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Policy evaluations for long-term transitions: a framework to monitor progress towards healthy water systems in the Dutch delta in 2027

Leon Hermans[1,*], Arienne Naber[1], Bert Enserink[1], Jorg Willems[2]

[1] Delft University of Technology, Faculty of Technology, Policy and Management, Delft, The Netherlands
[2] Delfland Water Board, Policy & Research Section, Delft, The Netherlands
*corresponding author. Email L.M.Hermans@tudelft.nl

Abstract

A transition towards green economies takes time and requires new policies and initiatives, and a style of governance that places more emphasis on learning and reflection. This requires, among other things, an ongoing evaluation of policies as they are being implemented. Challenges arise from the involvement of multiple actors, from tensions between accountability and learning, and from the complexity of socio-ecological systems. Consequently the formulation of a workable analytical framework for monitoring and learning is challenging. This paper reports an effort to develop such a framework for monitoring and evaluation of a water quality management plan that is currently being established in the area of Delfland, in the western part of the Netherlands. Insights from evaluation literature, adaptive policy analysis and process management are the basis for this framework.

1. Introduction

Transitions in socio-ecological systems typically take place over a longer period of time and require multiple changes on various levels. These include changes in institutional arrangements and in government policies. Impact assessments, policy analyses and decision-support systems may help to inform decision-making on such changes. However, given the complexities and the long-term planning horizons, such assessments cannot claim certainty.

This paper builds on the idea that, because of the uncertainties involved, ex-ante impact assessment should be continuously updated and revised. This serves as means to monitor policy implementation and to support learning from experience. Policy makers need to evaluate if they are still pursuing the right policies given new scientific insights, given the progress and success of policies under implementation, and given changed societal needs and preferences.

These continuous, ex-post impact assessments, which we will call policy evaluations in this paper, are not simply replications of the ex-ante assessments and appraisals. When it comes to the contributions that policy evaluations can make to learning, there are some specific challenges. These challenges, and how they might be addressed, are the subject of this paper, using a case involving the implementation of the European Water Framework Directive (WFD) in the western part of the Netherlands.

2. Challenges to learning from policy evaluations

Learning can be characterized by answering several questions. These include: Why is learning desired? Who should do the learning? What is the subject of the learning? For policy evaluations and learning, specific challenges are associated with each of these questions.

Why? – The accountability challenge
Two of the most common purposes for policy evaluations are learning and accountability. These two purposes are at tension, but in practice they often cannot be separated (Patton, 1997; Lehtonen, 2005).[1]

[1] See Hermans (2009) for a more in-depth discussion of this accountability challenge in policy evaluations.

When it comes to long-term societal transitions, and the role of specific policies therein, learning about the reasons for success or failure of policies is important. Such learning is needed most in the case of policy or implementation failures related to important issues. In practice, such learning is often tied to accountability issues. Who can be held accountable for failure, and who can claim responsibility for success? No-one likes to be held accountable for failure or report back about failing policies to legislative bodies. While using evaluations for accountability purposes inevitably leads to a more cautious approach , using evaluations for learning purposes requires a much more open attitude. Many of the actors involved in policy preparation and implementation are likely to take a defensive stance, defending their choices and actions in anticipation of eventual use of evaluation findings in political accountability discussions.

Who? – The multi-actor challenge

We live in a network society, and multiple actors are involved in transition processes in socio-ecological systems. Different actors may have different perceptions of policy problems and solutions, they may want to realize different and sometimes conflicting interests, and they may have different roles and resources to further these interests. Evaluating policies in such a multi-actor setting poses additional challenges (Van der Meer and Edelenbos, 2006; Hermans, 2008).[2]

If different actors in different roles are involved in policy processes and transitions, it is not necessarily clear who should be involved and who should take the initiative for evaluations (Levine and Savedoff, 2006). Also, it is not clear what the focus of evaluations should be. Different actors will have different perceptions, assuming different causal links and looking at different system components. For contested complex issues, these world views are likely to be incompatible (e.g. Schön and Rein, 1994). Whose objectives should be included, whose world-views should be guiding the analysis?

What? The complexity challenge

Socio-ecological systems are typically complex systems. There are many factors, everything seems to be related to everything, not all factors are known, and interactions between factors are characterized by non-linear patterns, delays and threshold effects (e.g. Scheffer et al., 2001; Olsson et al., 2004; Gysen et al., 2006). This creates an epistemological challenge that also exists for ex-ante assessments and appraisals. For ex-post evaluations, this challenge is generally framed by choices made during the ex-ante appraisals. This provides a basis from where to start, but also entails a risk. Choices and working assumptions may result in 'designed blindness' of evaluations (Friedman, 2001). On the other hand, redoing the complete analysis is unfeasible and undesirable, and revisiting some of the earlier assumptions may create feelings of unease among the policy makers and experts who were involved in making these choices.

3. The case of water management in Delfland

We have identified three challenges for policy evaluations in relation to socio-ecological systems' transitions. In the remainder of the paper, we will discuss how these challenges were addressed in the case of a transition towards a 'greener' water management in the area of Delfland.

Delfland is an area located in the western part of the Netherlands (see Figure 1). The densely populated area comprises urban areas, industry and glasshouses, and agriculture. In recent years, the actors in the Delfland area have been involved in the formulation of a joint plan as part of the implementation of the European Union Water Framework Directive. This plan should lead to a good ecological and chemical status of the main waters by 2027. It has been established in an official agreement among the main government agencies involved, which are the local municipalities (including the cities of The Hague, Delft and Rotterdam) and the water board of Delfland[3], and the plan has been accorded by stakeholders representing among others interests of local businesses,

[2] See Hermans (2008) and Van der Meer and Edelenbos (2006) for more details on this multi-actor challenge.

[3] The implementation of the WFD in the Netherlands is the joint responsibility of the various government agencies that share the tasks for water resources management on the regional level. In this regional level process, the water boards have been assigned the lead-role as coordinating agencies within their regions.

farmers and greenhouse horticulture, nature and recreation. As part of the plan, a scheme for annual monitoring was agreed, the results of which should feed into revised plans that are to be established in 2015 and 2021.

Figure 1. Location map of Delfland in The Netherlands

This scheme for monitoring and evaluation has to support both the demand for accountability as well as learning. Accountability is essential in order to ensure transparency among participating actors about the degree to which the parties keep to the initial agreement, but also to facilitate reporting back to the national government and ultimately to the European Commission about achieving the WFD goals in Delfland and the Netherlands as a whole. Learning needs to be part and parcel of the process too as the impacts and feasibility of many measures is still abound with uncertainty. These uncertainties are due to limits in knowledge about the system behavior, both in terms of the ecological processes in the physical water systems as well as the human processes in the economic and administrative systems.

4. Approach for the development of a joint policy monitoring and evaluation scheme

4.1 Theoretical basis underlying the approach

For the project, an approach was used based on three main analytical building blocks. First, building on evaluation methodology for single actor situations, a theory-based evaluation approach has been used. This means that a policy theory was used as main analytical framework for the evaluation. Following authors such as Chen and Rossi (1992) and Argyris and Schon (1996), a policy theory refers to the causal explanations that link policy measures to expected impacts on the policy system. A policy theory consists of different causal chains, which contain at least factors that describe the policy measures under evaluation, the relevant context factors, and how these are expected to influence the policy outcomes of interest.

Assumption-based planning and adaptive policy analysis contributed as second building block to the evaluation approach (Dewar et al., 1993; Walker et al., 2001). Here, the idea is to identify critical assumptions underlying the policy theory. Critical assumptions are assumptions that are both

important and uncertain. Using this notion enables one to select focal points for monitoring and evaluation, so-called signposts, and to identify threshold values related to these signposts, which provide triggers for corrective action or reflection.

Third, besides the analytical components, attention has been paid to appropriate process design. Here, design principles as formulated for performance management in the public sector by De Bruijn (2007) have been used as a basis.

4.2 Approach

These three theoretical pillars were translated into an approach that involves essentially three steps:

1. *Reconstruction of the policy theories of various actors*, using a comparative cognitive mapping method called Dynamic Actor Network Analysis (Bots, 2009), based on individual interviews with actor representatives. See Figure 2 for an illustration.
2. *Establishment of a shared policy theory, including critical assumptions, signposts and triggers.* Comparative analysis of the individual policy theories, discussion with actors and agreement on an aggregated, shared policy theory. Using DANA to support the comparative analysis in preparation of a joint workshop among actors
3. *Process design.* Inventory of opportunities and risks associated with the process aspects, and developing an agreement about the policy monitoring process and the use of its results in an actor workshop.

The implementation of the approach has been divided into two main project phases. The first phase consisted of a 'test-run' of the approach with the Delfland water board, while the second phase will consist of the actual implementation with all the main actors involved, in a truly interactive fashion. The first (test) phase was executed in 2009; the second phase will start in the spring of 2010. The first phase consisted of the execution of the three main steps through interviews and workshops with several participants internal to, or very closely associated with, the water board of Delfland.

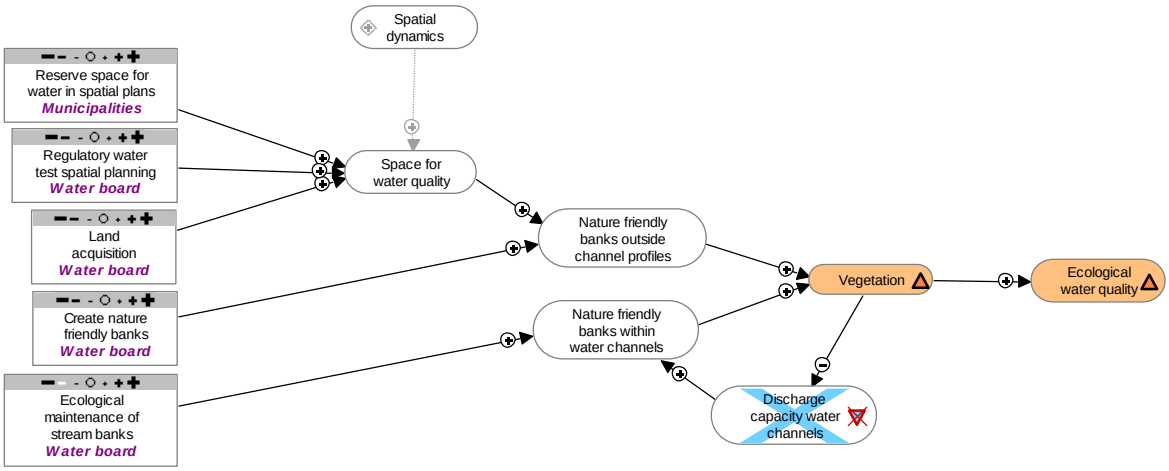

Figure 2. Part of a policy theory drafted using DANA software (for illustrative purposes)[4]

4.3 Expected benefits

The described approach to policy monitoring and evaluation was expected to yield some important benefits compared to the 'business-as-usual' case, where a policy monitoring framework would have been adopted as prescribed in the WFD process as coordinated by the Dutch Ministry of Transport, Public Works and Water Management, through several sub-river basin areas. This 'base-case' mainly

[4] Figure 2 has been inserted for illustrative purposes only, reason why a full legend is absent. In short, it shows a causal map, where arrows indicate causal relations between factors; '+'-signs indicate a positive causal relation, '-'signs indicate negative relations. Colours are used to indicate objectives or constraints. For further details on the interpretation of this map, see http://dana.actoranalysis.com

involves monitoring of indicators for the chemical and ecological state of selected water bodies by the main water management agencies involved. The expected benefits of the approach aspired to here cover three dimensions.

- Analytically: Identification of additional factors for monitoring, in addition to policy goal attainment based on the chemical and ecological state of water bodies. These additional factors would relate to the system factors that shed light on the processes through which policy goals are influenced, including human and economic processes. Also, factors that describe the most relevant external forces and pressures would be monitored. Finally, there might be a need to expand monitoring to include additional outcomes of interest, in addition to the goals explicitly described by the WFD. All this should support to the learning purpose and the relevance of the policy evaluation process.
- Related to the multi-actor setting: A more shared responsibility for monitoring beyond water agencies only, better reflecting the multi-actor character of the de facto water systems. Agreement and support from multiple actors for policy monitoring results in better and more monitoring data, more useful insights, and more effective uptake of monitoring insights in subsequent decision-making and implementation by the various actors involved. This should contribute to the acceptance of the policy monitor as a means to ensure learning, accountability and reciprocity among the parties involved.
- Adaptive and dynamic: A dynamic monitoring and learning plan: not only a monitoring framework, but also explicit plans and triggers to revisit parts of the framework, at certain times.

5. Results

Although the approach has only been tested in a mono-actor setting, some important insights have already been obtained.

The expectations mentioned under the first bullet above have been confirmed, as additional factors for monitoring have been identified, including 'signpost' variables related to critical assumptions. For instance, Figure 2 illustrates a critical assumption related to the expected spatial dynamics, whereby autonomous spatial development processes were assumed to pose chances to create 'room for water', to enable the construction of nature friendly (and space consuming) stream banks. Another critical assumption was that reduction of nitrogen (N), would be effective in reaching a good ecological status, as N, rather than P (phosphorus) was assumed to be the limiting nutrient for the aquatic ecosystems in the Delfland area. This in turn depended on assumptions related to relatively short water circulation times and possibilities to 'flush' the water system during dry periods with outside fresh water resources. Assumptions which turned out to be uncertain in light of recent national level policy debates.

It is now clear that the approach can be used in a single actor setting – it is practically feasible. Also, our experiences show that, even with a careful plan preparation process (which included several impact assessments), developing an evaluation framework along the lines of the approach sketched here offers additional insights. These are for instance related to the critical assumptions mentioned above. They are possibly due to an increased distance from plan preparation, possibly due to the approach. This suggests that, already one year after plan preparation, setting up an evaluation framework can help to update and further detail the impact assessment.

Also, discussion and preparation of the process components, even in a single actor test phase, revealed the close linkage between policy monitoring and evaluation and the development of more detailed implementation plans. This close linkage may seem self-evident as these are subsequent steps in the policy planning cycles, but still, it is important to note, given the known challenges with policy implementation in complex environments. Possibly, thinking about a policy evaluation framework may provide a camouflaged way to actually pressurize all involved into talking about detailed implementation plans – followed by execution.

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