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Workshop B

**Integrated Water Resources Management – experiences from the
Loire and Rhine**

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Introduction

The Chernobyl year 1996 was also a disaster for both the Loire and the Rhine rivers. The wild Loire was planned to be developed for flood management and economic purposes, the regulated Rhine was said to be biologically dead after a chemical pollution.

These two rivers so different – one being the longest French river, the other the largest west European waterway – after they suffered heavy pressure, became a reference at European level for ecosystem approach at basin scale, integrated management, public participation, wetlands restoration, flood mitigation.

A disaster was needed to set this new integrated management in motion but it triggered a series of innovative approaches of which the EU Water Framework Directive could benefit.

Setting the scene

The **Loire** with its almost natural river dynamics was threatened with a so-called “integrated development plan” including four dams in the first phase, structural flood defence measures, navigation development, spatial development in flood prone areas, etc. As soon as the plan was made public NGOs and inhabitants stood up against it. The campaign could show that the plan was totally unbalanced and principally aimed at protecting new urban areas against floods, providing water for irrigation, cooling of nuclear power plants and some leisure activities, and flushing contaminated water, especially during the low-water season. Also the water and river authorities were several and although France already had a river basin management system (since 1964) there was no real integrated and participative management and wetlands were not taken into account as such.

Eight years after, the government adopted a genuine integrated management approach, modified the Water bill and the Public Participation bill and established a special interdisciplinary unit that through coordination of all river actors aimed at:

- mitigate floods to protect the population,
- improve the water resources and natural and rural areas management,
- enhance and restore of the natural, landscape and cultural heritage.

After a long powerful and successful campaign, NGOs got support from the EU in the frame of a LIFE Programme that allowed for a chain of 10 field projects alongside the

river and its main tributary, the Allier. From 1993 to 1998, these projects provided biological and ecological data, land purchase, restoration of habitats, environmental education and public participation. Overall, these field projects gave a concrete shape to the “*Free space for rivers*” concept requested by the NGOs during the campaign. It must be recalled here that the NGO coalition called “*Loire vivante*” was the first in a series of living rivers campaigns or projects in the world and the free space for rivers was given public recognition in several countries (ex: Switzerland, Austria, Netherlands) since then.

The **Rhine** was an open-air sewage and the largest west-European inland navigation waterway. It was internationally managed by the International Commission for the Protection of the Rhine (1963) as well as the Central Commission for Navigation. Both institutions did exist for a long time but were not very active. The chemical disaster boosted the 5 riparian governments to deal with the biologically dead river. Its largest groundwater resources in this part of Europe that feeds millions in drinking water was threatened. Moreover, in 1993 and 1995 two big flood events recalled that over 85% of the river floodplains had been destroyed through river development and that ca. 1500 billions € damages could occur not to speak of human lives.

After the chemical disaster, studies showed that floodplains perform a number of important ecological, social, economic functions in relation to the groundwater, the adjoining areas, and the upstream-downstream dimension within the river basin. Time also plays a role.

Under coordination of the ICPR a global Action Programme was set up in 1987 to restore the water quality and the ecosystem and to get all migratory fish species back into the river in the frame of the “Salmon 2000” programme. In 1998, the Ministers Conference adopted a Flood Management Programme favouring non structural flood defence measures. After all these measures were taken and implemented through a coordinated work programme, the Parties worked out together with NGOs a new global Vision for the Rhine that was materialized by the Convention for the sustainable development of the Rhine adopted in 1999 in Bern (Switzerland) and by the Rhine 2020 Programme adopted by the Ministers Conference in 2001. These new instruments widen the competence of the Rhine Commission and allow for an actual integrated management at basin level although this geographical unit is larger than the 5 ICPR member countries. Since December 2000 all Rhine riparian countries except Switzerland have to implement the EU Water Framework directive.

The Rhine managers had to cope with the economic uses of the river and with densely industrialised and populated areas. This is presently the challenge they face while implementing the flood management plan since it needs to allow flood water running in agriculture or recreational land. Nevertheless this is an actual case study at large scale for having integrated habitat restoration for biodiversity improvement and non structural flood retention schemes. By 2020 25% of the flood risks as well as 70cm of the flood level downstream the regulated section will be reduced.

Lessons learned

- From 2 different starting situations, but triggered by strong events, active efforts have led to integrated river basin management,
- In both cases, floods are central elements,
- In both cases areas have been dedicated for water (free space or polders)

- A key issue for both rivers is fluvial continuum : on the Loire 2 dams have been destroyed, on the Rhine, fish passes are built and the hydropower dam concessions are renegotiated)
- Habitats restoration and biodiversity improvement are integrated and given the same importance as water quality and flood mitigation. On the Rhine an ecological network is one of the 3 “Rhine 2020” objectives. On the Loire the NGO field projects provide for a kind of network and are part of the Natura 2000 network. Rivers and wetlands’ functions were recognized especially thanks to a high level expert group in France that defined them as natural infrastructures (Rapport Bernard) and in Germany with the floodplains institute based in the Upper Rhine section.
- Although in both cases, neither the Ramsar convention nor the natural heritage one or the MAB programme were a priority, since the rehabilitation efforts, designating river sections is now considered as a quality label.
- The people strongly opposed the Loire development plans and requested that the river stays the “last European wild river”. For the Rhine, now that its quality highly improved, there is a strong request for improving the river landscape and getting back to a human use along the regulated section. There is a general wish to enhance the cultural values of the rivers and protect or re-build a fluvial landscape. Nevertheless there still exists a kind of fear of floodings after many years behind dykes’ protection that leads some people to reject flood retention areas close to villages.
- The Loire and the Rhine rivers are considered as a reference at European level respectively for its natural river dynamics and for its integrated Action Plan and Flood Action Plan.

Integrated River Basin Management

Cooperation and coordination: a challenging task

- Transborder cooperation is not always more difficult than at national level according to regional conditions. Regional autonomy or competition can make coordination difficult. Difficulties in harmonisation can lead to a low profile implementation.
- A useful national (for the Loire) and international (for the Rhine) multidisciplinary team have been set up for coordinating the implementation of the work programmes.
- Making each country or region responsible for a river section, is a good way for implying all actors in the implementation process and gives the opportunity to learn from the other partners but it can be time consuming.

A vision at river basin scale is crucial but a technical instrument can help implementing the ideas and measures:

- The EU Water framework directive was adopted after the Loire and Rhine new Action programmes came into force. This technical instrument that has priority given its implementation calendar, on one hand does not directly address wetlands and floods and disturbs the implementation of the political vision agreed on before but on the other hand provides the member countries with the same methodologies and obligations.

Be innovative:

- The EU financially supported the innovative approaches experienced on both rivers: the LIFE programme for protecting, restoring and enhancing wetlands habitats along the Loire and the Interreg fund for testing flood management approaches in the Rhine basin. These 2 issues are exactly the missing ones in the water framework directive but are developed in separate guidance documents.
- Thanks to the previous plans, wetlands and biodiversity are included in the IRBM under the Rhine ecological network on one side and under the habitats enhancement projects on the Loire side.
- Wetlands and flood mitigation combine perfectly. The Upper Rhine integrated Rhine programme aiming at combining biodiversity improvement and flood mitigation through floodplains restoration as well as the Free space for rivers concept both prove that expensive structural measures are not the best solution to protect the people against floodings. The Rhine riparian inhabitants suffer a higher flood risk now than before regulation.

Public participation: can be improved

- As well in the Loire as in the Rhine cases, public participation was not obvious. It took NGOs over 2 years before they sat at the same table with other water management actors in order to discuss over a reorientation of the former so-called integrated development plan of the Loire. An actual partnership developed after the NGO Loire Nature Programme (1993) and the official Plan Loire Grandeur Nature (1994) were approved. Rhine basin NGOs were officially allowed as observers to the ICPR only in 1998. In the frame of the WFD working groups the observer status was given to the ICPR NGOs but only one NGO representative was admitted to attend each working group. They can access the work documents and submit observations but public participation keeps on a low profile. Elected representatives are not at all admitted at the exception of Germany and Switzerland. At national level there is no public participation as such in relation to the Rhine work plans.
- Conversely a large partnership could be built around the protection of species especially the salmon.

River basin management must integrate spatial planning:

- Non structural flood management measures request more land and encroach on economic activities like agriculture or urban areas. On the Loire constructions in flood prone areas will have to be destroyed in order to let flood waters run. On the Upper Rhine section, so-called polders will retain flood waters on cultivated lands.
- Upstream-downstream solidarity and river continuum imply an effective spatial planning together with capacity building and environmental education.