

The Brief in brief

The need for conservation is increasingly justified with the concept of ecosystem services. For these ecosystem service arguments to be effective, they need to be understood and placed in the context where decisions are made. This brief outlines a broad classification of governance implementation mechanisms (referred to here as governance “modes”) that was developed within BESAFE to aid understanding decision-making in relation with ecosystem services. Four different modes of governance are identified: (1) hierarchical governance; (2) scientific-technical governance; (3) adaptive collaborative governance; and (4) governing strategic behaviour. Although these different modes of governance usually co-exist, decision-makers and decision-making situations can place stronger emphasis on some rather than on others.

Intended audience

This brief should help to support those designing, evaluating or participating in governance of ecosystem services or involved with relevant empirical scientific research.

Topic

(i) Expectations from the ecosystem services approach

There is an expectation that the ecosystem service approach to biodiversity conservation would constitute a basis for policy design and be integrated in governance at all levels. New knowledge about ecosystems and their value to humans is assumed to be taken up in decision-making and improve our decisions concerning biodiversity and natural resources.

Value information, in particular, is considered to be needed in ecosystem service oriented decision-making. The idea is that once the value of different ecosystem services is understood, trade-offs can be balanced and ecosystems can be managed sustainably, although this may or may not be appropriate for biodiversity conservation.

Decision-making and governance systems might require different knowledge or may work in ways that may impede taking up the new ecosystem service knowledge [1]. Thus, to facilitate better decision making, there is a need to understand the assumptions and interactions within the governance system; the ways in which knowledge feeds to decision-making, and how different arguments for biodiversity conservation generate effects. In other words, we need to understand how ecosystem services are governed.

(ii) Modes of governance

Mode of governance refers here to different governance implementation mechanisms – those components of the governance system that reflect the different ways in which effects are generated and decisions are made. From examination of biodiversity and environmental governance literature, we identified four different modes that usefully characterise and classify the governance of ecosystem services [2].

In Figure 1, the governance modes (lower boxes in the Figure) are presented in relation to an established cascade model of ecosystem services (upper boxes in the Figure). This cascade model [3] relates ecosystem structure to the ecosystem functions that produce different ecosystem services. The services are experienced as benefits and are valued by humans and the society. In the use of the cascade model, attention is paid to the interdependencies between the different components and the value of ecosystem services to people.

The governance implementation mechanisms (the governance modes) influence ecosystem functions, the delivery of ecosystem services as well as the benefits and values derived from the services. The different modes that characterise the governance of ecosystem services are: hierarchical governance, scientific technical governance, adaptive collaborative governance and governing strategic behaviour. These different modes rest on slightly differing assumptions about how knowledge feeds to decisions (dark arrows in Figure 1) and how decisions influence ecosystem services (light arrows in Figure 1). In practise, in decision-making situations all the governance modes can be present. However, some of them can be more apparent or dominating over others, depending on the context. Moreover, there are various links between the modes so that these different components of the governance system often work in concert.

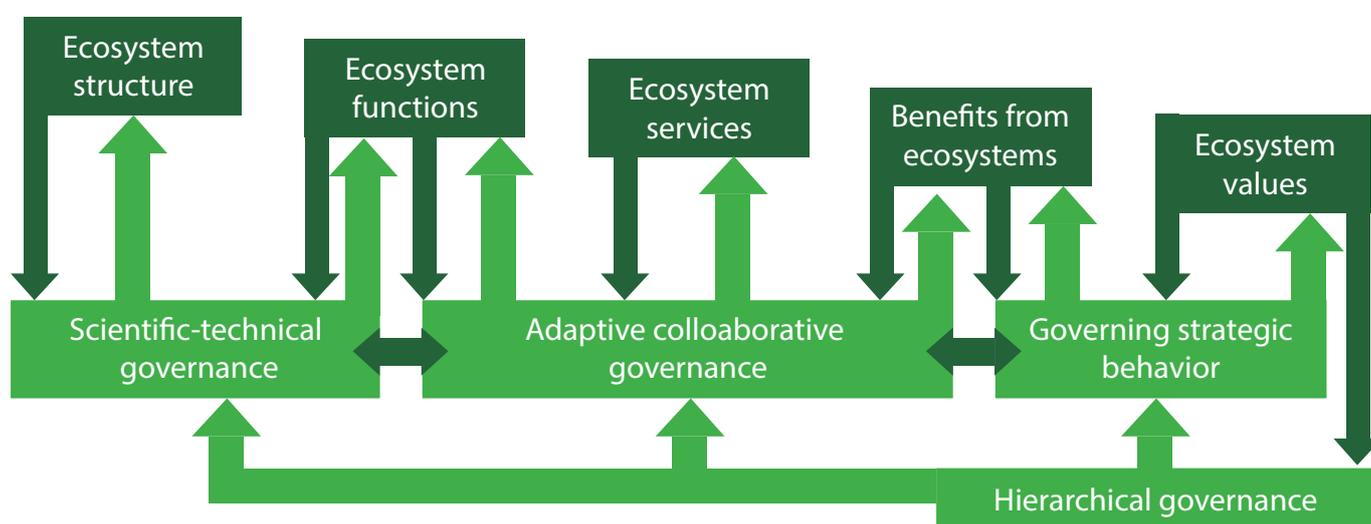


Figure 1. Governance of Ecosystem Services. From [1].

Hierarchical governance supports decisions at a high level and assumes a top-down approach such that the decisions will be implemented at lower levels. The decisions and values “trickle down” to practice, eventually potentially influencing the biophysical structure of the ecosystem. This governance mode can be identified when focusing on agreed policies or decisions and their implementation, for example in international agreements or national policies that are implemented at lower governance levels. The hierarchical mode can exist also at a very local level or in a specific organisational setting. It is important to note that the hierarchical mode is connected to other governance modes; decisions made at the top are interpreted and implemented in scientific-technical and collaborative governance, as well as in strategic governance settings.

Scientific-technical governance has its focus on applying up-to-date science-based knowledge in decision-making. Often this governance mode seeks to develop tools and technologies to support operational decision-making that influences ecosystem structure or functions, for example in land-use planning or biodiversity conservation. Scientific-technical governance interprets and implements the goals set at the top of the hierarchy but it also directly derives information about the biophysical ecosystem structure and ecosystem services (depicted by a dark arrow from ecosystem structure to scientific-technical governance in Figure 1).

Adaptive collaborative governance focuses on the actors who use and produce knowledge, and their interactions. This governance mode bridges sectors and governance levels with an aim to learn, commit and advance shared goals. Adaptive-collaborative governance joins actors who use science-based knowledge and arguments about ecosystem functions and actors who understand and argument for the different benefits that humans derive from ecosystems. Adaptive-collaborative governance influences ecosystem functions and ecosystem services and also shapes the benefits that different actors can make use of or enjoy. In addition to contributing to interpreting and implementing goals set at the top of the hierarchy, the adaptive-collaborative mode of governance bridges scientific-technical governance and governing strategic behavior.

Governing strategic behavior deals with actors' self-interest behavior in their negotiating and designing policy instruments. Governing interest-driven strategic behaviour makes use of knowledge and arguments about ecosystem benefits and values, and also shapes the ways in which the benefits are framed and values weighed. This governance mode reflects the tendency of actors to utilize ecosystem services to secure their own, rather than collective interests. Governing strategic behaviour occurs in most negotiations, whether conducted by companies, governments, citizens or other actors.

Usefulness: Governance modes in parallel: an example

Our model offers an aid to analysing governance to identify and disentangle the range of arguments used in turning policies into practice. The BESAFE analysis illustrates the parallel existence of different modes of governance. As an example, the implementation of the European Union Natura 2000 network may be used to show the different types of emphasis. A focus on the hierarchical governance mode would emphasise the protected area network implementation by the member states and by the regional and local administrations, concentrating on legal and administrative arguments. A focus on scientific-technical governance would address the data and knowledge resources applied in the implementation, paying attention to the scientific arguments used to justify selection and management of the Natura 2000 protected areas. Focusing on an adaptive collaborative mode of governance would direct attention to different actors exchanging information and views on the areas to be assigned and their different uses. A range of different arguments are used in this kind of deliberation, for example when devising the Natura 2000 management plans. Focus on governing strategic behavior would direct attention to other local interests and land-uses conflicting with the Natura 2000 protected areas, relying on arguments of different benefits and values. This may also occur at the international level, when the EU goals are negotiated and operationalised for use at national level .

Lessons learned

- **Governance of ecosystem services can function through top-down hierarchy, scientific-technical support, collaboration or strategic negotiation. Often these different governance modes co-exist in practice, though with varying emphases.**
- **When developing or evaluating biodiversity conservation and ecosystem services governance, the different modes of governance should be identified.**

- When channelling new ecosystem service knowledge to decision-making, it is best to consider the different modes of governance and tailor communication to fit these modes.
- It is preferable to acknowledge different stakeholders' tendencies to highlight certain modes of governance and sometimes downplay other modes.

References

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 2. Primmer, E., Jokinen, P., Blicharska, M., Barton, D.N., Bugter, R., Potschin, M. 2015. A framework for empirical analysis of ecosystem services governance. *Ecosystem Services*. <http://dx.doi.org/10.1016/j.ecoser.2015.05.002>
 3. Potschin, M., Haines-Young, R. 2011. Ecosystem services: Exploring a geographical perspective. *Progress in Physical Geography*, 35(5): 575-594.
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Looking for more information on effective arguments for biodiversity?

For more BESAFE results, including separate briefs focusing on other case studies and various aspects of argumentation, see <http://www.besafe-project.net> and BESAFE toolkit <http://tool.besafe-project.net>.

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