

Frame of reference

In his [thesis Van Koningsveld \(2003\)](#) describes the Frame of Reference method aimed at structuring the end user-specialist interaction in application-oriented knowledge development. Effective interaction is needed to prevent or at least defer the seemingly inevitable divergence of the end user's and the specialist's perceptions on what is relevant knowledge (Van Koningsveld et al., 2003). Applying the method increases the probability that specialist research produces results that are applicable in policy development or practical application. Although the method was developed in the context of policy development, its applicability is much more generic.



Basic frame of reference template

To prevent or at least defer the seemingly inevitable divergence of the end user's and the specialist's perceptions on what is relevant knowledge the Frame of Reference method (Van Koningsveld and Mulder, 2004), a template can be constructed -in the thesis defined as the Frame of Reference- which may then be used to guide the communication process. Analysis of practical cases indicates that successful policy development involves a 'basic' Frame of Reference comprising explicit definitions of:

- a strategic management objective;
- an operational management objective; and
- a decision recipe containing a foursome of elements, viz.:
 1. a quantitative state concept;
 2. a benchmarking procedure;
 3. an intervention procedure; and
 4. an evaluation procedure confronting the operational as well as the strategic objective.

The communication process may be guided by assuming that *ideally* all elements of the 'basic' frame of reference need to be made explicit. An assessment of the elements that have *actually* been made explicit reveals so-called '*blank spots*', representing the remaining information needed to develop a successful and coherent approach. Filling in the 'blank spots' is an interactive process where, by means of in-depth discussion between specialists and end users, the elements of the 'basic' Frame of Reference are gradually filled in and sharpened until a satisfactory end result is reached.

Strategic management objective

Strategic management objectives provide the long term context for policy making and management. They are based on a vision on the natural and the socio-economic systems, their interdependencies and on the role of man therein. Strategic objectives tend to vary slowly. Nonetheless they do have a profound impact on the kind of policy making and management that is required, effective and acceptable. The historic development of water management in the Netherlands may serve as an example (cf. Van de Ven, 1993; Dubbelman, 1999; Van Koningsveld et al., 2008).

Operational management objective

The operational management objectives concern the concrete human activities meant to *handle* the interactions between the natural and socio-economic systems. As such, they constitute the implementation of the strategic objective. Operational coastal management objectives, for instance, are related to the status of values and interests in the coastal zone. As such the operational objective should explicitly indicate the temporal and spatial scales involved. It may take more than one operational objectives to cover all scales intended in the strategic objective.

Decision recipe

From the strategic and operational objective follows our view on potentially necessary and acceptable human interventions. A proper decision recipe for intervention coherently addresses the following elements:

Quantitative state concept

To enable objective and transparent decision making, the state of the system, or certain aspects thereof, needs to be described in an appropriate quantitative form. Which form is most useful in the decision making process is determined by the strategic and operational objectives, as well as by the other elements in the decision recipe. Practical effectiveness is strongly linked with knowledge of the system's behaviour. There is a wealth of literature on indicators, indices, etc. for the quantitative description of a system's state.

Benchmarking procedure

A benchmarking procedure is necessary in order to systematically and objectively determine when to intervene in the system. Intervention is required when a discrepancy between the current system state and a desired or reference state (the benchmark) exceeds some predefined threshold. To facilitate useful discussions, the current as well as the (implicitly) desired state should be made explicit, preferably in terms of the chosen quantitative state indicators. This element of the decision recipe often relies on measured or predicted trends in state descriptions, costs and benefits.

Intervention procedure

An intervention procedure specifies how we plan to intervene in (part of) the system in order to bring it to a desired state. It specifies not only the type of intervention, but also the method to determine its design. Knowledge of the system, in particular regarding physical processes, and how it responds to interventions plays a crucial role in this element. The design procedure should use the quantitative state concept as one of its primary building blocks. It should at least facilitate significant manipulation of the system's 'current' state, towards its desired state identified in the previous step.

Evaluation

The decision recipe and the effects of its application need to be evaluated. This evaluation should take place in the development stage of a measure (expected effects), as well as after some period of application (actual effects). First of all, one needs to assess whether or not the operational objective is being sufficiently achieved. If this is not the case, the decision recipe may have to be changed. If the operational objective is satisfactorily achieved, it is still necessary to evaluate the project from the wider perspective of the strategic objective. This may trigger modifications in the decision recipe, but it may also result in an adaptation of the current operational objective, or the formulation of a new one.