlying societal transitions will provide the knowledge-base needed to address these critiques. Second, an analytical framework is developed to describe the institutional context of potential transitions. In describing the composition of the transition context using the concepts of institutions and actor agency, the powers of change vested within it can be captured to inform a TM intervention. Third, a mapping method to draw on tacit knowledge of experts to populate the analytical framework is designed. Finally, the framework is applied to empirical cases to describe and explore the dynamic institutional contexts of systems under transition conditions; identifying capacities and intervention points to support a TM intervention based on this knowledge. The paper closes with discussion of the heuristic capability of the technique and recommendations for further development of the approach.

1.1. Knowledge needs for transition management

Critics highlight the lack of explanatory power in TM with regard to three key areas of the approach: i) how transition arena participant's knowledge of the system under transition can be used to recognize ‘windows of opportunity,’ ii) how

participant's powers and influence on the system can be coordinated within the internal functional dynamics of transitions arenas, and applied to take advantage of the window of opportunity and progress transition agendas, and iii) the interplay between transition arenas and the regime, particularly in terms of the conflicts and power struggles that arise as niches fostered in TM gain the capacity to challenge the regime [17–19]. Emerging from these critiques are key questions surrounding the knowledge needs of system dynamics in transitions; what are the features and processes within the system under transition that a TM intervention needs to take into account? How can they be identified? Which need to be altered to ensure the system functions appropriately? And which could be influenced by TM activities to achieve this? Analysis of the system and sub-systems under transition is recognized as critical knowledge for all activity clusters in a TM cycle (strategic, tactical, operational and reflexive) [14], as illustrated in Fig. 1.

Within these different activity clusters of the TM cycle, the purpose of the systems analysis moves from one of system description (expert preparation/strategic), to diagnosing systemic problems (strategic), informing the design of interventions (operational), strategizing when and how they should be implemented (tactical), and monitoring the transition to inform the TM process and evaluate success (reflexive). This knowledge is also particularly important to enable a TM intervention to be tailored to specific sustainability issues and contextual conditions. Despite the critical knowledge provided by a systems analysis to inform the full range of TM activities in Fig. 1, the current process methodology [14,20], published empirical studies [12,21], and guidance manuals [22], offer little direction on how the suggested systems analysis methods can be used to generate this knowledge. To address the knowledge needs of

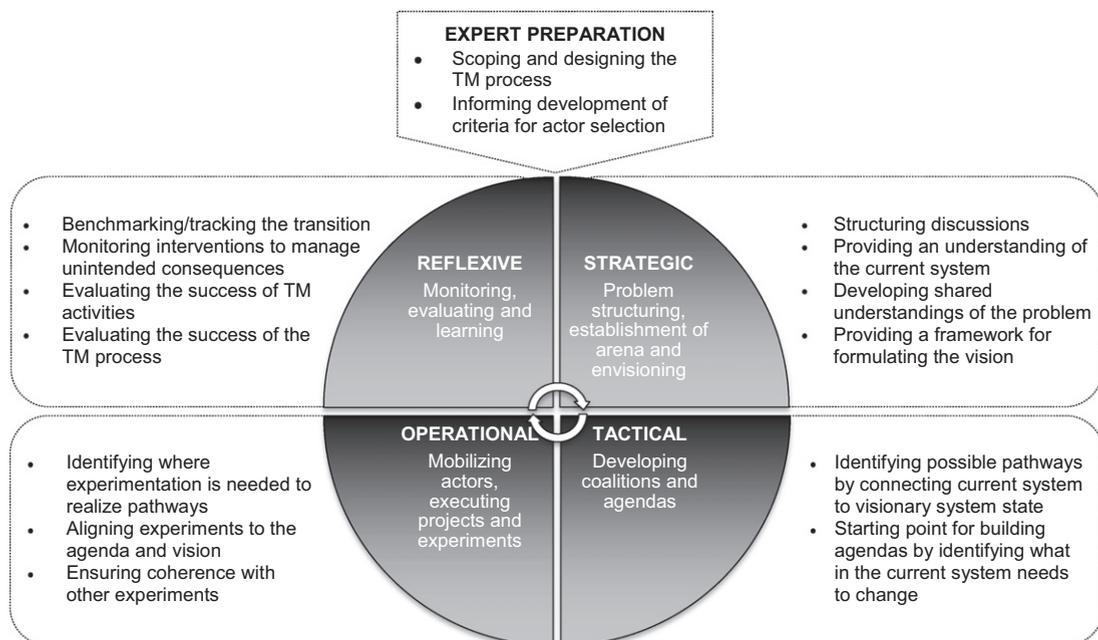


Fig. 1. Role of system analysis in TM activity clusters (adapted from Loorbach, 2010 [14]).

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