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Summary and Conclusion of River Basin Management Plan Reviews

The Alpine Convention set up a platform on “Water Management in the Alps” at the Xth Ministerial Alpine Conference in Evian, March 2009. Part of the mandate of this platform is to examine whether alpine specific issues are adequately covered within national river basin management plans prescribed by the EU Water Framework Directive.

Methodology

The platform’s presidency supported this task by providing a draft template, which was discussed in some detail in the group. Basis for this draft template was on the one hand the list of major water management issues and challenges highlighted in the report “State of the Alps II - Water and Water Management Issues”. On the other hand issues that emerged in the platform’s discussions have also been considered. Taking into account the feedbacks on this draft template, the platform’s presidency prepared a final version of the questionnaire. This template is subdivided in 7 categories of information, as they are

- climate change,
- monitoring,
- continuity interruptions / morphology,
- hydropower,
- ecological status,
- legal status,
- other issues (e.g. artificial snow making, water use conflicts....).

The template was distributed in July 2010; replies were requested from the national representatives to the platform for end of August / beginning of September 2010. Replies have been received from Austria, France, Germany, Italy and Switzerland. The received replies have been compiled in order to

- pave the way for an assessment of findings and to draw conclusions
- to show findings but also potential areas for further improvements.



Thus, the compilation of the replies was the basis for drafting a summary. This draft summary has been circulated for comments to all members of the platform. A revised version was also provided as input for the 3rd Int. Conference on Water in the Alps, taking place in Venice, 25/26 Nov 2010. The final summary in hand with the incorporated comments from Venice provides a concise overview of the present state as well as conclusions.

General Remarks

The reference area for evaluation is the Alpine perimeter of each country according to the Alpine Convention. General findings may, however, refer to the entire national territory and are therefore also valid for the Alpine region. For example the basis for this review is for Austria the “Nationaler Gewässerbewirtschaftungsplan”, for France it is the SDAGE (Schéma directeur d'aménagement et de gestion des eaux) of the Rhone-Mediterranee basin, for Germany and Italy their regional river basin management plans.

As a non-member of the EU, Switzerland is not formally subject to the EU-Water Framework Directive (WFD) and the Swiss water legislation does not include a regulatory framework as it is given by the WFD. Therefore its legislation does not foresee the elaboration of management plans at river basin level. Therefore replies from Switzerland were based on general information on Swiss water policy with regard to the raised issues.



Findings

1. Climate Change

Changes were reported to have been observed by almost all countries within the Alpine perimeter. Basically all countries reported a statistically significant upward trend in air temperature. For precipitation, ground water tables and river flows the observed and projected changes are less marked and homogenous. Available scientific information is considered to be sufficiently sound for temperature; however impacts of climate change on precipitation and in particular for river flows are more known in a qualitative than quantitative way, with still considerable uncertainty, in particular for regional scales and sub-annual patterns. This holds true also for groundwater. This is why the available information on climate change with respect to hydro-meteorological changes at basin level was by none of the 5 replies considered to be adequate with regard to the reliability level in order to derive concrete actions. More research and studies to enhance the level of knowledge is thus considered to be necessary to derive concrete measures and actions. This is why focus seems at present on “no regret measures” respectively a climate check of measures. Only Italy reported concrete measures (e.g. resource conservation plans, promoting (sound) irrigation management...).

Prolonged droughts and water scarcity are an issue in the southern Alpine perimeter, but much less (apart from episodic droughts) in the northern Alpine perimeter.

2. Monitoring

Networks for monitoring water quality and quantity are in place all over the Alpine perimeter (see also RSA II); however some countries see to some degree a need for improvements (France considers the network in place “inadequate to manage local uses”; Italy sees “more financial resources needed”).

A particular challenge addressed in the replies is the coverage with monitoring sites in higher altitudes (> 1000 m asl) due to limited accessibility and elevated costs;



however it has also to be acknowledged that pressures and impacts are less marked in higher altitudes. This is why several countries classified the monitoring coverage in higher altitudes as adequate.

Thus, some of the replies state some room for assessment and optimization of the monitoring network for the next WFD implementation cycle.

3. Continuity interruptions / Morphology

Hydro-morphological improvements are obviously the main issue in the Alps due to the dominant drivers and pressures in place. Impacts on water quality in the Alpine perimeter are seen as minor issue for AT, D, CH while France and Italy are reporting some importance of these aspects.

Due to the considerable number of water bodies failing good status respectively failing good ecological potential, all countries report to have schemes in place to prioritize action and measures. This is why it can be implicitly assumed that only a share of water bodies / river stretches will be remediated for good status until 2015.

Four out of five countries have reported financial support schemes to be in place to fuel concrete remediation measures, thus contributing to achieve “good ecological status” respectively “good ecological potential”. One country reported still ongoing developments at national and regional level.

4. Hydropower

A high number of hydropower plants are in place within the Alpine perimeter. Just to give an idea about the dimension, there are - apart from the large installations already addressed in RSA II - a few thousand stations with an installed capacity below 1 MW situated in the Alpine area. And the Alpine area is still attractive for further development of hydroelectric power, given the remaining hydroelectric potential and the economically favorable conditions. This fact and the sensitive ecosystem of the Alpine area led to strategic plans for installing new hydropower facilities (explicitly addressed by Austria and Switzerland) to increase on the one



hand the share of renewables and on the other hand enhancing environmental aspects.

Environmental aspects have been taken into account with different provisions and measures enshrined in the RBM plans or in national legislations. There are provisions in place with regard to residual flow and fish passes in all 5 countries as well as financial incentives that are in some countries foreseen to restore river continuity. Measures for mitigating negative effects due to hydro-peaking have been addressed in four country replies. They are mostly aiming at a mitigation of impacts through structural measures, but not aiming at a change of the mode of operation.

5. Ecological status of alpine waters

Five countries reported on the ecological status of waters. The results are based on maps and tables or figures (e.g. Austria). As can be seen on the table below, there is a certain share of water bodies (rivers) in a status less than good. From a general point of view the share of water bodies not in good status seems to be higher in the northern part of the Alpine perimeter.

Country	River length[km/wb]	high Status [%]	good Status [%]	worse than good status [%]
Austria	19.094 km	22	24	54
France	12.500 km	12	59	29
Germany	150 water bodies	1	57	42
Italy ¹	557 water bodies	2,7	74	23,3
Switzerland	not applicable	not applicable	not applicable	not applicable

The share of water bodies designated as heavily modified water bodies (HMWB) is in most countries quite moderate.

Country	HMWB [%] (rivers)
Austria	9,9
France	20
Germany	13
Italy	5,9
Switzerland	not applicable

¹ Entire Catchment of the River Po



6. Legal status

The river basin management plans are binding for all state authorities; this was mentioned in all received replies. However, the legal and formal status is different in the individual countries, some have ordinances or acts, others binding documents. Transboundary aspects have also been addressed in the replies of all 5 countries. Multilateral and bilateral commissions as well as technical arrangements have been reported by all 5 countries to be in place and considered in the river basin management plans.

7. Other issues

Other issues like artificial snow making or water use conflicts are also mentioned in some river basin management plans.. For example, artificial snowmaking has been addressed by one country as a relevant issue, whereas four countries did not see this to be a relevant water management issue at national level nor at regional level. For water use conflicts, only rather patchy information has been reported such as some conflicts among different water users and in this respect in particular hydropower was mentioned explicitly.



Conclusion

The experts of the Platform “Water management in the Alps” reviewed the alpine-relevant River Basin Management Plans (RBMP) which were available per end July 2010, in particular with a view whether alpine specific issues are adequately covered; Switzerland does not have an obligation to establish such plans, but is cooperating in international river basins.

Based on the feedback of the Parties of the Alpine Convention the review concludes that alpine specific issues exist mainly linked to hydropower generation, river engineering, flood protection, climate change and resulting impacts therefrom. River morphology and river hydrology have to be seen as the major Alpine specific issues: these issues are extensively addressed – including remediation measures - in all RBMP as well as in Switzerland.

Provisions for hydropower seem to be in place in all countries to ensure appropriate residual flow as well as river continuity via fish passes for new installations. A particular challenge will be

- the remediation for old installations in place, where efforts of upgrading these installations in order to meet modern ecological standards as well as to enhance efficiency will go beyond 2015
- hydro-peaking, where efforts seem to focus more on the remediation of impacts through structural measures (retention basins) but not on changes of the mode of operation. This seems to be due to the overriding importance of storage and pump-storage schemes to meet peak demands and to stabilize distribution grids.

Only a share of water bodies showing not good status / not good potential will be remediated by 2015. Thus, a close follow-up of implementation of program of measures will reveal whether measures foreseen until 2015 will be put into practice in time and appropriate extent.

Based on the received information there seems to be a need for a closer assessment in particular for



- optimizing the monitoring network for the next cycle of River Basin Management Plans
- climate change: climate change is addressed in all replies. All countries consider the level of knowledge to be not sufficiently reliable for deriving concrete action. Therefore, the focus is at present more on “no regret measures” and flexible, adaptable concepts rather than concrete measures. Enhanced insight into future changes in the hydro-meteorological parameters and its consequences for water management (e.g. for defining residual flow under climate change...) is deemed necessary to provide solid grounds for more concrete action in the forthcoming revision of river basin management plans for the period 2015 to 2021.

The forthcoming years will be devoted to the implementation of the program of measures of the management plans as well as from 2012 onwards on the review of the plans in place. The interim report, which is due 2012, 3 years after the publication of the RBM plans, and which describes progress in the implementation of the planned program of measures, as well as the second analysis of the characteristics of the river basin district, which is due 2013, will reveal whether the implementation of the program of measures is on track. Both reports will have to be submitted to the European Commission, which will act in line to its duty as guardian of European legislation.