Synthesis of instruments for implementing Ecosystem Services

DIGEST
What are the instruments? What can be implemented and where?

The successful implementation of the ecosystem services concept needs instruments that can be operationalised and used both for regional environmental governance and for decision-making processes. In the AlpES project, the scope of our analysis has been restricted to instruments for environmental management and territorial development.

The term instrument refers to a variety of tools that are either required by legislation or motivated by economic or societal impetus. These instruments are abstract, transferable and comparable methods for the implementation of measures based on specific objectives. Examples are funding, laws or education, and participation programs.

Regional environmental governance comprises the decision-making processes applied by the government, by the economy and by civil society at a regional scale in managing the environment and natural resources. The environmental management component of governance includes aspects related to planning and implementation.

In the understanding of AlpES, “territorial development” is a concept that requires a common approach to implementing public policies intended to transform a specific, delineated area. It combines the economic, social, environmental and cultural aspects of sustainable spatial development.
As a starting point, it is crucial to be aware of the diversity of existing instruments that meet the above definitions. Hence, what do we already know and use when we operationalise knowledge and methods in structuring and creating information for decision-making processes?

As a basic approach we differentiate between informal and formal instruments:

- Informal instruments can be described as processes and procedures having no legally binding commitments in a strict sense and having no reference to legal procedures. Examples of these are roundtable discussions, future labs or citizen planning groups.

- Formal instruments represent the opposite: Concrete actions and binding results that are required by legislative decisions, treaties, preconditions, and laws. Examples of these are formal urban plans, environmental impact assessments (EIA) or nature conservation compensation schemes.

While we consider informal instruments as short-term measures at a small (local to regional) scale with a bottom-up approach, formal instruments are instead generally top-down, medium-term measures focused on larger areas.

Instruments can also be divided into thematic categories:

- Laws and Regulations with a high level of predictable effectiveness;
- (Spatial) planning for the formulation of long-term objectives;
- Monetary burden and incentives to reward or punish desirable or undesirable behaviour;
- Voluntary approaches and agreements through a bottom-up development of actions;
- Information and research for the improvement of knowledge through research and education
Example of a Nature park entrance sign showing authoritative regulations.
As toolsets for political decision-making and support, instruments can only be evaluated within the context of the social (somewhat informal) and juridical (somewhat formal) background to which they are applied. The instruments included in the AlpES focus, aim at implementing the ecosystem services concept to support decisions or agendas.

For instance, the Environmental Impact Assessment (EIA) is the focus selected in the case of formal instruments. This instrument is implemented into the national legislation of all EU-member states according to the relevant directive (with equivalent versions for Switzerland and Liechtenstein). Therefore, being a well-established formal instrument, it provides a comparable model within the whole Alpine Space. Even though research is currently being conducted on the integration of ecosystem services into the EIA (c.f. Geneletti 2016: “Biodiversity and Ecosystem Services in Impact Assessment”), no applications currently exist in any of the Alpine countries. This is mainly due to differing political perspectives and guiding laws. Nonetheless, potential advantages were identified, such as awareness raising, communication towards stakeholders and a better understanding of interconnectedness.

AlpES project partners have reported difficulties in achieving such integration into existing formal and legally enforced instruments. To obtain effective implementation more detailed operationalisation, a clear framework and reference metrics are needed.

Due to their non-binding nature, hence their higher flexibility, informal instruments seem currently better suited for ES implementation and might offer a higher transferability potential between Alpine countries.

Informal instruments are often used to engage with civil society during the preparatory stages of formal decision-making processes (consultation). If ecosystem services
are introduced into such processes, they also have a high potential to influence the subsequent formal decision-making. Some of the informal instruments AlpES partners have found suitable in implementing ecosystem services are as follows: civil/public forums (about 20 randomly chosen people discuss a problem), public panels, (future) workshops, citizen surveys, world cafés, public commissioned reports or participatory GIS methods.

Advantages of these instruments are flexibility in their application, transparency, and the inclusion of local knowledge, which leads to a higher acceptance of decisions. However, it is a time-consuming process and may become tedious if applied too often. Moreover, it could be exploited to advance the interests of a minority.
What is the current status of the implementation of the ecosystem service approach?

Besides the theoretical examination of which instruments might be most suitable or approachable for such an implementation, are there any ready to be used? Or do we perhaps already use ecosystem services in our instruments, without recognising them as ecosystem services? And what is their impact?

Instruments collected by the AlpES project partnership show that there are several instruments at both a local/regional and at a national level that are either suitable for ES implementation or already indirectly integrated into the ecosystem services concept. 25 of the 39 informal and 34 of the 93 formal instruments that were collected make partial or complete use of the ecosystem services concept. We also identified similarities between specific instruments used by Alpine countries (e.g. cultural landscape programs in Italy and Germany).

According to our assessment, the status of ecosystem service involvement, ecosystem service integration suitability, as well as the rate of transferability of informal instruments, is all higher than in the case of formal ones. Among the informal instruments, voluntary approaches are considered most suitable for implementation. However, the effect on decision-making is undoubtedly higher for formal instruments.

Among the voluntary approaches several examples have been provided that show how the ecosystem services concept can be used to create incentives for sustainable environmental management: Sustainability of consumer products and regional food supply (CH: “BuyAware”; AT: bewusstkaufen.at; DE: “Regionalwert AG”), collection and sharing of local knowledge about existing ecosystem services and ecosystems (DE: “Regional environmental forum”; LI: “Rheinschule”) or the direct link between the ecological assets of agricultural ecosystems and their services (IT: “Meadow Championship”). The research revealed several cases where concepts of ecosystem services exist and are actively used without
anyone defining them as such or being aware of their nature. Therefore, it is always good to reflect on one’s customary instruments and tools to see whether they can be expanded or be considered from new angles by factoring in an understanding of the ecosystem services concept.

| Criteria for instrument collection and assessment by the AlpES project partnership |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Chances | Limitations | Transnational implementation requirements | Added value of ES |
| Where do you see main chances concerning the implementation of ES into the specific planning/decision making instrument? | Where do you see your main challenges/obstacles/limits concerning the implementation of ES into planning/decision making instruments? | What would be necessary to implement the instrument on a transnational scale, i.e. the Alpine Space? Where do you see possible conflict points? | To sum up, what would be added value of the ES concept for the particular instrument? |
| Acceptance by target groups | Effect on decision-making processes | Transferability |
| Among which target groups is the particular instrument accepted? | Does the instrument have a direct effect on decision-making processes? | If yes, on which level would you estimate the effectiveness on decision-making? | Does the particular instrument have the potential to transfer it to other Alpine countries? |
| Scalability |  |  |  |
Who is involved or affected by these instruments?

Expert groups, society, and politics can use distinct types of instruments differently. Political interests are a factor to be considered in almost all decision-making instances and they tend to become more relevant and meaningful as public interest and the overall scope (e.g., plans and programs) expand. So who should be made aware of what can be achieved through the use of ecosystem services in instruments and through their implementation?

Expert groups might be the immediate contact when considering the short-term implementation of the ecosystem service concept. The focus here is on practitioners at all administrative levels and across all sectors. It is to be expected that, within different sectors, a wide range of levels of interest and willingness to engage with the ecosystem service concept will be found.

Similar considerations apply to society: the applicability of instruments is influenced by attitudes towards nature conservation, protection, and management topics as well as by openness to new approaches. Several authors argue that ecosystem services are an excellent tool for communication not only within expert groups but also for public outreach. Successful implementation prospects can be expected considering the evident trends in public willingness to engage with nature as well as with environmental and biodiversity protection initiatives, in combination with strength in the communication of ecosystem services. According to a Eurobarometer study (2015), up to 60% of European respondents agree without reservations, and up to a further 30% tend to agree, that our health and well-being depend on nature. In the Alpine EU-countries, only a minority disagrees with the connection between nature, biodiversity and human well-being. This also roughly reflects the attitude expressed in national surveys. Ultimately, however, the real commitment to change one's lifestyle is lower. One-third of respondents believe they should make a personal effort to protect nature, one-third would like to do more and one-quarter makes no effort at all.

The issue of far-reaching and mainstream communication also applies to politics and its actors. Due to their effectiveness
in this field, instruments are therefore seen as highly suited to be implemented within political decision-making. Political decisions do not merely affect the public and expert groups, these two groups also influence them. Possible mismatches between the agendas and strategies of these groups are inevitable. Having a common vocabulary may at least mitigate this. Providing such a vocabulary is often considered as one of the strengths of the ecosystem service concept.
Authors:

Stefan Marzelli,
Constanze Neumann,
Matthias Riedel,
Linda Szücs
Institute for Environmental Planning and Spatial Development

Graphic design:

Rachele Carloni
Eurac Research,
Institute for Alpine Environment

References:

EC (European Commission) (Ed.) (2015): Attitudes of Europeans towards biodiversity. Brussels (Special Eurobarometer, 436)

Reference for Photos:

Cover: Photo by TheUjulala on Pixabay
3: ifuplan
5: Eurac Research/Alice Labadini; Photo by M. Rottonara on Pixabay
7: CIPRA/Martha Dunbar