

WP4 Guidelines to integrate MCA procedures in normative and set of laws

Final report

31/07/2012

version 3.0

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Member number and name

PP12-AEM

SHARE - Sustainable Hydropower in Alpine Rivers Ecosystems

<http://www.share-alpinerivers.eu>

Project reference number: 5-2-3-IT

Priority 3 – Environment and Risk Prevention

Project duration: 36 months – 1/08/2009 – 31/07/2012



Summary

This document intends to procure a set of guidelines for the integration of Multi Criteria Analysis approach into the national and transnational normative framework

Document Control

Project	SHARE - Sustainable Hydropower in Alpine Rivers Ecosystems (ref. 5-2-3-IT)
Action	WP4 – action 4.5
Deliverable	WP4.5-B
Due date	31.07.2012
Delivery date	31.07.2012
Dissemination	Public
Origin	PP12 – AEM
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General abstracts

Assignment

SHARE is a project realized thanks to the European Territorial Cooperation Alpine Space programme 2007-2013. As such it has been early approved and co funded by the European Regional Development fund. The project will formally take place from August 2009 to July 2012.

The purpose of SHARE is to develop, test and promote a decision support system to merge, on an unprejudiced base, both river ecosystems and hydropower requirements. The project openly pursues integrated river management aims.

The project partnership covers different alpine countries & hydrosystems, profiles, status, end users, networks and previous experiences. SHARE is supported and implemented by 13 partners. The leading partner is ARPA (Regional Agency for Environment) Valle d'Aosta. Several organizations also contribute as official observers. All stakeholders in water management issues can participate and benefit from the project results as members of the national Permanent Technical Panel.

Issues and content of the guidelines

Hydropower is the most important renewable energy source in the Alps. However, the exploitation of the energy potential of alpine rivers could have a significant impact on the environment and specifically the quality of water. The multiplicity of pressures and the conflict of interests resulting from the necessity to preserve the environment and the needs to develop the remaining hydro-electrical potential of the Alps are important issues for the decision makers dealing with river management. In this context, SHARE guideline will provide them an efficient methodology to strike a balanced decision compatible with sustainable development principles

Objectives

The specific objective of the present guidebook is to assist policy-makers to take transparent and well informed decisions related to hydropower, thanks to a multi-criteria approach (MCA) methodology. The MCA will be applied to assess different management alternatives where a single-criterion approach (such as cost-benefit analysis) falls short, especially where environmental, technical, economic and social criteria can't be quantified by monetary values. Comprehensively, this tool provides a general guidance which includes economic and environmental standards to develop a new generation of eco investments to mitigate hydropower's impacts and restore water bodies' quality.

Scope of application

The scope of this project is geographically limited to the mountain areas of the Alpine space and is specifically addressed to public authorities in charge of small hydropower management. However these guidelines may also have validity for other Regions or mountain areas facing the same kinds of challenges. We believe that this guidebook can serve as a reference document for developing comparable procedures and similar standards in other European member states.

Introduction

To deal with complexity is certainly the main challenge for policy makers. The decision process for a regional or local authority is challenged by the need to consider the point of view of many citizens, the interests of many users or stakeholders and their contradictions. The responsibility is absolutely serious: a wrong decision could create damage on future generations or destabilize definitively any capacity to bear the general interest. However, the situation has changed during the last decade: the stakeholders' knowledge has increased, as well as the regulatory framework. We are not any more in a period, when the development of Alpine regions was somehow monopolized; decision makers have to take into account sustainable development. This dominant concept could be considered also as a school of open-mindedness and balanced decision: how to balance the short-term need of development and the long term necessity of social regulations and environmental preservation? The integration of sustainable development into policy making could then be considered as a renewable source for democracy and support the core democratic concept of consensus, "common values" or general interest. In a political and operational context, sustainable development, sometimes considered as "politically correct", has become a strategic topic because of the "transversality" it implies; however it remains difficult to be integrated into decision making considering the sectoral approaches used by administrations and institutions. It is also difficult to put in practice the balanced decision. Authority has to find a balance with the power of experts. Transparency has become absolutely necessary for political decisions and public actions.

In the Alps, hydropower is the most important renewable energy source. It shows the clear advantages for the global CO₂ balance, but has significant ecological impacts, therefore threatening water bodies' health. Administrators of mountain areas face an increasing demand of water abstraction but lack reliable tools to rigorously evaluate the effects on environment and on society. Consequently, consumers, producers and decision makers don't have all the necessary inputs to reach decisions about their use of hydropower resources.

Sustainable way to hydropower appears as a strategic challenge for alpine regions.

River users and defenders face a daily contradiction:

- On one hand, the Directive on Electricity Production from Renewable Energy Sources obliges EU member states to increase the share of renewable electricity production, in order to reduce greenhouse gases emissions.
- On the other hand, the Water Framework Directive obliges EU member states to reach and maintain a "good" ecological status of water bodies by 2015.

Somehow, the legal framework could give also paradoxical, or even contradictory, orientations. That is the case in-between the EU Water Framework Directive and the EU Energy-Climate package: is it possible to respect both the "good quality of water resources" and "the objectives of 20% of renewable energy" in 2020 considering the Alpine hydropower potential?

The purpose of SHARE is to develop, test and promote a decision support system (DSS) to merge, on an unprejudiced base, both river ecosystems and hydropower requirements. The project openly pursues integrated river management aims.

The approach: merging scientific tools, local specificities and operational requirements. In that intent, the DSS will include economic and environmental standards, thus triggering a new generation of hydropower planning mitigating its impacts on water quality. This approach is led using existing scientific tools adjustable to transnational, national and local normative and carried on by permanent technical panels of administrators and stakeholders.

The Alpine challenge

The Alpine economy has been strongly oriented by its capacity to transform a permanent natural handicap into an asset: i.e. slope, climate or natural resources such as water in its different forms (ice, snow,...). The abundance of water (precipitation) in the Alps combined to slope is a factor of risk but it has been used to reduce manpower and progressively supply the energy needs all over Europe. Then, hydropower has certainly been one of the main forms of energy production for the Alpine valleys; the installation of many electro-intensive industries (EII, as carbon, aluminum, etc.) in Alpine

valleys during the XIXth and XXth centuries are the direct consequence of the proximity of hydropower plants. At the turning point of the XXIth, due to global competition, it is hard to maintain so many energy intense industries in Europe but hydropower remains a strategic sector regarding higher necessity of the energy mix and the main renewable component of energies sources. Hydropower could then be considered, as in Austria or Switzerland, a strategic sector, even if it is not low-cost energy, it is flexible and performing. We should retain that the total power output of Alpine hydropower stations is more than 45 800 MW.

Alpine regions are also known for their strong attention to their natural capital. For this reason, the double question of good quality of water resources and a good level of renewable energy production is very important in the Alpine area. The pressure coming from human activities action on water resources calls indeed for management and protection measures to be adopted. Furthermore, as ecosystem services are currently considered for their economic value¹, the Alps acquire additional assets to become a leading region regarding green growth objectives.

Another key factor is the importance of adaptation to climate change. The Alps could face a temperature increase of more than two times higher than the lowlands. Thus the impact on economy, environment and natural risks could become absolutely tragic. Then, even if the solution needs to be achieved on a global scale, many alpine actors and municipalities have developed climate plans which instigate respective energy policies. The Action plan for climate of the Alpine Convention could be considered as an emblematic initiative of ministerial actors. During the preparatory discussion preceding the ministers' decision of the Alpine conference in Evian, discussions between some administrators of the European Commission DG Environment and civil servants from the Alpine ministries were strong with regard to a strict analysis of what is the "good level of water quality" and the necessity of support micro and pico-hydropower plants in as a contribution to mitigate climate change. At the European level, between stakeholders sharing common challenges and values, such a controversy is symbolic for the complex context in which policy makers are supposed to decide about the development of micro-hydroelectricity in the Alps.

There is a real risk that the strong potential of renewable energies in the Alps could not be mobilized due to the political complexity to decide what is appropriate even if the real choice is generally between the worst and the less evil.

KEY POINTS:

Sustainable way to develop hydropower in the Alps appears as a strategic challenge regarding both the importance to reach a good level of renewable energy production and the necessity to preserve a good quality of water resources. Given the multiplicity of conflicting expectations, the public authorities needs guidance to elaborate transparent, holistic and integrated decision. The purpose of SHARE is to develop, test and promote a decision support system (DSS) that merge, on an unprejudiced base, both river ecosystem and hydropower requirements to help decision makers in this difficult job.

River ecosystems vs hydropower? Conservation vs adaptation to climate change?

During the SHARE project, the Alpine Convention and the Alpine national states had set up a "Water platform" presided by Switzerland and followed by the report on the State of the Alps dedicated to water issue. The "water platform" has recently worked on COMMON GUIDELINES FOR THE USE OF SMALL HYDROPOWER IN THE ALPINE REGION - ALPINE SIGNALS FOCUS 1, 20112. SHARE project was a core component of this work and these common guidelines are an important element in considering the importance of the implementation of MCA in relevant laws.

¹ **The Economics of Ecosystems and Biodiversity (TEEB) study** is a major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation, and to draw together expertise from the fields of science, economics and policy to enable practical actions moving forward. <http://www.teebweb.org/>

² http://www.alpconv.org/documents/Permanent_Secretariat/web/library/SHP_common_guidelines_en.pdf

The rising objective of territorial cohesion within EU affairs could help us to consider the challenging elements that have to be integrated with particular attention, at what levels of governance (or government) and at what scale? We have to consider that the EU Water Framework Directive is a major legal framework to propose a Regional Environmental Governance³. The creation of management structures organized at the scale of river basins is certainly a major progress for the territorial approach in EU policies besides CAP and Cohesion policy.

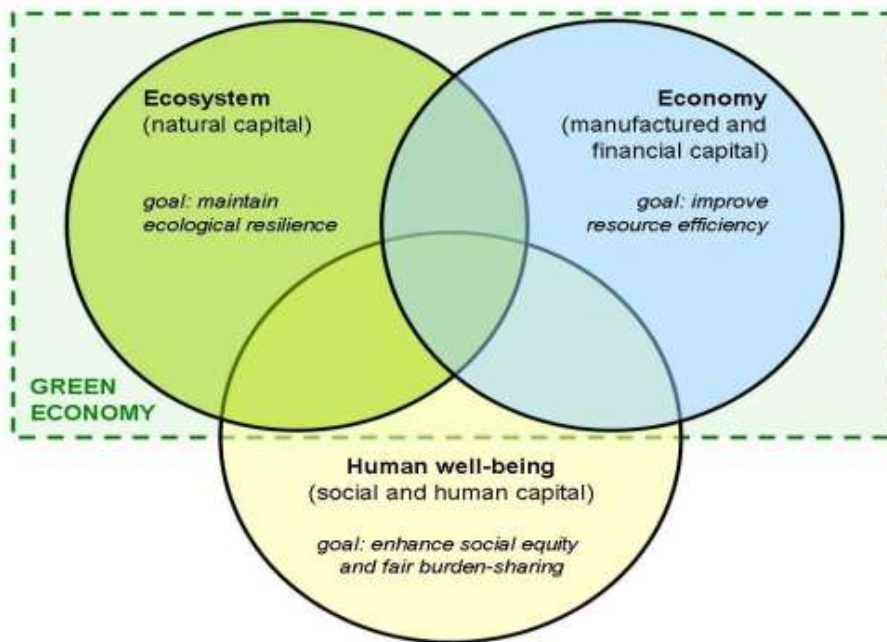
In this context, Multi Criteria Analysis (MCA) appears as a modern and scientific way to aggregate different criteria in order to plan decisions, which fit well to the history of the Alpine cultural landscape⁴ defined by the interaction between social cultural, environmental and economic driving forces on the alpine territory.

Considering this favorable Alpine diversity, MCA appears as a perfect tool to incorporate complex data and to manage multipart content. Furthermore, the MCA will favor a balanced integration of interests and help to objectivize a decision avoiding non-transparent political assessment made with technical positions.

In many cases, new hydropower projects face pros or cons of ex-post assessment: different costs for such an inefficient process: Ecological costs if a plant destroys ecosystems, economic costs if a proposed plant is not efficient enough or abandoned.

When the MCA process is officially integrated into a common ex-ante assessment, only sustainable projects would be proposed. A political analysis and decision would still be possible regarding the importance given to various indicators linked to the respective priorities.

During the assessment meetings gathering various experts, stakeholders or deciders, the MCA process received a positive welcome, highlighting real opportunities to organize a better partnership and multilevel governance. This is absolutely necessary for mountain territories as Alpine regions, in order to adapt policies to specific challenges encountered by “regions with natural or geographic permanent handicaps”. Regional environmental governance is really a key challenge.



Relevant scales of actions: where and when to integrate the MCA procedure?

Subsequently the integration of MCA into laws, plans or programs should follow an analysis with regards to the need of integration, the degree of integration and the identification of interfaces for a

³ <http://www.reg-observatory.org/>

⁴ See Werner Bätzing, Die Alpen, Geschichte und Zukunft einer Kulturlandschaft, Munich, 1991

possible integration. Territorial cohesion objective appears at this stage as a key element to identify the pertinent scale to define “platforms” between deciders (authorities, civil society, users, etc.) and policies considering both efficiency and equity.

KEY POINTS:

Regional environmental governance is a key challenge for the sustainable development of mountains regions. Regarding this context, Multi Criteria Analysis (MCA) appears as a modern and scientific way to aggregate different criteria in order to plan decisions incorporating balanced interactions of social, cultural and economic concerns. The MCA process highlights real opportunities to organize a better partnership and multilevel governance.

MCA integration into the legal framework

The need for integration of MCA into legal procedures is directly linked to the wide range and diversity of impacts linked to HP production. Classically perceived as a conflict between economic interests and ecological impact, the range of real or potential interactions is very complex, including competing economic interests (fishery, but also tourism and agriculture), such as conflicts between competing environmental interests, renewable energy production and the good ecological status of river bodies, expressed by the respective European directives RESe and Water Framework Directive (WFD).

The potential benefits of a tool helping supporting decision makers to rebuild the complexity of interactions between hp and other activities linked to the use of water resources in a river stretch are however linked to the questions of transparency, sensitivity and completeness.

- Transparency refers to the fact that all steps of the MCA-tool have to be understandable by the decision makers, controlling bodies, other stakeholders and the public opinion.
- Sensitivity means that the used tool cannot only handle the architecture of the river system and the different impacts triggered by the different alternative solutions of hp production, but also a shift of priorities.
- Completeness finally refers not only to the integration of all aspects relevant for decision making – as well as the scoping, that is a clear and concise identification of the aspects for each case, but also to the integration of their interactions.

In the context of the SHARE project, the usability of the proposed MCA approach is assessed by the national Permanent Technical Panels (national PTP), composed of the stakeholders concerned by hp-decisions.

The degree of MCA integration

Some evaluation and decision making methods have been directly integrated into the legal set of laws: Thus the evaluation of alternatives has been integrated as a compulsory step into the spatial impact assessment of different countries⁵. In a similar approach MCA could be integrated as a **compulsory tool** into the decision making process for hp-decisions. As a direct integration in the legal process requires a respective decision of the responsible legislative body, the different procedures of lawmaking and amendments have to be considered by each involved public authority and country. In any case, a direct legal integration has to be the result of pilot references.

The identification of interfaces (intermediary / partnership bodies)

The integration of the MCA to into interfaces at the pertinent scale of governance (river or-local, basin or regional, national or European) seems more efficient. These interfaces could be defined as governance bodies at the crossroad of strategic planning and operational actions that could organize a partnership consultation (dialogue). This soft-law dimension is absolutely crucial in this strict legal framework set by the EU WFD to integrate the territorial dimension of river basins (interregional or inter-municipal), but also energy plans, that are set up at regional or local level.

Besides a compulsory legal integration of MCA into the normative procedures, the identification of common existing interfaces between these procedures and MCA, helps to clarify the concrete benefits of the MCA approach or some of its relevant elements on a technical and pragmatic level. This type of interfaces can refer to:

⁵ E.g. Germany §15 ROG; http://bundesrecht.juris.de/rog_2008/__15.html

- The scoping of the impact on resources and activities
- General or specific goals and objectives
- Territorial and political priorities
- The identification of stakeholders and their level of involvement in the decisions

Legal and Administration competencies

There is a variety of legal and administrative competencies related to water management among the different territorial partners involved into the SHARE project and beyond the Alpine Space. One of the characteristics of water management is that administration entities and water basins do not always correspond. Additionally the different types of integration of water management bodies have to be considered in respective administrative and legal context.

Contrary to other policy fields (e.g. cohesion or agricultural policy) water management is not a direct competence of EU institutions. Nevertheless, the EU level is involved in water management, through the setting of EU-directives, headed by the Water Framework Directive (2000/60/CE WFD)⁶ that has to be implemented into national law of the member states.

Example 1.1

In France and Slovenia the legislative competencies are exclusively concentrated on the national level. All laws, guidelines or directives, as e.g. the French environmental code⁷, are set up by the national authorities.

Since 1992 the large river basin level is covered by the SDAGE - "Schéma d'aménagement et de gestion des eaux". Currently seven SDAGE are covering the European French territory, only one of them, the SDAGE for Rhône and Mediterranean⁸, covers the territory of the Alps.

This type of water management plans contribute directly to the implementation of WFD (2000/60/CE). Similar plans or programs on comparable levels can be found in Austria – the national water management plan (Nationaler Gewässerbewirtschaftungsplan)⁹, in Germany, the management plan (Bewirtschaftungsplan) drafted by the State of Bavaria for the Danube river¹⁰ - the plan covering the German alpine territory, or in Italy covering the Po water basin (Piano di Gestione del Distretto idrografico del Po)¹¹.

KEY POINTS:

The need of integration of MCA into the legal procedures is directly linked to the wide range of impacts related to HP production. The MCA offer a tool which helps supporting decision makers to rebuild the complexity of interactions between HP and other activities linked to the use of water resources.

Integration of Multi Criteria Analysis in Plans and Programs

Plans and Programs are drafted by water management bodies in order to rule a sustainable use of water resources. In all alpine states participating in the SHARE project, they are usually set up at least at two levels - a larger basin and a sub-basin level - and involve, besides the public authorities, decision makers and different stakeholders.

⁶ For more information on the Water Framework Directive : http://ec.europa.eu/environment/water/water-framework/index_en.html

⁷ For an English version of the French Environmental Code:
<http://195.83.177.9/code/liste.phtml?lang=uk&c=40>

⁸ <http://www.rhone-mediterranee.eafrance.fr/gestion/dce/sdage2009.php>

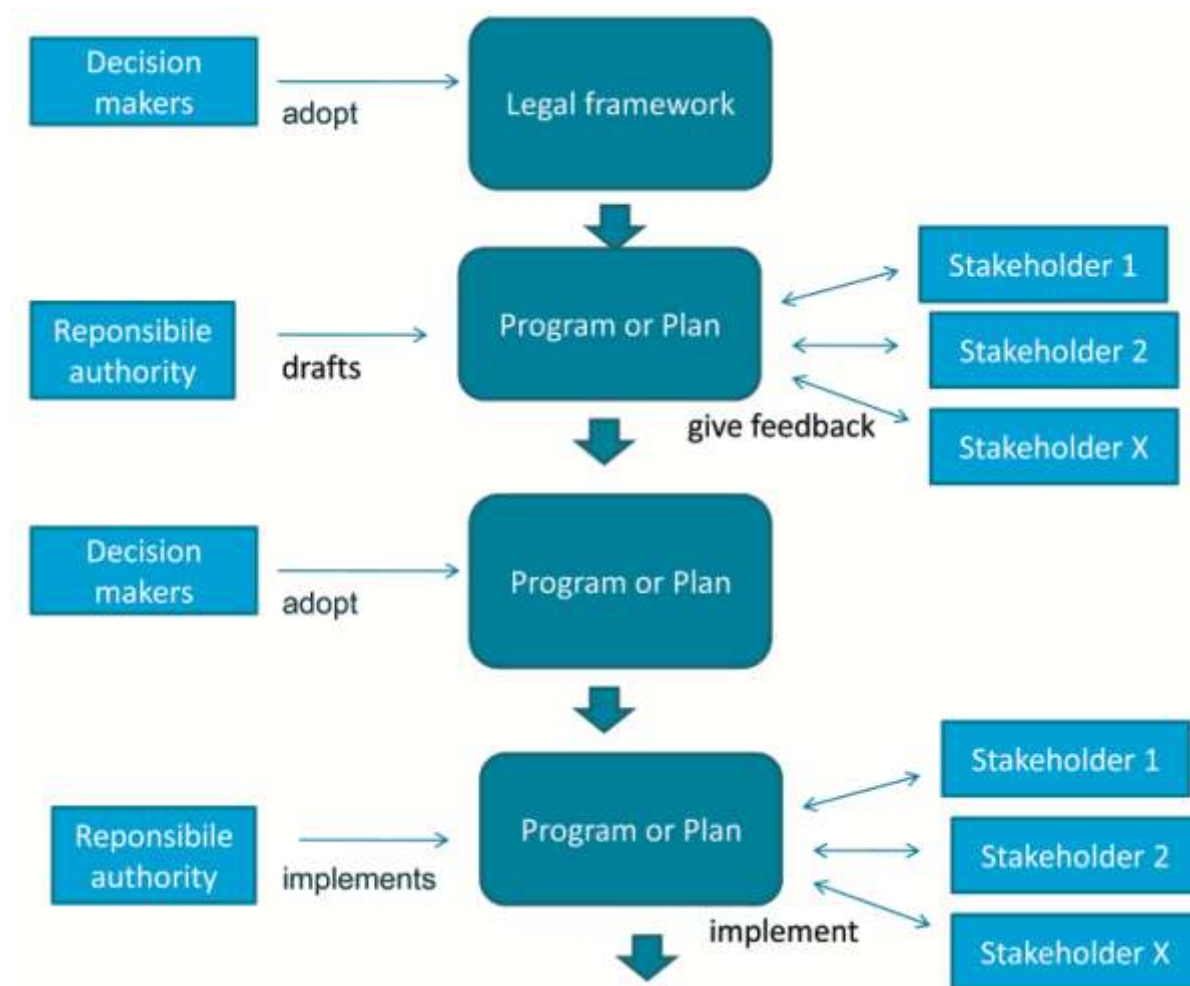
⁹ <http://wisa.lebensministerium.at/article/archive/29368>

¹⁰ <http://www.lfu.bayern.de/wasser/wrrl/bewirtschaftungsplaene/index.htm>

¹¹ <http://www.adbpo.it/on-multi/ADBPO/Home/articolo1080.html>

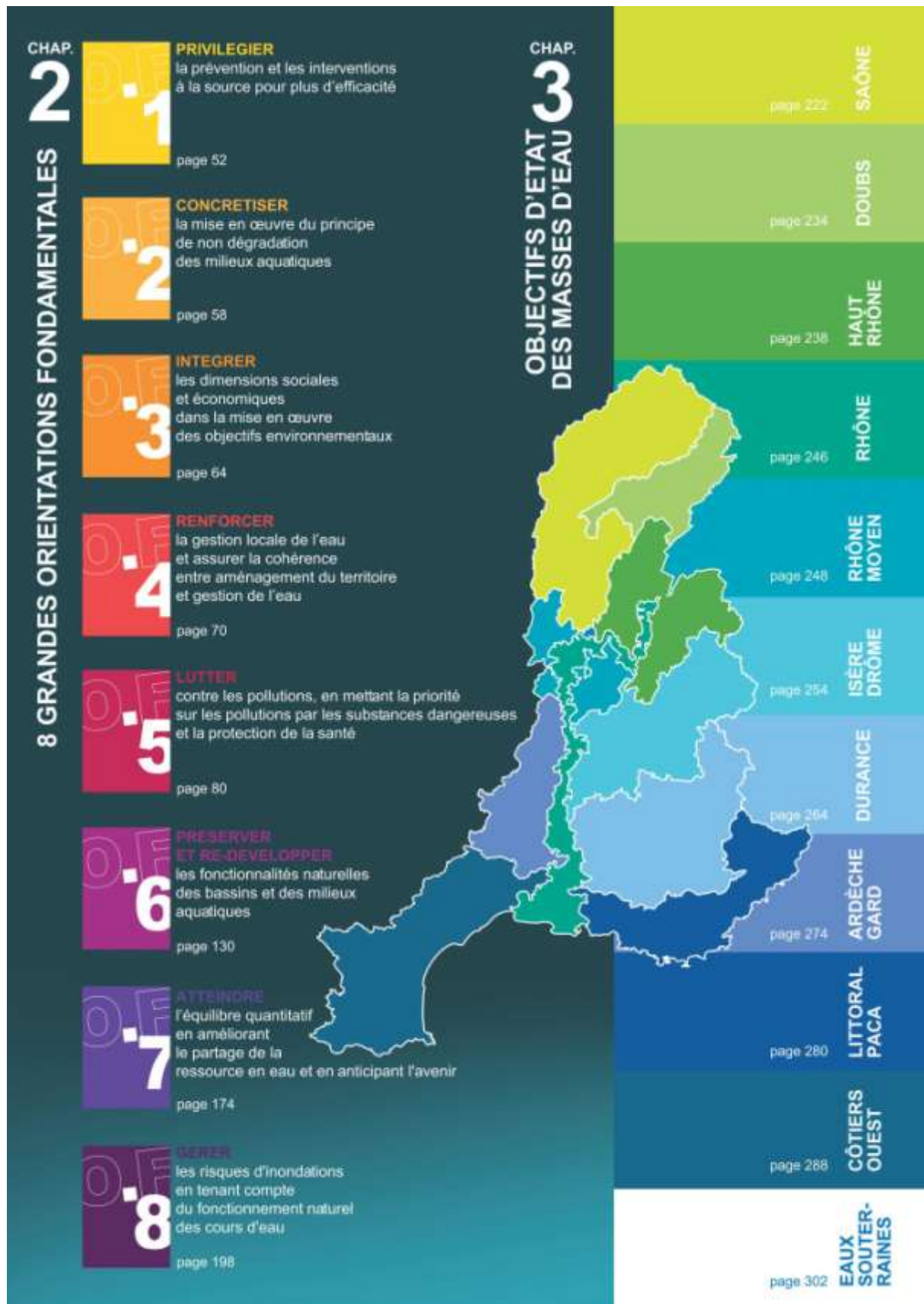
The most recent generation of water management plans and programs is usually directly linked to the WFD. Moreover, plans and programs are strategic tools, set up for a period of 10 -15 years, integrating all activities and relevant interests for water management in the target area. If relevant, hp-production is either addressed explicitly or in a transversal way. During the different phases of their thematic relevance, water management tools and programs offer different interface for direct or indirect integration of the MCA approach:

- Drafting phase: Scoping of relevant interests and activities; scoping of political priorities, set out by decision makers; integration of stakeholders
- Adoption: Direct integration of decision makers, political authorities
- Implementation: Deployment of goals and objectives



Flow model of the different phases of the process for the drafting, adoption and implementation of plans and programs. The process is cyclic - after the implementation phase the drafting starts again

The eight essential guidelines of the Rhone-Mediterranean SDAGE



8 GRANDES ORIENTATIONS FONDAMENTALES

CHAP. 2

- 1** **PRIVILEGIER**
la prévention et les interventions à la source pour plus d'efficacité
page 52
- 2** **CONCRETISER**
la mise en œuvre du principe de non dégradation des milieux aquatiques
page 58
- 3** **INTEGRER**
les dimensions sociales et économiques dans la mise en œuvre des objectifs environnementaux
page 64
- 4** **RENFORCER**
la gestion locale de l'eau et assurer la cohérence entre aménagement du territoire et gestion de l'eau
page 70
- 5** **LUTTER**
contre les pollutions, en mettant la priorité sur les pollutions par les substances dangereuses et la protection de la santé
page 80
- 6** **PRESERVER ET RE-DEVELOPPER**
les fonctionnalités naturelles des bassins et des milieux aquatiques
page 130
- 7** **ATTEINDRE**
l'équilibre quantitatif en améliorant le partage de la ressource en eau et en anticipant l'avenir
page 174
- 8** **GERER**
les risques d'inondations en tenant compte du fonctionnement naturel des cours d'eau
page 198

CHAP. 3

OBJECTIFS D'ETAT DES MASSES D'EAU

- page 222 SAÔNE
- page 234 DOUBS
- page 238 HAUT RHÔNE
- page 246 RHÔNE
- page 248 RHÔNE MOYEN
- page 254 ISÈRE DRÔME
- page 264 DURANCE
- page 274 ARDÈCHE GARD
- page 280 LITTORAL PACA
- page 288 CÔTIERS OUEST
- page 302 EAUX SOUTER-RAINES

SDAGE Rhône-Mediterranean 2010 is covering the territory of the French Alps

Example 2.1: Identifying of interfaces for the integration of MCA into a program in France: The “Schéma d’aménagement et de gestion des eaux” for the Rhône – Mediterranean water basin, covering the territory of the French Alps¹²

The SDAGE is a planning tool for the orientation of integrated water management in large river basins based on the French law from the 03/01/1992 and the 30/12/2006 on water and hydrographic environment and the Water Framework Directive.

The SDAGE for the Rhône – Mediterranean river basin, covering the whole of the French Alps has been put into practice in 2010. Contrary to the previous version from 1996, hydro power is mentioned as a transversal activity, linked to the orientations of physical restoration of the natural environment (OF 6) and water balance (OF7).

With reference to the different orientations the SDAGE develops more concrete “dispositions” and “measures”. These dispositions and measures are pointing out fields of action, goals and stakeholders for future decisions that could be rebuilt in an MCA approach.

Example: Disposition 6A13 from the current SDAGE refers to the «improvement or development of the coordinated management of constructions at the scale of a river basin”, thus identifying a field of action: Management dispositions are supposed to be “improved”, not one by one, but in a “coordinated” way. It also offers a scale: A watershed basin.

In order to fill the MCA criteria, it makes sense to summarize, either all planning dispositions referring to hp, or a set of thematically connected dispositions and measures.

Questions importantes de l'état des lieux		Orientations fondamentales									
		OF 1	OF 2	OF 3	OF 4	OF 5	OF 6	OF 7	OF 8		
		Prévention	Non dégradation	Socio économie et objectifs environnementaux	Gestion locale et aménagement du territoire	Lutte contre la pollution	Restauration physique des milieux	Equilibre quantitatif	Gestion des inondations		
Qi 1	Gestion locale										
Qi 2	Aménagement du territoire										
Qi 3	Prélèvements										
Qi 4	Hydroélectricité										
Qi 5	Restauration physique										
Qi 6	Crue et inondations										
Qi 7	Substances toxiques										
Qi 8	Pesticides										
Qi 9	Eau et santé										
Qi 10	Socio économie										
Qi 11	Efficacité des stratégies										
Qi 12	Durabilité de la politique de l'eau										
Qi 13	Contexte méditerranéen										
Hors Qi	Lutte contre la pollution										
Hors Qi	Eutrophisation										
Hors Qi	Zones humides										
Hors Qi	Espèces et biodiversité										

In the SDAGE 2010 Hydroelectricity is addressed as a transversal question

The SDAGE offers a grid for governance: by creating a “Riverbasin Committee”, and related territorial sub-structures for governance and participation. Furthermore the SDAGE offers also a tool for participation and involvement of stakeholders.

In a similar way, planning and program documents are set up on lower levels: In France the SAGE (Schéma d’aménagement et de gestion des eaux) is established for more limited territories.

¹²

<http://www.rhone-mediterranee.eaufrance.fr/gestion/dce/sdage2009.php>

Example 2.2 Possible uses of MCA as a decision support tool in the process of identification of ecologically acceptable hydropower potential at strategic level in Slovenia

According to the information from Ministry of the Environment it is predicted that possibilities for HP exploitation will be carried out by SEA. By this day in Slovenia MCA in the field of HP had not been carried out yet. On this matter the SHARE project is also supposed to give a good basis illustrated by examples (pilot areas) for possible future implementation of MCA¹³.

The appropriate legal interface identified for the integration of the assessment of Small Hydro Power (SHP) is the strategic decision phase; Thus concession would be granted in the process of public tender, which can be, according to the Water Act, carried out when the HP is harmonized with National River Basin Plan and also Spatial Planning must be carried out. Concession granting could be implemented after the spatial planning process is finished and a plan with reference to the respective of river stretch is adopted.

Currently, as the potential investors are not assured with concession granting even they put certain effort (also financial resources) in the preinvestment phase and subsequently in many cases this fact prevents an efficient HP scheme to be realized since all the potential investors at first stage try to purchase or lease the land which is necessary for HP scheme to be realized. In cases they are not able to assure all the necessary land for the most efficient SHP scheme in advance they modify the SHP scheme (shorter river stretches etc.) and the risk is that the most efficient SHP scheme is not realized.

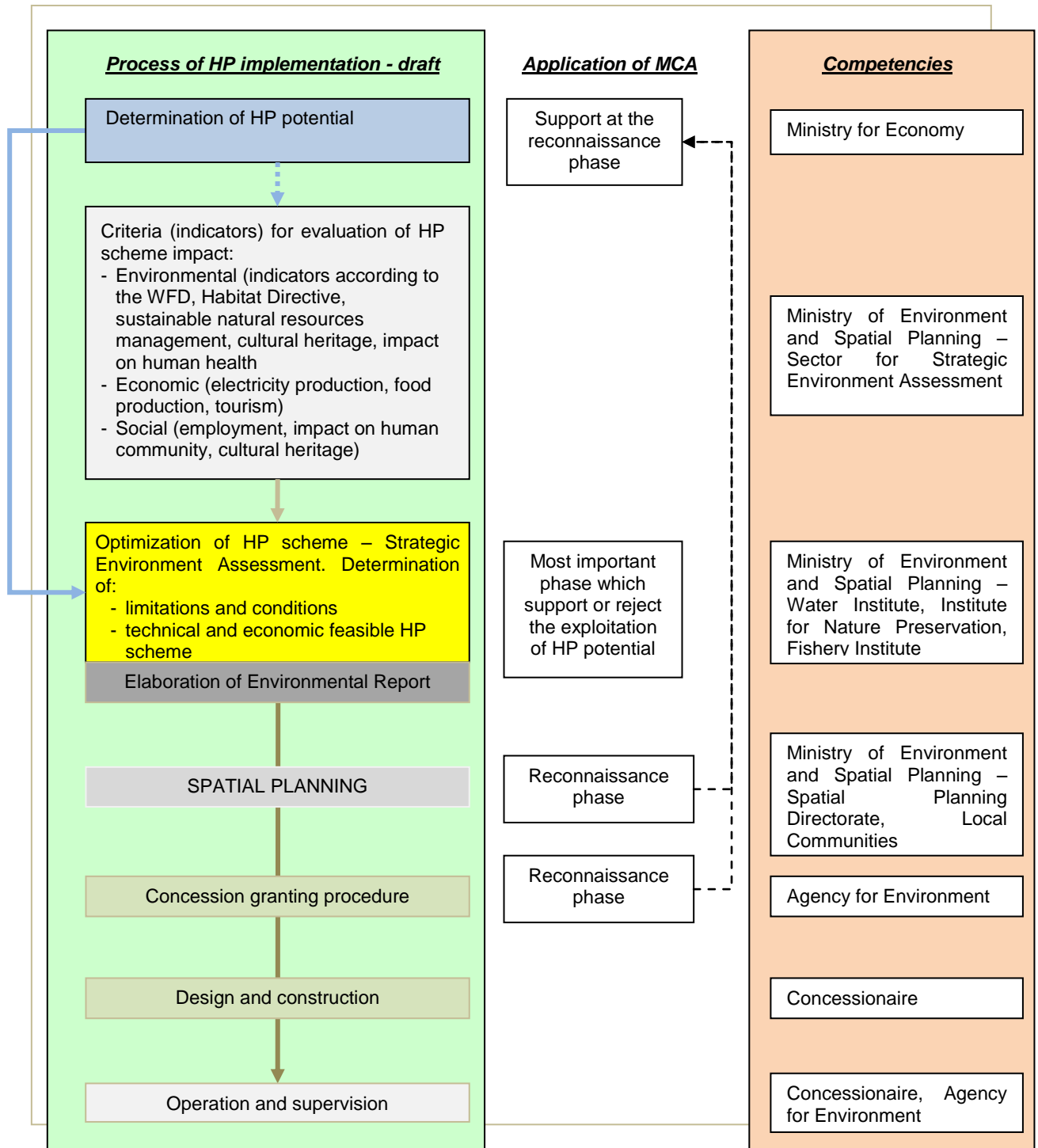
¹³ See : National Renewable Energy Action Plan 2010-2020 (NREAP) SLOVENIA Ljubljana, July 2010 (http://ec.europa.eu/energy/renewables/transparency_platform/action_plan_en.htm)

National Energy Programme 2010-2030 (in the phase of adoption) Extended summary (march 2011) is available in Slovene at

(http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Zelena_knjiga_NEP_2009/NEP_2010_2030/NEP_2010_2030_povzetek.pdf)

Report on determination of the extent of strategic environment impact assessment to support National Energy Programme

(http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/Energetika/Zelena_knjiga_NEP_2009/Porocilo_NEP_CP_VO_2010.pdf)



In Slovenia the Most important phase, when MCA model (criteria, indicators, weighting ...) is defined is the phase of strategic environmental impact assessment.

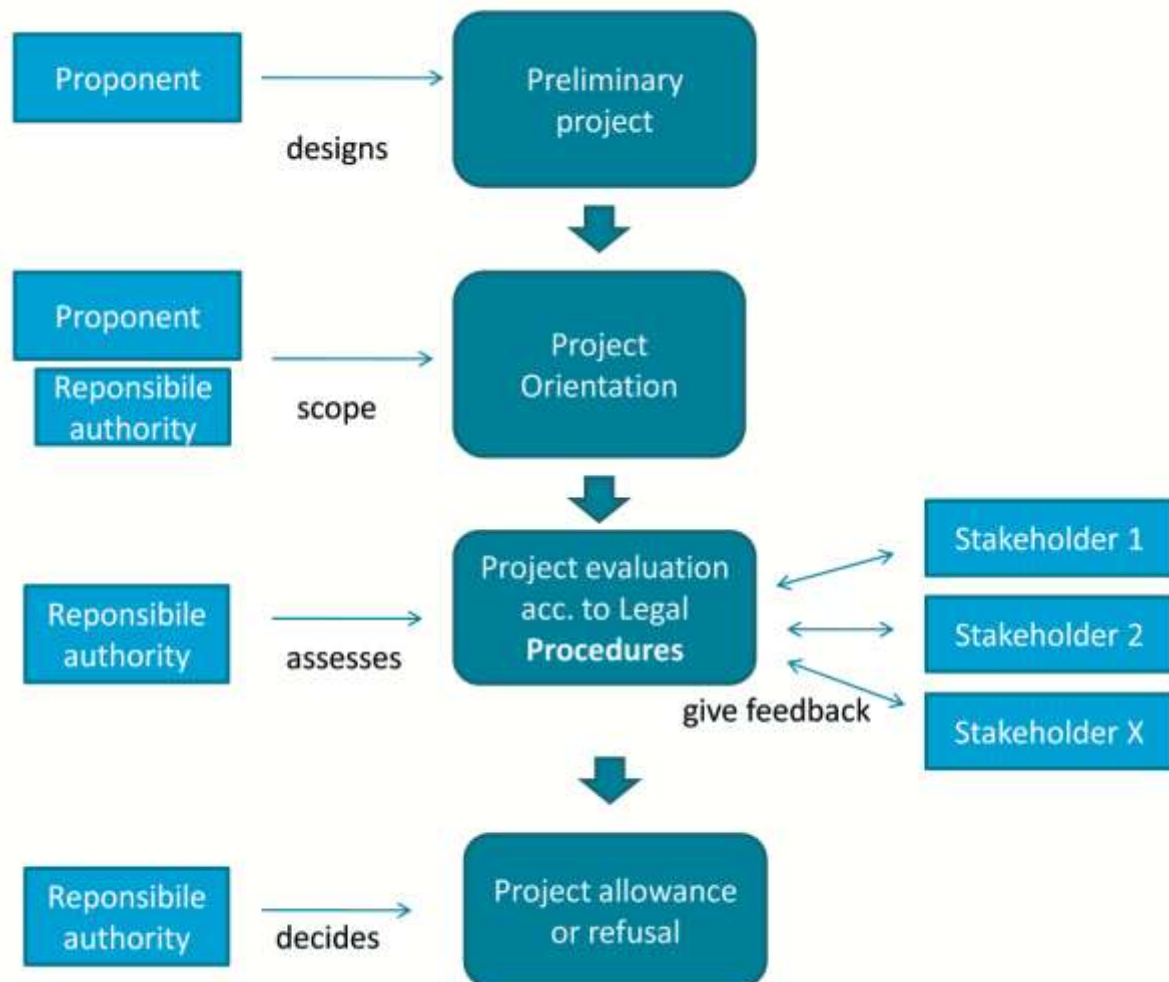
KEY POINTS:

Drafted by water management authorities in order to rule a sustainable use of water resources, Plans and Programs are strategic tools integrating all activities and interest relevant for water management in the respective area. During the different phases of their thematic relevance, water management tools and programs offer different interface for direct or indirect integration of the MCA approach (Drafting phase, Adoption phase, Implementation phase).

MCA for Project Evaluation

Project evaluation is characterized by the initiative of a project proponent. The proponent addresses to the relevant authority a request of allowance. The authority scopes the field of investigation, informs the stakeholders and organizes, if relevant, public hearings before taking a final decision.

Usually decision makers are not directly involved. However the decisions taken by the public authority have to be in line with laws, directives, programs and plans, adopted by the decision makers.



Main steps of a project evaluation procedure

Project evaluation is a more classical field of the application of MCA. A new project has to be validated by the competent authorities and therefore its impacts on the different aspects of water management have to be assessed. Due to the project focus, the framework of the subject for the assessment is less strategic and more feasible.

However, some difficulties can occur during the project evaluation regarding the best moment to fix an overall MCA: the outlines of the project have to be clear enough in order to determine its impact on the resources and the different users, but still fuzzy enough in order to allow an appropriate adaptation to the constraints of each particular case. A possible answer to this issue could be an evaluation in three phases.

Evaluation in three phases	
Phase 1	Content Project ideas – by project applicant
Phase 2	Project orientation: preliminary assessment - by project applicant; first legal scoping
Phase 3	Orientation for the legal procedures – by public authorities, participation of stakeholders

Good legal interfaces for the integration of MCA into the project evaluation should be steps of the respective procedures that consider a variety of different aspects and offer the possibility of larger participation, as Environmental Impact Assessment (EIA). Strategic Environmental Impact Assessment (SEA)¹⁴, approaches the project assessment again to the assessments of plans and programs.

The issue of allowances and concessions for water use is another sensitive step of the process.

New concessions for existing plants have to deal with the facts that former concessions have been very often issued more than five decades ago in a very different context. Indeed, knowledge about integrated river management, possible options for technical solutions and the general priorities given to the different interests involved in hydroelectricity production was totally different.

Example 3.1 : Renewal of the Swiss and French concession for the Kembs hydropower plant until 2035

According

This case does not consider a new project, but a new demand for an outrunning concession. It concerns a larger plant and is therefore characteristic for a wide range of long-term concessions, which are due to renewal currently or in the next years throughout the Alps.

Located outside the Alps as defined by the Alpine Convention, but inside the larger perimeter of the Alps, as well as the territory interested by the program “Alpine Space” and clearly concerning a river of alpine origin, the procedures concerning the issuing of a new concession for the Kembs hydropower plant in the Upper Rhine Valley can be seen as well as an example for both, the interaction between hydropower and the different interests linked to the resources provided by one of the big European rivers, as for cross-boarder and transnational cooperation.

¹⁴ For more information on the European EIA guideline <http://ec.europa.eu/environment/eia/home.htm>



View of the situation of the Kembs power plant in the Upper Rhine valley in 2010. The stretch on the left side belongs to the Grand Canal of Alsace with the power plant at its far end. The river stretch behind the dam on the right is part of the Old Rhine (photo: EDF).

Built between 1928 and 1932 by “Rhine Electric Power”¹⁵. Since its nationalization in 1946, the plant is property of EDF. Fully automatized since 1976 the installation channeled a regular flow of 1400 m³ to the navigable Grand Canal of Alsace and a minimum flow of 20-30 m³ was reserved to the old Rhine stretch¹⁶.

In 1996, ten years before the end of its concession, the exploiting company informed the competent authorities (ministries for energy in France and Switzerland) about its intention to bid for a renewal of the concession, expiring in 2007.

In November 2000 the French ministry for energy informed about its agreement of principle concerning the request, appointed the prefect of the department “Haut Rhin” to instruct the procedure and invited the applicant to provide a specification for an impact assessment as a key element of the procedure. Since the scoping procedure for this impact assessment, public authorities from all three states and the international commission for Rhine protection (CIPR) were involved¹⁷. The document, specifying the interests to be considered during the procedure of the project instruction, can be considered the first official document outlining the scope of a multi-criteria-analysis (MCA) for this project.

Between 2001 and 2003 consultation was started with elected representatives, NGOs and government authorities from France, Switzerland and Germany in about 100 meetings, before the applicant presented the outlines of the project in October 2003.

¹⁵ In 1919 the Treaty of Versailles gave to France the exclusive right to develop and channel the Rhine in the Upper Rhine valley. The construction works, started in 1932 and completed during World War II, include the 50 km stretch of the « Grand Canal of Alsace » and the hydroelectric power plants at Kembs, Ottmarsheim, Fessenheim and Vogelgrun (see also http://en.wikipedia.org/wiki/Grand_Canal_d'Alsace)

¹⁶ Concerning the history of the plant, please refer also to http://www.aufildurhin.com/fr/economie/kembs_eco-b.htm (in French)

¹⁷ Though a concession from German authorities was not required, they were involved according to the Espoo convention.

The parallel and interactive procedure of establishing the impact assessment and the stakeholder consultation for the project, was a key factor for a transparent and complete assessment of relevant criteria for the Kembs project. During this process, the applicant, the involved authorities and stakeholders agreed on project milestones, in order to avoid that there was not enough time to dedicate to topics, identified as important¹⁸. Such milestones were e.g. flow management or mitigation measures.

In 2004 the formal request for concession was presented separately to the French and the Swiss authorities. The subsequent participation involving the public authorities and the general public at different scales, seem to approve the procedure of early involvement of key stakeholders, as well as the scoping of key criteria: By the time these official procedures were started, the measures proposed by the applicant were generally considered as a significant improvement in comparison with the current situation and almost all contributions to the instructing authorities concerned an immediate or soonest start of the proposed measures in connection with the renewal of the concession until 2035¹⁹.

The French concession was finally issued on 20/06/09²⁰, the Swiss concession on 19/07/2010²¹.

The measures fixed with reference to the renewal of the concession concern e.g.

Increase of the minimum flow of the Old Rhine from 20 m³/s to 52 m³/s (compensation of performance loss partially compensated by rebuilding parts of the plant)

Restoration of damage of the riverbanks caused by erosion

Measures to improve river connectivity

Conversion of previously agricultural land to renaturation²².

KEY POINTS:

Project evaluation is the classical field of the application of MCA. HP projects need to be assessed regarding their impacts on the different aspects of water management. However, some difficulties can occurred during the project evaluation regarding the best moment to fix an overall MCA. A possible answer to this issue could be an evaluation in 3 phases.

Hp management is characterized by a growing relevance for contracts among public authorities and stakeholders. Usually upon initiative of the responsible public authorities, stakeholders representing relevant interests on river resources are agreeing on hp issues in the form of a contract. The advantage for all sides is that hp issues can be implemented in a focused manner, while still involving a range of relevant interests. More the potential topics of these hp-focused water management agreements are large and more the opportunities to implement the MCA approaches became interesting.

It appears that the selection of the contract criteria is the most sensitive problem for the discussion of HP decision. Regarding this specific issue, the introduction of MCA approach into these contracts allows to shift the set-up of relevant criteria from a case by case discussion to a more structured and systematic setting, increasing the transparency of HP decisions.

¹⁸ the concertation process is described by the environment agency of the region of Alsace : <http://www.alsace.developpement-durable.gouv.fr/la-production-d-electricite-a326.html> (in French)

¹⁹ As an example you might refer to the minutes of the commission for environment, traffic and energy of the Great Council of the Canton of Basel-Stadt, that debated and voted on the project on 14/10/09 (in German) : <http://www.grosserrat.bs.ch/dokumente/100330/000000330651.pdf>

²⁰ Source document (in French) : http://www.legifrance.gouv.fr/affichTexte.do;jsessionid=31434DF7DF2DAFABAF1504A64204C434.tpdjo14v_2?cidTexte=JORFTEXT000020763713&categorieLien=id

²¹ Département federal de l'environnement, des transports, de l'énergie et de la communication, Concession pour l'utilisation de la force hydraulique du Rhin depuis la frontière franco-germano-suisse jusqu'à l'embouchure de la Birse grace aux ouvrages de production hydroelectrique de Kembs du 19/07/2010

²² The measures are detailed in the annex of the concession. EDF has published a summary : http://energie.edf.com/fichiers/fckeditor/Commun/En_Direct_Centrales/Hydraulique/Commun/documents/dpfrkembs_10_06_2011.pdf

Another possibility is the integration of MCA as a pilot tool into plans and contracts. This is an interesting option, when the stakeholders representing different interests have already opened discussion about a set of measures on the future of hydropower in a specific context. As different as these measures are concerning their precision, timeline or concretization, MCA for a pilot case or territory could be one of them. This is particularly true as these agreements prove at one hand the potential of negotiation on hp issues and on the other hand that this type of agreements usually requires, implementation, monitoring and renegotiation.

Example 4.1 : criteria for hydropower in Tyrol (March 2011)

The Austrian Land of Tyrol has focused on the development of transparent criteria to guide decisions throughout the planning and assessment process until the evaluation of projects. For that matter Tyrol has extended its long experience of stakeholder concertation²³ to the field of hydropower. The scope of the agreement is the criteria. Fixed in a quite detailed set, the criteria are very operational and can be implemented at all phases of the project planning process, as well as for programs and plans.

Kriterium	Indikator	Modellierbar ²⁴	Bedeutung	Bewertung		
				Punkte	Intervalldefinition	
Technisch-wirtschaftliche Aspekte Bewertung der zur technischen Nutzbarmachung eines Wasserkraftpotenzials erforderlichen monetären Aufwendungen (ökonomische Effizienz) als Investitionskosten bezogen auf das Jahresarbeitsvermögen	Investitionskosten bezogen auf Jahresarbeitsvermögen € / (MWh/a)	Ja	---	0	$w_{hp} > 2.2$	
				1	$2.2 \leq w_{hp} < 1.85$	
				2	$1.85 \leq w_{hp} < 1.5$	
				3	$1.5 \leq w_{hp} < 1.15$	
				4	$1.15 \leq w_{hp} < 0.8$	
5	$w_{hp} \leq 0.8$					
Effizienz der Energieproduktion Bewertung der für die Stromerzeugung beanspruchten Gewässerabschnitte (technische Effizienz) als Verhältnis des Jahresarbeitsvermögens und der Länge der in Anspruch genommenen Gewässerstrecke (km)	GWh/a / km	Ja	---	0	$e_{hp} < 1.25$	
				1	$1.25 \leq e_{hp} < 2.0$	
				2	$2.0 \leq e_{hp} < 4.0$	
				3	$4.0 \leq e_{hp} < 8.0$	
				4	$8.0 \leq e_{hp} < 12.5$	
5	$e_{hp} \geq 12.5$					
Beitrag zur Versorgungssicherheit Speicherkapazität/Systemstabilität Bewertung der Möglichkeit einer Anpassung der Stromerzeugung an die jeweilige Nachfrage durch die zeitliche Entkopplung von natürlichen Wasserangebot und Abarbeitung anhand des Verhältnisses zwischen Speichervolumen und jährlicher Zuflussmenge (sog. Speicherkapazität k) in %; k ist mit der nutzbaren Fallhöhe	$(m^3/s) / (m^3/a) \cdot 100$	Ja	---	Projektbewertung		
				Regulierende Potenzialstudie		
				0	$s_{hp} = 0$	$s_{hp} = 0$
				1	$0 < s_{hp} < 1$	$0 < s_{hp} < 25$
				2	$1 \leq s_{hp} < 10$	$25 \leq s_{hp} < 100$
3	$10 \leq s_{hp} < 100$	$100 \leq s_{hp} < 200$				
4	$100 \leq s_{hp} < 200$	$200 \leq s_{hp} < 400$				
5	$s_{hp} \geq 200$	$s_{hp} \geq 400$				

Detailed set of criteria from the Tyrolian agreement on criteria for the evaluation of hp projects

In a first phase the proposals for relevant criteria were set up by a group of administration experts. The following concertation phase gathered more than 400 contributions by organisations and individuals. These contributions were discussed, amended and validated by stakeholders, including different interest groups (hydro-energy producers, chambers of commerce, fishing, environmental NGOs). Finally they were adopted by the decision makers (regional government and parliament).

As a central element for MCA decision making, the set of criteria integrates a proposal for weighing:

- Energy production: 25%
- Water management: 18%
- Spatial Planning: 12%
- Hydroecology: 22%
- Nature conservation: 23%

The set of criteria has been adopted as a material and technical basis for further decisions by public authorities. It is, however, not shared by all interest groups, as some environmental NGO's²⁴ have

²³ By 1992 Tyrol adopted for the first time « Seilbahngrundsätze » (translation : cable car principles), gathering stakeholders from environmental organisations and promoters of ski resorts to agree on principles for the evaluation of projects. These principles have been updated two times since.

²⁴ As one exemple for a negative position, you might refer to the respective communication published by the organisation UWD (in German) :

taken their distance from the content or the procedure it was achieved. Moreover one political representation in the parliament has voted against the set of criteria²⁵.

In order to handle the implementation of the criteria the communication of the responsible member of the Tyrolian government announces the establishment of a “task force” and the draft of a manual²⁶.

Moreover the discussions among stakeholders started with the purpose to agree on the set of criteria should be continued. The set of criteria is supposed to be “completed, adapted and evaluated regularly”. A timeline on that matter, however, has not been established.

Example 4.2: Convention for sustainable hydropower in France

Upon initiative of the French Ministry of Environment, Equipment and Sustainable Development, in the context of the Grenelle national environment round table agreements²⁷

http://www.legrenelle-environnement.fr/IMG/pdf/DP_hydroelectricite_HQE.pdf

This national agreement was signed by major organisations and companies involved in the project: Association des Maires de France, Association Nationale des Elus de Montagne, Union Française de l'Electricité, France Hydro electricité, EAF, EDF, GDF Suez, Compagnie Nationale du Rhône, Syndicat des énergies renouvelables, WWF, Fondation Nicolas Hulot, ANPER-TOS, SOS Loire Vivante – ERN France, NASF, UICN France, Comité National de la Pêche Professionnelle en Eau Douce, Comité de liaison des énergies renouvelables

The “convention” is covering different topics, that reach from the general agreement on the importance of hydropower as a source for renewable energy, to goals of the part of hp-energy in the national energy production or very specific topics as the decommissioning of particular plants.

As, for the moment, no particular attention is drawn to the Alpine territory, this possibility has to be assessed with reference to the large range of agreements possible under this convention and its update foreseen in the future.

Examples for agreement on goals and measures are:

- Ruling of biologic minimum flow
- Preservation of amphibic continuity
- A plan for the eel poulation
- Goal of annual increase of hydroenergy production by 3TWh until 2020
- Promotion of concertation initiatives
- Research in environmental integration of hp plants
- Promotion of small installation (below 12 MW)
- Decommissioning (not in the Alps)

With respect to the importance of the Alps on this subject, MCA could here offer some very specific interfaces in order to implement the convention:

- Support tool in order to identify the potential of the contribution of the Alpine territories to the annual 3Twh increase until 2020, while preserving the ecologic continuity
- Identification of the potential for small hp production
- Assessment of an optimization of the impact of new and existing plants on river ecology

This conventional and soft law approach give the opportunity to be decline regionally as it was for example in Corsica with a regional convention between mountain municipalities and EDF or around the large plan of Poutès (in Haute-Loire Fr).

http://www.umweltdachverband.at/fileadmin/user_upload/pdfs/Positionspapiere/Stellungnahme_UWD_Kriterienkatalog_Wasserkraft_Tirol_Version3.0.pdf

²⁵ The parliament adopted the set of criteria the 16/03/2011 against the votes of the repretants « Liste FRITZ » ; for the debate (in German) refer to : http://landtag.tirol.gv.at/c.cfm?filename=J_CXX_Sten-Pro_XV-Periode_2011_L160311.pdf

²⁶ <http://www.tirol.gv.at/regierung/steixner-anton/kriterienkatalog/> (in German)

²⁷ More information on the French Grenelle procedure : <http://www.legrenelle-environnement.fr/-Version-anglaise-.html?rubrique33>

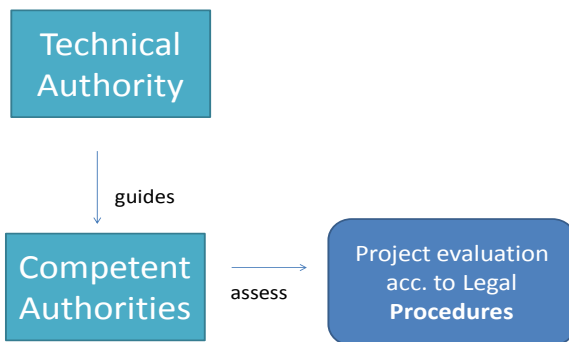
KEY POINTS:

HP management is characterized by a growing relevance of contracts among public authorities and relevant stakeholders. It appears that the selection of the contract criteria is the most sensitive problem for the discussion of HP decision. Regarding this specific issue, the introduction of MCA approach into these contracts allows to shift the set up of relevant criteria from a case by case discussion to a more structured and systematic setting, increasing the transparency of HP decisions.

Technical guidelines for decision making authorities

Technical guidelines for decision making authorities help to implement a common interpretation of the existing legal framework. If these guidelines do not represent any legally coercive or binding frame by themselves, they are still very useful to advise policy-makers on the way to proceed when a defined set of conditions is given. The authority issuing the guidelines is usually not involved in the decision making process, but has a detailed technical know-how of the topic. Moreover such guidelines can also be addressed to project proponents, planning consultants and interest groups, in order to enhance their actions.

MCA can be either explicitly mentioned or being a tool applied by the user – proponent or competent authority - in order to aggregate the results and justify a decision. As MCA, these guidelines are made to prepare a decision but are not addressed to the process of decision making itself. The main goal is to improve the quality of the decisions by enhancing the technical knowledge on the different criteria and their respective interaction. The principal challenge is to scope the instruction related to the issues determining the decision in an efficient and transparent way.



Example 5.1: Recommendations for developing cantonal conservation and exploitation strategies for small hydropower plants in Switzerland 28

The guidelines have been issued jointly by the Swiss Federal Office for the Environment (FOEN-BAFU-OFEV), the Federal Office for Energy (SFOE – BFE – OFEN) and the Federal Office for Spatial Development (ARE) in 2011, with the purpose to promote the use of hydropower, to implement the Cost-Covering feed in tariffs (CFT)²⁹, and refer explicitly to the target to increase the average annual electricity generation from hydropower by at least 2000 Gwh until 2030³⁰.

The specific focuses of the guidelines are small hydropower projects under 10MW, though 2.2 of the introduction states that “with their focus on the weighing of interests between claims to exploitation and conservation of the watercourses, these recommendations can also be applied to larger hydropower projects.”

²⁸ <http://www.bafu.admin.ch/publikationen/publikation/01593/index.html?lang=en>

²⁹ <http://www.bfe.admin.ch/themen/00612/02073/index.html?lang=en>

³⁰ According to Art. 4 Swiss Energy Act (Energiegesetz EnG SR 730.0): http://www.admin.ch/ch/d/sr/c730_0.html (in German)

After asserting “conflicting claims to watercourses”, the guidelines propose a “three stage procedure” (1.2.1):

- — Development of a strategy: designate watercourses in which rational and reasonable hydropower exploitation is possible in principle and those where conservation has priority.
- — In the project planning for hydropower plants (preferably as early as the feasibility study stage), the watercourse evaluation undertaken in the strategy should also be considered.
- — When considering the concession applications, the watercourse evaluation should also be taken into account

c) Morphology and landscape		
Very valuable	S13: Natural or near-natural watercourses under ecomorphology classification F of the modular concept or existing potential for such watercourses	The very short stretches in the ecomorphological surveys should be summarised in an overall evaluation. Note: In the Swiss Plateau, natural or near-natural watercourses are ecologically very valuable. In mountain regions, however, many watercourses are natural without being ecologically very valuable. The mountain cantons may adapt the conservation category and rating scale to their conditions.
Very valuable	S14: Revitalization planned or completed	As with criterion S13, revitalised watercourse stretches are considered very valuable. In addition, investments made or planned by public authorities should in general not be affected. The framework is given by the cantonal revitalisation plans developed under the revised Waters Protection Act.
Very valuable	S15: Rare types of watercourse	There are special types of watercourse which are not inventoried or protected but which require conservation. It is suggested that the cantons produce a list of those to be protected.
Very valuable	S16: Landscape value	It is suggested that the cantons produce a list of special features that should be conserved such as waterfalls, gorges etc. They can also include cantonal nature reserves and other unexploited and almost un-developed landscapes of high value featuring watercourses.

An example for recommendations for the categorization of criteria on “landscape and morphology”

The “Recommendations” focus on key points in order to rationalize the process of decision making, e.g.:

- Exclusion criteria in the rating process (chapter 6)
- Return of investment
- Optimization of the use of the available potential (chapter 7).

By doing so, it targets the discussion and the instruction process.

They furthermore indicate appropriate tools, that are supposed to support the competent authorities in the instruction process (chapter 4):

- cantonal conservation and exploitation strategies
- Watercourse suitability map
- Quantitative targets for hydropower growth
- Possibility of compensation payments

As these tools usually require the intervention of the territorial elected representatives (by legal, planning or budgetary decision), they refer to the importance of the responsibility by decision making bodies to set a clear-cut frame for the competent authorities. A decision of an authority based on a “watercourse suitability map” e.g. can implement political objectives in a concrete way, comparable to a procedure based on land-use planning zones (and in contrast to decisions concerning demands without that such a frame is available...).

Assessing MCA interfaces for legal and administrative procedures

	Hp approach	Legal compliance	Involved stakeholders	Elements for MCA interface	Issuing body
1 SDAGE (F) Rhône-Méditerranée	Transversal integration, hp not directly addressed	L212-1 Code de l'environnement; Binding for public authorities	Large: multilevel decision makers, research, economic and environment stakeholders;	Not explicit, but possible through stakeholder involvement	Comité du bassin
2 Kembs (F,CH) Concession for hp plant	hp=Main objective	Décret n° 2009-721; Required authorization for energy producer	Applicant; Public authorities from 2 (+1) countries; decision makers from 2 countries; NGO's , interest groups; general public; Focussed on key-elements	Scoping (key elements, „dash board“); Mitigation and compensation	French Ministry for Energy Swiss Ministry for Energy
3.1 Set of criteria, Tyrol (A)	hp=Main objective	Decision of the regional government and parliament; Compulsory reference for the instruction of projects by public authorities	Experts from public authorities; general public; energy producers; NGO's ; government, parliament	Criteria definition Weighing Compensation	Government of the Land Tirol
3.2 sustainable hp in France	hp=Main objective	Non-compulsory contract among partners	Ministry of Environment; elected representatives, energy producers; environmental NGO's; fishermen; sustainable energy NGO's	General: MCA could facilitate implementation	French Ministry of environment and 17 more signees
Swiss cantonal guideline	hp=Main objective	Non-compulsory recommendations	3 government agencies	Criteria deployment	FOEN, SFOE, ARE

KEY POINTS:

Technical guidelines for decision making authorities help to implement a common interpretation of the existing legal framework. Guidelines are made to prepare the decision but do not address the process of decision making itself. The main goal is to improve the quality of the decision by enhancing the technical knowledge on the different criteria and their respective interaction.

A new kind of water governance

The MCA can support a real economic valorization of ecosystems services considering river resource available in mountain regions

How to take decision and orientation between environment conservation, climate change adaptation and economic growth? How to transform permanent handicaps into assets? How to create wealth in a sustainable economic model? These are some of the major challenges that mountain regions have to face in balance between a rich but fragile environment, a specific sociocultural model and some economic capacities to transform additional costs in added value and quality.

Studies and analysis have demonstrated that the territorial dimension is the good framework to organize governance. Water or energy issues are indeed not confined to administrative borders and require a holistic and integrated approach. If administrative borders could not follow geographic and cultural delimitation, it is absolutely crucial for mountain territory to develop a balanced model as close as possible to the ground level. We have identified that regarding the integration of the MCA procedure into legal framework, it seems more efficient to focus on interfaces (soft law governance bodies) at the pertinent scale of governance (river or-local, basin or regional, national or European).

Regional environmental governance

Our analysis is based on the efficiency of a territorial – regional, human and environmental- approach of public policies. This framework could be linked to the EU objective of territorial cohesion but also to the WFD; it has its place in many national policies with territorial approach or consideration at multiregional level (massif, basin, etc.) or local level. The challenge is to consider how people living in the same environmental setting can relay to a similar cultural and political framework to organize, plan and manage specific problems or specific assets. The work of specialist scientists³¹ is another reference for sustainability efficiency of public policies.

This territorial model of governance is very efficient if its aim is to avoid conflicts and to reach a consensus³². But water and mountain management are facing in Europe the difficulty to understand who is doing what in this politics of scale, of interacting levels³³? These levels of politics reflect in turn the interests of particular communities, which you will find either in a region or in an interest group. The internal market and a wider access to information have added interdependences at European level to existing mountain geographic specific interdependences. The question of mutual recognition is therefore in the centre of the discussion of how the European Union and mountain ranges as the Alps can find new ways to answer old challenges (water in mountain) in a changing context (climate change, energy supply).

The rising concept of multilevel governance supported by the Committee of the Regions is certainly useful to understand and to progress. The only problem is that the “pyramidal” analysis of subsidiarity (municipalities-regions – states – EU) neglects the territorial scale that could best create the pertinent interfaces for new governance: Basin governance or mountain governance would be politically efficient to face these challenges.

³¹ Regional Environmental Governance: interdisciplinary perspectives, theoretical issues, cooperative designs (REGOV), Jörg Balsiger and Bernard Debarbieux, Ed. Procedia Social and Behavioral Sciences, Vol. 14-2011, ISSN 1877-0428.

³² The latest communication of European Commission about water management underlines the need to develop innovative solutions such as governance, physical planning, management (cf. COM (2012)216 final “on the European Innovation partnership on Water”)

³³ CF Regional environmental governance in Europe: old and new challenges yet to take up, Ronan Huel, Regional Environmental Governance: interdisciplinary perspectives, theoretical issues, cooperative designs (REGOV), idem.

KEY POINTS:

Water or energy issues are not confined to administrative borders and require a holistic and integrated approach. Regarding the integration of the MCA procedure into normative decisions, it appears more efficient to focus on interfaces (soft law governance bodies) at the pertinent scale of governance (river or-local, basin or regional, national or European). This territorial model of governance is very efficient if its aim is to avoid conflicts and to reach consensus.

Mountain water governance & river basin governance: how to organize partnership with territorial coherence

Water is definitively a strategic issue for the Alps: An important resource (recreation, drinking water, energy, irrigation, industries, etc.), an important factor for natural risks and an important issue for conflicts among mountain stakeholders, as well as between mountain stakeholders and metropolitan lowlands.

We have considered that MCA applied to water and hydropower management is a good tool to gather various actors to a shared analysis.

Title Benefits of stakeholder’s involvement in planning and implementation

- Bring different interests and points of view together
- Address areas which have a complex historical background
- Have a cross sectorial approach to combine different objectives
- Ensure the long term sustainability of the project after external funding is phased out
- Deal with different legislative items and responsible authorities from neighboring countries in transboundary projects

Additionally, MCA is an interesting tool to deal with complex operative questions and to prepare decisions. It can support political action instead to develop another technocratic authority and enables policy-makers or authorities to decide with a framed support of technical services.

Thus MCA in the SHARE project appears in a certain way as a tool to resettle the core responsibility for such strategic stakes as it is hydropower installation, in the hands of the political decision makers.

Example 5.2: Common guidelines for the use of Small hydropower in the Alps (Alpine Convention Platform of Water Management)³⁴

As mentioned above, the « search for locations that are potentially favourable for hydropower and the identification of locations that are ecologically sensitive, rendering them less favourable for hydropower use » has also been identified by the Alpine Convention as a central issue for the sustainable use of hydropower in the Alps. The work carried out by the Platform has published sixteen recommendations for strategic planning activities and as decision support for assessing individual small hydropower plant projects. Recommendation 1 could be directly be supported by the implementation of MCA :

« Recommendation 1: To strike a balance between an increase of hydropower generation and environmental protection, a transparent weighing of the interests based on sustainability criteria has to be carried out ».

Technically this recommendation is supported by a proposal of criteria in order to take into account the hydroelectric potential (4.2.1), the ecological and landscape value (4.2.2), site-specific (4.3.1) and socio-economic criteria (4.3.2).

Further recommendations refer to the renewal of existing concessions³⁵, and the intrinsic opportunity to use this step in order increase the ecologic potential.

³⁴ http://www.alpconv.org/en/publications/alpine/Documents/SHP_common_guidelines_en.pdf

³⁵ Recommendation 7

Refurbishment of existing operating plants and reopening of disused plants in order to optimise the production of hydropower while minimising ecological impacts should be promoted and prioritised. However there should be a

By addressing strategic planning and decision support, the focus is precisely turned to the interface between “technicians” and “politics”.

KEY POINTS:

MCA applied to water and hydropower management appears to be a useful tool to gather various actors to a shared analysis. Additionally, MCA is a good tool to deal with complex operative questions and to prepare decisions. MCA enables policy makers and authorities to decide with a framed support of technical services.

Economic valorization of ecosystem services

The issue of assessment of new (micro) hydropower installation in the Alps that is linked to the adaptation to climate change and green growth cannot be sustainable if it is not respecting ecosystem services.

We particularly know with the TEEB study how important the challenge of economic valorization of economic services is. How to identify the real price of such a public good as fresh water? If we consider the different laws regarding compensation, organization and taxing of energy produced by hydropower plants, energy appears as one the major resources of mountain regions. The resulting informal and historic terms of compensation could also be considered as a first step towards a more complex system.

The TEEB study³⁶ and the work done by many European and international actors –in particular DG Env of the European Commission or UNEP³⁷- is absolutely of interest for mountain regions and producers of ecosystem services.

The Economics of Ecosystems and Biodiversity (TEEB) study is a major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation, and to resume expertise from the fields of science, economics and policy to launch practical actions.

As a part of good governance, decisions and the use of public funds have to be objective, balanced and transparent. Access to the right information at the right time is fundamental to coherent policy trade-offs. Better understanding and quantitative measurement of biodiversity and ecosystem values to support integrated policy assessments are a core part of the long-term solution.³⁸

At regional and local level, ecosystem services could also be included in policy.

periodic examination as to whether further mitigation of negative impacts and better compliance with existing environmental legislation can be achieved by the application of best practice without entailing disproportionate costs.

Recommendation 8

Ecological upgrading of existing operating plants in order to mitigate the impacts on an area’s ecological status and landscape should be promoted by means of incentives in order to accelerate the fulfillment of legal requirements earlier or even to go beyond these minimal requirements

Recommendation 9

Renewal of concessions or licenses can be considered appropriate where it complies with the existing environmental legislation. Nevertheless the ecological potential of the site should be considered and concessions or licenses should be limited in time, being as short as possible without compromising the investment.

³⁶<http://www.teebweb.org/>

³⁷ European Biodiversity strategy COM(2011)244

³⁸<http://www.teebweb.org/Portals/25/Documents/TEEB%20for%20National%20Policy%20Makers/TEEB%20for%20Policy%20exec%20English.pdf>

Six steps to the inclusion of ecosystem services in the local/regional policy

Tableau 1: Six mesures visant à l'inclusion des services écosystémiques dans la politique locale/régionale	
Mesures	Stratégies et outils
Mesure 1: Définir et arrêter la question politique avec les parties prenantes	Cette mesure garantit que tous les aspects importants sont bien pris en compte afin d'éviter tout malentendu lors de la prise de décision et la mise en œuvre <ul style="list-style-type: none"> • L'analyse initiale des parties prenantes et les techniques participatives d'évaluation élucident divers points de vue et opinions sur la politique (Chapitre 3) • Des cadres de gestion tels qu'ecoBudget résolvent en grande partie les préoccupations générales concernant les services rendus par les écosystèmes au sein de différents domaines de gestion publique (Chapitre 4)
Mesure 2: Identifier les services qui sont les plus pertinents	Afin d'établir une première évaluation, merci de discuter de ces questions avec vos collègues (Chapitres 2 et 10): <ul style="list-style-type: none"> • Quels services rendus par les écosystèmes sont vitaux pour ma société et mon économie locales/régionales ? • Qui est le plus tributaire de ces services ? • Quels services sont menacés ? • En quoi une action politique affecte-t-elle ces services ?
Mesure 3: Définir les besoins d'information et sélectionner les méthodes adéquates	Avant de commander une évaluation, il convient de définir quel genre d'information sur quels services écosystémiques est requise. Cela dépendra de la manière dont vous souhaitez utiliser les résultats. (Chapitres 3 et 10). Options: <ul style="list-style-type: none"> • Description qualitative – par ex. importance des services de régulation ou des services culturels afin de sensibiliser l'opinion publique • Quantification biophysique – par ex. tendances qui changent dans les écosystèmes en fonction de différents scénarios, afin d'appuyer les décisions • Évaluation monétaire – par ex. services d'approvisionnement sélectionnés, pour la mise au point d'un programme de paiement
Mesure 4: Évaluer les services écosystémiques	<ul style="list-style-type: none"> • Cadres de conceptualisation des services écosystémiques (Chapitre 2) • Instruments d'évaluation des services écosystémiques (Chapitre 3) • Options en vue d'une analyse des services écosystémiques intégrée dans l'aménagement du territoire et les évaluations environnementales (Chapitre 6) • Manuels, outils et bases de données (Annexe)
Mesure 5: Identifier et évaluer les options politiques	Les informations tirées de cette évaluation peuvent alimenter la politique sous diverses formes (Chapitres 3 et 10): <ul style="list-style-type: none"> • Contribuer au débat dans le cadre d'un processus participatif • Fournir la base d'une analyse coût-bénéfice • Servir d'introduction à une analyse multicritère
Mesure 6: Estimer les impacts distributionnels	Tout changement dans la disponibilité ou la répartition des services rendus par les écosystèmes a une influence sur les gens en fonction de leur dépendance. Il convient de prévoir ces effets qui sont parfois cachés. (Chapitres 2 et 10). Options: <ul style="list-style-type: none"> • Approche reposant sur des moyens de subsistance durable pour déterminer la dépendance • Outils d'évaluation de la pauvreté

TEEB for regional and local policy makers

The balance model that MCA is proposing for SHARE opens a large opportunity to consider both the sensitive place of biodiversity and the importance of the economic value of products. It opens a possibility to design a sustainable model for the development of mountain regions linking them with an increase of transparency on the field of ecosystem services and the production of hydropower. SHARE proposals could also be an efficient way to organize with the support of MCA a system of compensation through eco certification of electricity (green certificates or labels). The market of hydroelectricity would give a price for production that could be identified by MCA to a certain level of quality of river ecosystem. Then we would have equivalence between an ecological service and economic value.

Rewarding benefits through payments and markets:

Payments for ecosystem services (PES schemes) can concern any level from local (e.g. water supply) to global (e.g. REDD-Plus proposals for Reduced Emissions from Deforestation and Degradation, as well as reforestation, and effective conservation – if designed and implemented properly). Product

certification, green public procurement, standards, labelling and voluntary actions provide additional options for greening the supply chain and reducing impacts on natural capital.

Reforming environmentally harmful subsidies:

Global subsidies amount to almost US\$ 1 trillion per year for agriculture, fisheries, energy, transport and other sectors in total. Up to a third of these are subsidies supporting the production and consumption of fossil fuels. Reforming subsidies that are inefficient, outdated or harmful makes double sense during a time of economic and ecological crisis.

Addressing losses through regulation and pricing:

Many threats to biodiversity and ecosystem services can be tackled through robust regulatory frameworks that establish environmental standards and liability regimes. Already tested their performance could still be improved when they are linked to pricing and compensation mechanisms based on the ‘polluter pays’ and ‘full cost recovery’ principles – to alter the status quo which often leaves society to pay the price.

Just remuneration of hydropower regarding its impact on river ecosystem:

In order to take the real cost of hydropower into account, the price of ecosystem and its different elements could be integrated into the issue of concessions and public procurement for hydropower installation.

SHARE gives the opportunity to share a sustainable model of development and to organize new regional environmental governance which both can face the objectives of EU 2020 regarding green growth.

KEY POINTS:

The issue of assessment of new (micro) hydropower installation in the Alps is linked to the adaptation to climate change and green growth. The balance model that MCA is proposing opens a large opportunity to consider both the sensitive place of biodiversity and the importance of the economic value of products. It opens a possibility to design a sustainable model for the development of mountain regions linking them with an increase of transparency on the field of ecosystem services and the production of hydropower.

Evaluation sequence building on scientific information sequence building on scientific



Source: Stephen White, own representation, TEEB

The link between renewable energy and ecosystem services made by SHARE is stimulating to organize the new model of green economy that the Alps could propose to Europe, in a better way. Therefore, Water and Energy should be topics to be develop in a European macroregional strategy for the Alps.

The need of references

Concerning legal and planning procedures, different interfaces support the use of Multi Criteria Analysis (MCA), in order to structure the political decision making process and to introduce better transparency to the priority of criteria for certain river stretches.

Projects, strategic planning and guidelines request an MCA driven support system, not only in order to retrace the criteria that has influenced an HP decision, but also, in order to adapt the complex system of different criteria to new policy priorities or technical or ecologic standards.

So far MCA is in the process of being established as a technical support system at the edge of the technical assessment, governance and economic tools. It is linked to participation of stakeholders, negotiation and compromise. Only if there is agreement on this prerequisite, MCA can contribute to illustrate decisions, to assess forecasts or the impact of mitigation.

In order to further develop its value for the preparation of HP decisions in a participatory process, references will have to be built for the identified interfaces. For that matter the soft integration of MCA should be deployed and monitored in a real time assessment, including stakeholders and decision makers, throughout the draft of a strategic plan, the evaluation of a project and the conclusion or update of hp related agreements. A first step would be the interaction with public authorities on the identification of relevant HP pilot cases that could directly benefit from the results of the SHARE project. In a second step, the possible interfaces with MCA should be drafted and detailed in a long term action program that already includes, from the very beginning, a strategy for monitoring and transfer.

Conclusions

The issue of assessment of new micro hydropower installations in the Alps linked to adaptation to climate change and green growth won't be sustainable if ecosystem services aren't respected. Within this context, the purpose of share is to develop a decision support system to help local decision makers to improve on an unprejudiced base the quality of their decisions by enhancing the technical knowledge on the different criteria and their respective interaction. During the different phases of plans and programs related to water management, the integration of MCA process appears as a powerful and flexible tool at the disposal of the policy-makers to deal with complex operative questions and to prepare decisions. It allows to gather various actors to a shared analysis and to shift the set up of relevant criteria from a case by case discussion to a more structured and systematic setting, increasing the transparency of HP decisions. In this way, the Multi Criteria Analysis (MCA) is a modern and scientific way in order to plan balanced decisions considering social, cultural and economic issues and offers real chances to organize a better partnership and multilevel governance. The balance model that MCA is proposing opens a large opportunity to consider both the sensitive place of biodiversity and the importance of the economic value of products:

Acronyms

CFT	Cost-covering Feed in Tariff
DSS	Decision Support System
EC	European Commission
EIA	Environmental Impact Assessment
EU	European Union
HP	Hydropower
MCA	Multi Criteria Analysis
NGO	Non Gouvernemental Organization
PES	Payement for EcoSystem
REDD	Reduced Emission from Deforestation and Degradation
SAGE	Water Developemnt and Management Plan
SDAGE	Water Development and Managment Master Plan
SDAP	Sustainable Development Action Plan
SHARE	Sustainable hydropower in Alpine Rivers ecosystems
TEEB	The Economics of Ecosystems and Biodiversity study
WFD	EU Water Framework Directive

Website, References and Further Reading

EASAC	http://www.easac.eu/
DG Environment	http://ec.europa.eu/dgs/environment/index_en.htm
Energy Impact Assessment	http://ec.europa.eu/environment/eia/home.htm
DG Energy	http://ec.europa.eu/energy/index_en.htm
EEA	http://www.eea.europa.eu/
Greenfacts	http://www.greenfacts.org/fr/index.htm
TEEB	http://www.teebweb.org/
Alpine Convention	http://www.alpconv.org
Regional Environmental Governance Observatory	http://www.reg-observatory.org/
Federal Ministry of Justice of Germany	http://bundesrecht.juris.de/
French Environmental Code	http://195.83.177.9/code/liste.phtml?lang=uk&c=40
SDAGE of the Rhone-Mediterranean Basin	http://www.rhone-mediterranee.eaufrance.fr/gestion/dce/sdage2009.php
Water information system of Austria	http://wisa.lebensministerium.at/article/archive/29368
Bavarian State Ministry of the Environment and Public Health	http://www.lfu.bayern.de/wasser/wrrl/bewirtschaftungsplaene/index.htm
Po River Basin Authority	http://www.adbpo.it/on-multi/ADBPO/Home/articolo1080.html
Ministry of Economic Development and Technology of Slovenia	http://www.mgrt.gov.si/en/
Regional Directorate for Environment, Spatial Planning and Housing of Alsace	http://www.alsace.developpement-durable.gouv.fr/la-production-d-electricite-a326.html
Federal Office for the Environment of Switzerland	http://www.bafu.admin.ch/publikationen/publikation/01593/index.html?lang=en

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- Directive 2009/28/CE of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- Directive 2000/60/EC of the European Parliament and of the Council “establishing a framework for a Community action in the fields of water policy.