Triple helix organisations for transition in the Dutch public water management

Jan-Jaap Bouma and Nanny Bressers

The Dutch public water management is undergoing a transition to cope with effects of climate change. Scientific research is needed to facilitate organisational structures that contribute to the change to securing welfare.

In recent years climate change has sparked debates in the Netherlands on the use and types of energy. Most estimates of the effects of climate change on the Netherlands point at increased risks of sea level rise and increased discharge of rivers, resulting in increased flood risks. New water management policy makers therefore need to cope with the changing setting in which they operate. Recent water policy plans reflect this change in water management practices.

Transitions and organisations

These major change processes have been labelled ‘transitions’. A transition is a structural societal change to a more sustainable system which fundamentally changes structures, cultures and operating procedures in a sector or region (Rotmans 2003). The water transition has been said to consist of the change from controlling and fighting water to an approach in which water is accommodated within the country, for instance by periodic flooding or bringing back old canals in cities. Transitions usually consist of both intended change and emergent change, in which the development of innovations and the diffusion thereof can be part of both the intended process, when something was developed specifically to contribute to the change, as the emergent process such as when something was developed for different purposes or goals. In this situation diffusion means the intended and emergent spread and exchange of knowledge and innovation to other organisations.

New kind of applications of different forms of energy. Most estimates of the effects of climate change on the Netherlands point at increased risks of sea level rise and increased discharge of rivers, resulting in increased flood risks. New water management policy makers therefore need to cope with the changing setting in which they operate. Recent water policy plans reflect this change in water management practices.

The transition consist of switching from controlling and fighting water to accommodating water within the country.

Institutional isomorphism

The concept of institutional isomorphism can be separated in the population ecology perspective (competitive isomorphism) and the institutional perspective (institutional or adaptive isomorphism), which concerns the process of adaptation which results from the need of organisations to obtain political power and institutional legitimacy.

The latter has three types of mechanisms for institutional change. First is coercive isomorphism, in which pressure is exerted by an actor. Second is mimetic isomorphism, where isomorphism is based on uncertainties, because an organisation will adopt a certain innovation because they see another organisation as a model, due to their uncertainties about their own organisation. Third is normative isomorphism, which is related to the process of professionalisation.

The processes of isomorphism evoke institutional changes that may stimulate or hinder the impact of triple helix organisations in the diffusion of innovations of water management. The role of new and existing institutional arrangements can be explored and better understood by confronting the processes of isomorphism with the institutions in the field of water management. Institutional theory has mainly been used to study developments in a sector or country.

Institutional approach

Since the re-emergence of institutional economics in the 1970s, the role of contracts within transactions has been the main unit of analysis. Amongst others Oliver Williamson (1999) described in the importance of organisation within a market economy. Besides relative prices also organisational elements, as formalised in contracts, are taken into ac-
count. By introducing organisational and context dependent elements in economic theory, recent researches are broadening the institutional perspective on economic development. New water management approaches in the Netherlands and changes in knowledge development are strongly related to the design and use of different valuation process of water systems.

**Leven met Water**'s main goal is to develop innovative knowledge and innovations that contribute to sustainable water management.

Water system related valuation processes can be seen as forms of institutionalisation. Within contracts, norms, values and beliefs in the institutional environment of managing water systems are institutionalised. New approaches to water management rely on processes of institutionalisation. For institutionalisation of ideas of organisations a certain form of diffusion is required. In the concept of isomorphism two concepts are central for institutional change: innovation and diffusion. F. Boons et al. mention innovation as 'a new way of doing things', whilst diffusion 'refers to the adoption of this innovation by other organisations' (2000: 30). Innovation therefore is the change as developed within an organisation, while diffusion of innovation concerns the carry-over to other organisations or society (see Table 1).

**Living with water**

We studied the case of the organisation **Leven met Water** (LMW), which is Dutch for ‘living with water’. LMW should provide room for water, integrate social sciences and natural science and engineering disciplines, and develop and contribute to a knowledge infrastructure. Its organisation structure is tripartite. This means that it involves the government, the industry and the research establishments in a consortium of approximately eighty projects. LMW’s main goal is to develop innovative knowledge and innovations so as to contribute to sustainable water management. The transition concept, elaborated above, is therefore of great value to LMW. The appliance of the triple helix model is explicitly the scope of LMW. There is a need to explore the impact of the triple helix organisations used or designed in the scope of LMW along the four pathways to diffusion (see Table 2).

The first pathway is about exerted pressure by actors. It is unlikely for a network organisation such as LMW to be able to formally exert pressure on decision making actors, although LMW has been asked to advise on the core ideas of the upcoming Dutch policy documents such as those that are reported in the policy paper Nationale Waterplan 2009. This policy paper will most likely represent multiple ideas which correspond with water transition ideas. Informally and semi-formally, however, the influence can be even bigger, for example by signed intention statements by LMW partners, which have broader implications in society. Because actors from the Dutch state participate in LMW’s projects, the diffusion into governmental organisations can be achieved by informal pressure, exerted in a bottom up process within governmental organisations with participants in the program. Hence the first pathway is most definitely relevant for researching the carry-over of LMW.

The second pathway, professionalisation, can definitely play a role in the diffusion in this case. Because such a program offers detailed scientific and applicable knowledge of specialised subjects, diffusion can take place via the need for information among governmental actors, who use LMW’s knowledge and products to fill their needs. Another form of diffusion by professionalisation concerns the training and courses provided by LMW, both on program level and via projects which have education as an aim. Transitional knowledge can therefore be passed on to actors who were previously unaware of this knowledge. Therefore, the second pathway provides an important tool in researching the diffusion of LMW’s knowledge and products.

The third pathway concerns the uncertainties about organisations. The mimetic influence of LMW will mainly occur on the project level. For example the participation of citizens in decision making processes on spatial planning often brings along many uncertainties for governmental actors. Failed participation processes in the recent history might create a feeling that this time it won’t work either. However if it does work in a LMW project, it might change the way that an actor looks at participation processes. Next to that mimetic influence also comes from the successful demonstration of new forms of cooperation at the program level. Due to the example set by LMW cooperation between different types of actors may increase. In conclusion the third pathway proves to be just as relevant for researching the carry-over of LMW in society as the previous two.

The fourth pathway relates to competition. LMW’s projects have been selected in tender rounds, in which projects had to compete against each other for obtaining subsidies. Because of this the rounds selected the most suitable projects for representing LMW’s core ideas, in addition to the projects most promising in terms of cooperation between different actor types and cooperation between disciplines. Competition, therefore, created the most ideal circumstances for achieving a pro-

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**Table 1** | Interplay between innovation and diffusion, and intentional versus emergent

<table>
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<tr>
<th>Innovation</th>
<th>Diffusion</th>
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<td>Intentional Innovation-oriented actions (deliberate innovation)</td>
<td>Coercive isomorphism</td>
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<tr>
<td>Emergent Individual goal-oriented actions (non-deliberate or semi-deliberate innovation)</td>
<td>Competitive isomorphism</td>
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(Source: adapted from Boons et al 2000: 31)
ject portfolio with the best chance at diffusing into society. This organisational aspect of carry-over can prove essential. The fourth pathway is also highly relevant in researching the carry-over effects of triple helix organisations such as LMW.

**There appears to be a two-way traffic between the organisation and the theory. Both are reinforced by one another.**

In conclusion, the four pathways which were explained above, and tested against the case of LMW afterwards, prove to be essential tools in researching the carry-over effects of triple helix organisations in a context of valuation. There appears to be a two-way traffic between the organisation and the theory. Both are reinforced by one another. Organisational decisions such as selecting projects by tender rounds correspond with one of the pathways, whereas the pathways seem to be designed to research the carry-over of LMW.

The pathways can be used in further research to elaborate on the carry-over of triple helix organisations and the institutionalisation of this diffusion in water system related valuation. LMW may or may not prove to contribute to regulative, normative and cognitive elements of policy and society, and therefore contribute to transitional change. Different research trajectories can be set up on each pathway, in order to research the full extent of the appliance of the pathway on diffusion and carry-over processes. Institutional theory provides useful insights into understanding the processes of innovation of knowledge and the role triple helix organisations. Numerous new institutional arrangements (such as organisational structures, new beliefs and research traditions) might be identified and their impacts on society assessed.

**References**


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