ECRR

Rijkswaterstaat
Ministerie van Verkeer en Waterstaat
Centre for Water Management

10 years
ECRR Network

Synergies between River Restoration and River Management; Focussing on Natura 2000 and Ramsar sites

28 and 29 May 2009, Lelystad, The Netherlands
Agora Theatre and Conference Centre

The European Centre for River Restoration was informally established in 1995 as part of a joint LIFE demonstration project between Denmark and the United Kingdom. The results of a European-wide enquiry in 1998 showed a sufficient baseline for the broadening of activities of the initiative to other European countries. The official constituting Meeting of Parties of the European Centre for River Restoration (ECRR) was held in Silkeborg, Denmark in 1999, in the presence of 55 participants from 22 European countries.

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Development of the ECRR

The overall objective of the ECRR is to support the development and implementation of concepts on river restoration into integrated and sustainable river basin management initiatives in the European Water Framework Directive (WFD) by providing a platform for information exchange between people and organizations. The ECRR functions as a non profit organization with participants mainly from the European continent. The ECRR provides an international network platform in which all practitioners have the opportunity and responsibility for the exchange of information and experiences, through newsletters web-based homepages and regular meetings. Within its structure, the ECRR facilitates and encourages the establishment of national networks, organizing individual experts and countries active in the field of river restoration in individual countries.

Jubilee speech to celebrate 10 years ECRR by the chairman Bart Fokkens.

Today the ECRR has about 250 members, with together about 2500 individuals who are in one way or another river restoration practitioners. The ECRR publishes periodically newsletters and organizes workshops seminars and conferences. The executive secretariat is an important factor in this. The secretariat is being transferred to another country about every three to four years. The start was with Denmark (NERI), after that The Netherlands (RWS – Centre for Water Management) took it over. And at the time of the Lelystad Seminar to the occasion of the 10th anniversary ECRR, the secretariat was with the Italian Centre for River Restoration (CIRF) and it was foreseen and realized that the Dutch Government Service for Land and Water Management (DLG) would be responsible for it. In almost all countries of the European continent there are ECRR members and in 11 countries there is a national River Restoration centre, with the same objectives on a national level as the ECRR has on the EU level.

Since the official establishment, three important international conferences on River Restoration were organized by the ECRR, in the Netherlands in 2000, in Croatia in 2004 and the last one in Venice in 2008. The Venice conference had over 300 participants from all over the world. The proceedings of this conference present very well the state of the art of River Restoration all over the world by the year 2008. The first initiatives on ecological river restoration date from the eighties and originate mainly from Germany, the United Kingdom and Denmark. Nature conservation and angling were instantly the first driving forces.

Ecological Restoration


Ecological restoration of the landscape in a Waal floodplain near Gameren, The Netherlands.

There are a number of guiding principles for the ecological restoration of rivers. First of all comes the restoration of the dynamic characteristics of the river system. The restoration of the hydro-morphological processes is an important measure to achieve this. The adaption of human needs to the natural river system is another important factor. Throughout ages, modifications in rivers and floodplains have been initiated by man to adapt them to human needs. Often these modifications focused on improving one function of the river, as a result of which the potential of the river to support other functions deteriorated; most of all the ecological function was negatively affected.

River restoration initiatives aiming at improving the multi-functionality of the riparian zone by (partly) reinstalling natural hydro-morphological processes should aim to mimic these attributes. This requires an increased understanding and institutional capacity to accept some levels of both variability and unpredictability in the ecological outcomes of river restoration projects. Besides defining short-term objectives, river restoration projects should also formulate long term restoration targets that are less predictable but more representative of real system attributes. Today there is an increased understanding in society about the loss of functionality due to mono-focal river management practices, and of the increased benefits of a healthy, multifunctional river system for society. During their planning phase, river restoration projects typically use some form of information on historical or contemporary reference conditions to define objectives and to help the evaluation process. As such there are often no appropriate reference systems to use. Ignorance of regional land use and river history can lead to restoration that sets unrealistic goals. Hydrologic connectivity refers to water mediated transfer of matter, energy and organisms within or between components of the river environment- the aquifer, floodplain, river bed etc. Connectivity operates in longitudinal, lateral and vertical dimensions and over time. In general the vision of river restoration is simple and practical. River restoration takes into account the historical situation-both physical –morphological and natural in relation to human activities- and aims to preserve and capitalize the remaining natural values, in the context setting of socio-economic developments towards a more sustainable approach. The high investment costs in ecological restoration are not realistic in economic sense, as natural values are poorly expressed in money equivalents.

Initially the river restoration was guided by the Ramsar Convention for wetlands and the Convention on Biodiversity. But in the meantime, there are a number of EU Directives that are very supportive to river restoration. Especially, the EU Water Framework Directive (WFD) and the Bird and Habitat Directive (B&HD). The Natura 2000 sites are quite specific in this context. Although these directives require a minimum level with respect to the ecological conditions, ecological river restoration is making use of these directives for the ecological restoration of the river ecosystem as an integral part of integrated river basin management (IRBM). It might be clear that there are considerable regional differences in the approach of river restoration, due to the different river characteristics as well as in the past as in the present.

Synergy with river management

During the seminar examples of river restoration strategies, concepts and projects, leading to synergies between river restoration and river management. Like the implementation of the Rhine Action Program, in specific with respect to the reintroduction of the Atlantic Salmon in North-Rhine-Westphalia in Germany. After severe river pollution in 1986 (Sandoz-accident, Switzerland) the Member States of the Rhine basin started an ambitious program aiming at the ecological rehabilitation of the river. The ecological status should improve to an extent that migratory fish species like Atlantic salmon would be able to colonize the River Rhine again.

Sampling of the natural Salmon reproduction in North-Rhine Westphalia, Germany.

The International Commission for the Protection of the River Rhine (ICPR) has chosen the salmon as a flag ship species for ecological rehabilitation (salmon 2000). After a prolongation, this Rhine Action Programme (RAP) is now scheduled until 2020 and ecological rehabilitation is integrated into the efforts of the Water Framework Directive to reach the good ecological status of running waters in the Rhine basin. In 1988 the first juveniles were released into the River Sieg, a tributary of the River Rhine, in North-Rhine Westphalia. In 1990s, the first adult salmon returned to this river and the first natural reproduction was observed in 1994. Since 1994 more than 10 millions juvenile salmon have been released into tributaries of the Rhine. All together more than 5.000 adult salmon were recorded returning from the sea to the Rhine. Natural reproduction is regularly observed in several tributaries but its contribution to the salmon

population is still less in comparison to ongoing stocking activities. Quality of spawning and juvenile habitats is not sufficient at least in some parts of the Rhine basin to sustain a natural salmon population. Dams still limit the access of adult salmon to the majority of the potential spawning areas and juveniles have to pass hydropower plants during their downstream migration. Sluices in the Rhine delta built to protect against flooding from sea hinder free migration of salmon from freshwater to the sea and vice versa.

Area of ecological restoration in the Danube Delta, Romania.

Large parts of the Upper Danube have been totally regulated, but the middle and lower Danube including Danube Delta still preserve areas with natural features. The last part of 863 km of the Lower Danube still preserves the longitudinal connectivity, whereas 84 % of the floodplain (out of total 514,000 ha, located mainly in Romania) has been drained during 1960-1990 period, affecting the lateral connectivity. The Danube Delta Biosphere Reserve (DDBR) is part of the Danube floodplain, but it has a distinct identity as one of the largest wetland in Europe, part of the MAB-UNESCO programme and named in the World Heritage list. DDBR hosts a great variety of natural ecosystems despite of 17% of embankments area (out of total 580,000 ha). Following the initiative of WWF, four riverine countries (Bulgaria, Moldova, Romania and Ukraine) have signed in June 2000 a commitment declaration to implement the Lower Danube River Green Corridor (LDGC) by restoration projects for 225,000 ha and designation of new protected areas of 160,000 ha besides existing protected areas of 775,000 ha (including Danube Delta) for nature conservation. Since Romania and Bulgaria have joined EU in 2007, the process of designation of protected areas has been speeded up, including Natura 2000 sites in the common border areas (a number of 144 sites are SCIs and 91 are SPAs). The protected areas designated by the end of 2008 represent 80% of the total LDGC area. This achievement proved that the objective set in 2000 for nature conservation was realistic. Romania hosts along to the DRGC 19 SPAs covering 875,000 ha and 11 SCI covering 783,000 ha (overlapping upon 62,000 ha). Nevertheless the achievements by the end of 2008 for river restoration in the Lower Danube are small comparing to the objective set up in 2000: 46,900 ha have been reconnected to the Danube system in the LDGC countries (14%). The main constraint is the existing agriculture land use, but also the navigation. A wetland restoration program has been already started in Danube Delta as a priority objective for Biosphere Reserve, before LDGC agreement. An area of 15,000 ha has been reverted to wetlands out of a total of 97,400 ha of polders in the Romanian part of the Danube Delta by the end of 2008, but successful projects have been implemented in Ukraine (e.g. Tataru island, Kugurlui lake) and Bulgaria (Belene island, Kalimok marshes) as well.

Today, only very few of Europe's rivers still run freely from source to sea, because of human-induced modifications to store water, facilitate navigation and mitigate floods. Such alterations of natural flow regimes in rivers and the fragmentation of waterways (through dams, pipes and levees) often contribute to the loss of aquatic habitat, species extinction, invasions of alien species, water pollution and depletion of groundwater aquifers. The Ramsar Convention on Wetlands addresses these issues. However, the network of Wetlands of International Importance (Ramsar sites) still only includes very few sites directly related to rivers in Europe. More Natura 2000 sites concern river stretches and their floodplains. For the management and restoration of both, the biggest challenge continues to be the ability to conduct a "Critical Path" approach, integrating wetland ecosystem restoration and site management into river catchment management planning. Demographic developments that produce increasing urbanization and development of transport and energy infrastructures along rivers and in their floodplains, as well as the modification of water cycles and flows, linked to climate change, still cause an increased river and floodplain habitat alteration. Restoration of damaged ecosystem services, accounting for them and preparing payment schemes that will assure their sustainability become therefore increasingly important. Ramsar and Natura 2000 sites provide overlapping and complementary assets as showcases for future developments needed. The Convention provided important tools to this end.

Methodological aspects.

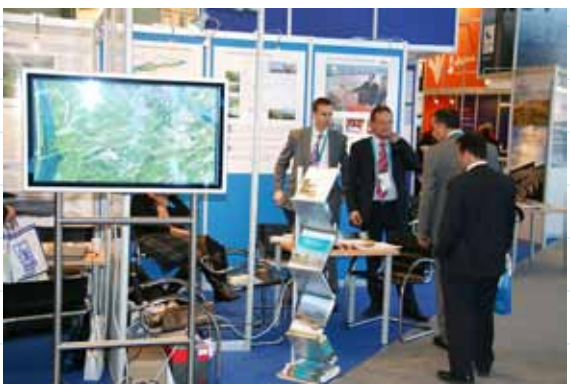
In the past fifteen years quite a lot of river restoration studies and projects were carried out. From these experiences, the river restoration community learned quite a lot about bad, good and best practices of river restoration. And this made clear that more methodological approaches for river restoration should be developed and tested.

Surveying the Orbigó River, Spain.

The last three years the Ministry of the Environment and Rural and Marine Affairs in Spain, through its Directorate General for Water and the associated river basin authorities, has prepared a series of tasks focused on restoring the processes that constitute the natural dynamics of river systems. In this context, the Water Commission of the Duero Basin Authority is launching the project "Improvement of the ecological state of the Órbigo River" in the provinces of Leon and Zamora in north-western Spain. The study of possible project actions is based on an analysis of the problems facing the fluvial system associated with the Órbigo. This analysis is structured in two parts, considering the current state and a reference state of the river. Four thematic areas are characterised for each situation:

- flow regime
- fluvial morphology
- water quality
- biota

A number of indicators are defined for each thematic area and are quantitatively evaluated by means of different parameters. The problems associated with each indicator can be quantified by comparing the values assigned to each pair of parameters (one for the current state and the other for the reference state). The actions arising from the problem analysis need to be focused on minimising the detected differences. This method also allows the degree of compliance with objectives to be evaluated after each intervention by reassessing the established parameters and comparing them with the defined project objectives. The mentioned projects show part of the objectives pursued by the Water Framework Directive, using the indicators related with the four areas of characterization mentioned (flow regime, fluvial morphology, water quality, biota), coincident with the philosophy of the monitoring parameters described in the WFD. With regard to the objective of the project, it consists of the elimination of some of the pressures that the river Órbigo is subjected to mainly bank occupying and transversal connectivity loss, reducing the impacts derived from them. As added value, this reduction is quantified in the denominated objective image of the project.



Presentation of the Dutch IJssel by-pass project Kampen at the World Water Forum 2009 in Istanbul, Turkey.

The River IJssel in the Netherlands is a major branch of the River Rhine, the 3rd largest river of Europe. It discharges into the Lake IJsselmeer. The IJsseldelta is a low-lying area that is threatened by floods from both the river IJssel and from the Lake IJsselmeer. Several major spatial developments are planned in the IJsseldelta in the coming decades. The municipality of Kampen has planned some 4000 houses, a new railway line (the Hanzelijn) is being constructed at the moment and two highways (N50 and N23) will be reconstructed in the area. Furthermore, a river bypass is foreseen as one of the international measures to increase safety against flooding along the river Rhine system. All these separate, potentially conflicting spatial

developments are coordinated in Project IJsseldelta. In 2005 the Province of Overijssel initiated the process of drawing a sustainable development plan for the IJsseldelta area, with a strong focus on climate adaptation. The challenge was to combine and integrate several spatial developments (housing, infrastructure, leisure, nature, agriculture), together with the construction of a so-called bypass of the river IJssel. The result is an integral plan that is supported by more than 20 governmental and non-governmental organizations. The plan is broadly supported by the public, because it is based upon a draft of the bypass that was made by the public (mostly farmers, assisted by planners and professionals). A vital element in the process of gaining public support for the plan was the face-to-face meetings with the people at 'the kitchen table'. Worth mentioning is that the bypass follows the alignment of an old sea arm that still can be seen on an historical map of the IJsseldelta area of 1724. Instead of building higher and stronger dikes a new strategy has been chosen: to add space to the floodplains of the rivers. This strategy - a small revolution and a real 'paradigm shift' in water management - is being adopted within the Dutch programme 'Room for the River'. Instead of a foe, water is becoming more and more a friend for the planners and water managers nowadays. Project IJsseldelta is a good exponent of this new philosophy in water management. With the construction of the bypass some 350 hectares will be added to the floodplains of the delta of the river IJssel. This means a break with the past, because for centuries, space has been taken from the river. For example, in 1850 the floodplains of the big rivers in the Netherlands had about 3 times more space compared with the situation at the moment. The effect of the restoration of the floodplains in the IJsseldelta is that the water levels of the river IJssel will decrease substantially during situations of high river discharges. This contributes to the safety and resilience of the area.

The pilot project on the elaboration of the Middle River Basin Management Plan (Rostov Oblast of the Russian Federation as an example) shows a quite different approach. The project's objective was to improve the mechanism of integrated basin management of small and medium rivers on the territory of the Russian Federation. A methodology to prepare river basin management plans for the small and medium rivers is considered to be the main practical result of the project carried out at one of the typical rivers of Rostov Oblast. Methodological basis for the small (medium) rivers water resources management is the Russian Federation Concept of Sustainable Water Use State Policy with provisions and principles that involve:

Soil erosion in the Volga-Don river catchments, Russia.

- basin approach,
- continuous and systematic minimization of adverse impacts upon water bodies,
- chargeable water use,
- staged and well-substantiated developments,
- openness, intensive public involvement.

The Plan contents comprise the following principal sections:

- Description of the basin natural condition.
- Social/economic characteristics and prospects of the economic development in the river basin.
- Assessment of water resources status and use.
- Integrated plan of water/economic and water/protective measures.
- Plan of first-priority measures.

An integrated plan of water resources management is to cover all measures aimed at water resources restoration and protection, attaining of sustainable water use in the small river basin. However, the plan stipulates staged achievement of the ultimate goal. In this connection the list of first-priority measures is to be complied, these measures are to be elaborated in more details and presented as investment and institutional projects.

A Pilot Project on preparation of the Basin Management Plan has been carried out with application of the developed approach with the Tuzlov River basin natural/engineering system on the territory of Rostov Oblast. The project objectives:

- comprehensive survey of the Tuzlov River basin natural/engineering system status
- development of the program of measures aimed at ecological enhancement of the basin water bodies, and mitigation of the water negative impact upon population and economic entities;
- ranking of the measures including identification of the Tuzlov River reaches that require urgent application of measures;
- development of operational projects for carrying out of the first-order measures.

The Tuzlov River basin is a part of the River Don catchment basin, its area is 4680 km2, including 4340 km2 in the Russian Federation and 340 km2 in Ukraine. The basin is situated on the territory of six administrative districts of Rostov Oblast and is one of the most lived-in and economically developed part of the Oblast, it has a good net of transport ties that contributed to its economic development. In the process of the comprehensive survey materials analysis main water/economic problems of the Tuzlov River basin have been identified:

- low passage ability of the channel at silted reaches and at those restrained by road, crossing, supporting and other facilities;
- flooding and impoundment of the territories;
- high flow regulation;
- low reliability of the ponds and reservoirs water works facilities;
- ecologically dangerous ponds;
- no owners of substantial number of ponds and reservoirs;
- sites of active exogenous processes in the basin;
- intensive water use with water abstraction from surface and groundwater sources;
- discharge of substantial masses of pollutants with waste and pit waters.

On the basis of the environmental damage assessment the first-priority measure was identified as restoration of the channel passage ability (cleaning of silted reaches, removal of supports and old bridge footings that restrained the channel. Structuring of the geo-data base information in the process of the Tuzlov basin GIS preparation has enabled to form, beside basic layers (relief, hydrographic network, soils, administrative districts, land use, towns and inhabited locations), a set of thematic layers in accordance to the tasks of analysis to be carried out in the process of the basin management plan preparation.

The River Avon - a classic chalk river catchment in the United Kingdom.

While the classic chalk stream landscape in England is considered to be one of the most attractive natural feature of the English countryside, it is in fact the result of intensive human management over many hundreds, even thousands, of years. Any initiative attempting to manage and reinstate particular interest features must recognize that this is an artificial environment and that its status and appearance at any particular time is the result of a wide range of past and present management actions. Setting robust ecological objectives for rehabilitation within this cultural and historical landscape context within a highly managed system is a significant challenge. The River Avon SAC is threatened by many factors, such as historical engineering work, pollution from agricultural and other sources, low flows, and abstraction for drinking water supply and the STREAM project addresses the need for a structured, strategic approach to catchment scale river rehabilitation, and the need to integrate the management of the river valley and its floodplain. The project has rehabilitated 7km of river at six sites, improving its ability to support and 'future proof' aquatic habitats and species by optimising physical and ecological diversity. Being predominantly groundwater rather than rain fed watercourses, chalk rivers are low energy systems and therefore

geomorphologically benign. Intervention by re-introducing physical structure into the river is therefore feasible and sustainable. Varying flow direction and speed has been achieved by introducing 'D'shaped deflectors, islands and coarse large woody debris. Chalk berms, aquatic ledges and bank re-profiling have effectively narrowed the river and raising the river bed level has been carried out by re-introducing gravel riffles and woody debris. Reducing impoundments by modifying control structure operation in conjunction with physical channel modification has also been achieved. The management of the lower River Avon SAC is intimately linked with the management of the grazing marshes of the Avon Valley SPA. The breeding waders and wintering birds that use the valley are dependent on suitable conditions being created by controlling and retaining water on the floodplain at key times. To restore favourable condition requires restructuring of the ditch network, tree and scrub removal, and restoration or installation of sluices or structures. However, all these activities potentially affect SAC fish populations and the project has developed methods for prioritising floodplain restoration whilst avoiding fish entrapment. This involves using fishery data to generate colour coded maps, which can then be used to assess the potential impact of these measures on salmonid and cyprinid fish populations. Sluices, weirs and hatch operations are key factors in managing water levels on the River Avon. With over 100 structures throughout its entire length, they make a vital contribution to water level management within the river and adjacent floodplain but can radically affect ecological interests. STREAM has developed pilot 'operating protocols' for typical structures in the catchment. The protocols have established principles and provide guidance where there is a need to balance a number of river and floodplain interests. The presentation will focus on some of the river rehabilitation techniques and methods developed for resolving river and floodplain issues, and potential conflicts relating to the various needs for water level management and the effects on often competing ecological interests.

Integrated policies.

It is clear that river restoration deals with all functions of the river. This means that river restoration policies must integrate policies at least with respect to water, nature and physical planning. And when the river is a cross-border river, international policies should be integrated as well.

Satellite image of the Danube river catchment, East-Europe.

The Danube River is the most international river basin in the world. Like all other rivers of Europe it is a river that has been greatly influenced by human activity. Building of dams and hydropower plants, the dyking of wetlands for agriculture and flood protection, straightening of the river for navigation, and pollution have all negatively influenced the naturalness and quality of the river and its tributaries. These changes took place over a period of 150-200 years. Beginning in the early 1990s, however, following the collapse of the iron curtain new hope began to emerge that the Danube and its tributaries could be protected and improved. The Danube River Protection Convention signed by the Danube countries in 1994 committed the countries to cooperative actions to improve the quality of the Danube. Since this time efforts have been undertaken in the framework of the International Commission for the Protection of the Danube River (ICPDR) to undertake collective actions aimed at protection and restoration of the river. These actions have benefited from and attempted to realize some of the new thoughts that emerged in river management through institutions like ECRR. A philosophy of treating the river as a living system has begun to emerge and efforts have been made to put into practice these thoughts. An important milestone in realizing a change of thinking, and providing inputs for river restoration, has come from the EU WFD which came into force in December 2000. The Directive requires a number of actions and activities that have helped realize river restoration on a broad scale within the river basin. In particular the WFD emphasizes the river basin concept and has modified the understanding of water quality from a chemical assessment to include biological and ecological parameters. The understanding that hydromorphological issues are important in assessing the

quality of waters is embedded in the text of the Directive. Within the framework of the ICPDR the Danube countries have been analysing the situation related to water quality in the Danube river basin and have begun to develop measures for addressing problems associated with the primary pressures negatively affecting good ecological and chemical status including hydromorphological alterations. The Article V report (the basin characteristics) prepared in March 2005 highlighted that the good status of water in the Danube region would not be achieved by 2015 unless significant measure were taken to reduce the hydromorphological changes that have occurred as a result of building of dams, navigation, and flood defence.

Akhtuba floodplain of the Volga River close to the city of Volgograd, Russia.

In the Danube river basin management Plan (DRBMP) under preparation for release in December 2009 a number of measures are proposed to increase the longitudinal and latitudinal connectivity of rivers, including the reconnection of floodplains. It is also clear that a number of significant actions in this regard have already been taken in areas such as the Danube Delta, the Danube National Park in Vienna, and at a number of power plants where fish bypasses have been build. These measures will need to be supplemented with additional actions and continued efforts are still needed to ensure that future projects do not undermine the improvements that have occurred. Nonetheless, the EU WFD, together with the collective actions of Danube countries in the frame of the ICDPR, has offered hope that the ideas and principles of restoration will be realized on a broad scale in this large international river basin and can serve as an example worldwide of achieving progress in the protection and restoration of a living river.

In Europe we recognize and work with many different kinds of functional ecological networks – and these are increasingly supported by national and European law and planning processes. Additionally, the justification of restoring river and wetland systems to function as some kind of "green infrastructure" providing a range of valuable ecological services to people, is gaining interest and support. At the same time, plans for other kinds of infrastructure systems such as inter-basin transfer schemes and dams to address growing demands for water supply, water transport, energy and food production, threaten to disrupt and permanently undermine the river and wetland networks in particular parts of Europe.

Migration routes of water birds form West-Europe to West-Africa.

Often, action is required at multiple sites in order to restore and maintain functioning ecosystems and species populations. As highlighted by others, it is crucial to have a good knowledge-base and to understand the appropriate scale(s) of assessment to enable targeting of effective river and wetland restoration measures. Wetlands International has worked over the last decades to provide some practical methods for wetland assessment to address these needs, expressed by governments and wetland managers alike. Some improved tools and approaches are now available to assist conservationists and river basin authorities to focus in on the most critical information and at a range of scales. Bringing together information from communities living close to key sites can be very powerful in this respect. Even small and simple investments in building the capacity of local individuals and communities to monitor their nearby rivers and wetlands has been seen to bring multiple benefits. The inter-dependence of actions at different locations along a river, between river basins and even across continents (for migratory water birds), can easily be overlooked. Results from satellite-tracking within the African-Eurasian flyway of just a few individual water birds can provide important insights into the significance of different river sites in a network and the priorities

for conservation and restoration. Wetlands International works with a wide range of partners to bring together a range of wetland data from different sources to inform priorities for the conservation and restoration of critical wetland sites along flyways. This facilitates actions at the regional, national and local site levels in flyway conservation. As well as linking nature, ecological networks can also be a means to link people who share a common resource. The value systems and uses of sites in different parts of these networks can differ enormously. In order for conservation and restoration measures to be effective – and cost-effective, these different values and the local opportunities for resolving conflicts in natural resource use need to be understood. Therefore a broader knowledge-base is needed (than can be provided by conservation science) to restore rivers and wetlands. Wetlands International recognizes that poverty and environmental degradation often are strongly linked to each other. In developing countries and countries in transition, many rural populations are caught in the so-called poverty trap: to meet basic livelihood needs and to avoid poverty they are 'forced' to systematically destroy the environmental goods and services on which they depend. An integrated approach to poverty and wetland degradation issues is needed. Wetlands International pursues this dual objective approach through a range of strategies, including partnership with the development sector and use of innovative finance mechanisms. With specific knowledge it is possible, for example, to provide incentive mechanisms that reward local communities in sub-Saharan Africa for conserving and restoring river ecosystems that support wintering water bird communities that are highly valued in Europe as breeding birds. This "biorights approach", variant of "payments for ecosystem services" enables local communities to develop new, alternative livelihoods while maintaining and restoring globally valued nature.

Lelystad Declaration on River Restoration.

Local community close to the city of Mopti, Mali, Africa.

Throughout Europe the ever increasing intensity of use of rivers and their floodplains for the benefit of mankind has resulted in a widespread physical, morfological, chemical and biological deterioration of aquatic and riverine habitats. The relationship between culture and nature needs a rebalancing by wise use and interventions to restore, renew and innovate the qualities of a river, basin wide. And for that reason river restoration appears to be more an art than a science. Ecological river restoration focuses on regaining lost ecological functions, contributing to biological diversity and as such in many respects, to the human society itself. River restoration, including stream and floodplain restoration on a basin scale can support species recovery, improved inland and coastal water quality by means of sediment particle retention and associated nutrients and pollutants during flooding making use of natural ecological processes in the riverine environment, the development of new habitats for wildlife, while promoting alternative human activities like recreation. Ecological restoration is necessary due to all interferences that took place in the past or still takes place at present, but most important is to conserve and protect the remaining natural river and wetland ecosystems on our globe.

ECRR's findings are that:

1. As a result of the expansion of river restoration projects being implemented during the last 10-15 years, an increased learning from practice can be observed.
2. There is a progressively growing awareness and knowledge among stakeholders of the need to use new approaches.
3. More national policies become available and/or are under implementation, while there is more attention for the regional differences within Europe.
4. There is an increased awareness and understanding of opportunities and benefits related with river restoration among the various stakeholder levels.

ECRR also expresses a number of specific observations on the future to river restoration are formulated:

1. River restoration should target at restoring complete ecosystems and ecosystem processes, in which, as in undisturbed nature, dynamism is a key feature, expressed as the self-sustaining capacity of river and stream ecosystems and their capacity to respond to imposed external environmental changes. In this, regarding the four dimensions of a river, hydro-morphological processes remain a key factor in steering ecosystem processes and ecosystem quality;
2. River restoration should aim at tackling or contributing to solving regional impact factors, from the river to the basin via the floodplain. Early involvement of local stakeholders and enterprises in river restoration projects is essential to enhance the quality, financial health and so the sustainability of the project results;
3. The embedding of river restoration into an appropriate policy context is crucial to decision-making processes and implementation practices towards reaching defined results. In Western Europe, policy such as the Water Framework Directive (WFD) has been an effective driver although slow to makes its effect felt.
4. River restoration practices are being supportive to the implementation of various EU Directives, especially WFD, FFH, SPA and FRD, while on the other hand the implementation obligations under the EU Directives often are a driving force for the implementation of river restoration projects.
5. River restoration is based on an integrated ecosystem development approach. This difference creates obvious good opportunities, but also some threats with respect to an effective joined implementation of both river restoration measures and the EU directives.
6. The EU and related national implementation programmes can be targeted to finance river restoration, especially when river restoration targets are formulated in line with programmes on flood defense, water quality improvement, the Common Agricultural Programme, ecological networks, fisheries, renewable energy etc.
7. In defining ecological success criteria external changes need to be taken into account, like climate change, human population growth, land use changes, economic development etc. Therefore, design rivers for the future with respect to the past, with the understanding that only selected services can be realistically restored.
8. River restoration, when linked to new societal needs, is in fact a long term strategic economic investment, and should be communicated more as such.

ECRR wants to communicate that:

1. The strategic objective of the ECRR is to promote the translation from research oriented local river restoration activities to the elaboration and implementation of integrated larger-scale practical activities. As such, ECRR activities aim at increasing the knowledge base and common understanding of expectations among scientists, practitioners and decision-takers at the European level by means of publications, website conferences, all tailor-made based on the recognition of the various stakeholder groups – technical disciplines, policy makers, decision makers, practitioners, funders, the large public including young people, etc.

Rehabilitation of a secondary gully in the floodplain Vreugdenrijkerwaard along the River IJssel, close to the city of Zwolle, The Netherlands.

2. The ECRR will emphasise the link between the strategic and operational levels, by improving the knowledge base of decision takers (awareness raising) and improving the understanding of scientists and practitioners on relevance and complexity at the policy level. It also provides scientists and practitioners with opportunities to exchange experiences and best practices of river restoration, based on a planning process with integrated research ad design and adequate stakeholder involvement.
3. For its members, the ECRR serves as a representative to international and national platforms like the national governments and the EU, at international conferences, river basin commissions, the World Water Forum, etc., where the common view on river restoration can be furthered.

ECRR wants to recommend that:
The European national governments ensure their international credibility by applying an ecosystem approach to manage their rivers on a basin scale, in particular the transboundary rivers, in addition to the integrated river basin management approach and use the opportunities to address ecological river restoration and conservation within the implementation plans of the EU Directives.

Participants of the ECRR seminar in Kampen, The Netherlands.