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HOW CAN THE MESSAGE OF ECOLOGICAL RIVER RESTORATION BE BEST BROUGHT OUT INTERNATIONALLY?

INVENTORY OF BEST APPROACHES OF INTERNATIONAL NETWORKS OF ECOLOGICAL RIVER RESTORATION

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Foreword

This thesis is written for the European Centre for River Restoration (ECRR). The secretariat is since 2010 run by the Dutch Government Service for Land and Water Management (DLG) which is an agency of the Ministry for Economy, Agriculture and Innovation.

I have chosen to do research for this party, because I have had experience working with and for DLG and ECRR during my 6 month placement in 2010 and the following 6 months as part-time worker at the Government Service as assistant to the Secretary of the ECRR, Wim Zeeman.

Both during the placement and my working period I had the opportunity to explore the world of ecological water management. I became enthusiastic about this topic, and decided to do my thesis about.

For this purpose the European Centre for River Restoration (ECRR) was established in 1995. In 1999 the official constitutional meeting of the ECRR was held in Silkeborg, Denmark, within a LIFE Environment project, that ensured funding during the 1999-2002 period *.

The EU has acknowledged restoration of rivers and their floodplains as necessary during the last decades, and has thus already funded a number of isolated river restoration projects. However, to benefit most in the future from this knowledge and experience on river restoration there was a need for national organizations as well as an international network to collect and disseminate such information.

The thesis' main research question is**: "How can the message of ecological river restoration be best brought out internationally?".** It should provide ECRR the needed tools in order to enhance their networks more efficiently and develop further on the knowledge and experiences each networks possess. For this thesis international networks are chosen that will be examined on their strategy and their work ethics and principles. What steps do a network on ecological river restoration need to take, based on what methods or principles in order to achieve the goal?

For the ECRR the recommendations that are made as a result of this thesis, should provide the tools to build on their strategy that is written for the coming three years. In fact, the recommendations are the basis on which further actions and activities of the strategy will be based on.

Hopefully, I have answered according to the need and the common interests of the ECRR.

Abstract

As the main research question is: “How can the message of Ecological River Restoration be best brought out internationally?”, the outcome of this thesis will provide an approach for ECRR that eventually will best work out for ECRR. They have a clear approach now, though they are working on new inputs in order to be better able in reaching their objectives. This means that they want to reach more people, networks, centres and organisations that deal with rivers and (ecological) river restoration. ECRR has about 330 members at the moment, they want to grow in the coming 2/3 years, and have about 1000 ECRR members. In order to fulfil this mission , they need to have a clear approach towards the public and other River Restoration Networks and Centres. ECRR’s experience in the EU will be successful in this mission, though they need to make some adaptations in their approach in order to reach a broader audience. What their approach should look like, how their attitude must be in order to be successful internationally will be discussed in the Conclusion and further explained and described in the Recommendation.

In order to get the full picture, two analyses are made. The first analysis provide the geographical coverage of the networks/centres and the second provided the functional coverage of the networks/centres. Eventually, those analyses have provided the insight to the current networks and centres in what they do in order to spread the word of ecological river restoration, and how they’ve been successful in their approach, and what the struggles are they face. Struggles may be related to political, cultural, social, economic, environmental or technical obstructions.

With all this information the conclusion and recommendation(s) is written for the ECRR. For the ECRR this is of value for determining their outline of approach to go international. What is needed for them to be effective and efficient in their approach towards other centres and networks. How they could improve their approach in bringing out the message of ecological river restoration, by looking at the strengths and weaknesses of other networks/ centres. The interview results are used to make an extensive analysis and description of each river (restoration) network and centre. Their approach towards ecological river restoration, river restoration in general and river management have been discussed and further explained. These analyses have helped to make an analysis of the ECRR in order to clear out the questions in what parts and elements of ECRR’s approach have Strengths, Weaknesses, Opportunities and what does form (a) Threat(s) (SWOT). According to the results of the SWOT analysis, ECRR’s approach is further described in detail and explained. This in order to be able to understand the organisation better, and to better formulate the recommendation for them.

Introduction

Ecological River Restoration & Management

Human society attach value to different kinds of natural resources and use it in many different ways. Natural resources may have instrumental, intrinsic or inherent value. Some even take natural resources as for granted and infinite. This thesis is about one of the most important natural resources: water. Water covers 70.9% of earth's surface and it vital for all known forms of life. 97% of the 70.9% is surface water the ocean holds. What is left for human consumption is only a very small amount. Therefore, water need to be used and consumed with utmost care.

Water is used for multiple sources: consumption, recreation, bathing, heating and cooling systems (heaters and air conditioners), production processing, agriculture, hydropower, and much more (*www.wikipedia.com*). However, drinkable water is not infinite, neither for the human being as well as for other living creatures. Water should be kept 'clean' and should be ecologically in balance in order to serve the needs and services of organisms. What causes the imbalance and the pollution of the different water bodies, do have different causes: sewage and wastewater, marine dumping, industrial waste, radioactive waste, oil pollution, underground storage leakages, atmospheric deposition, global warming and eutrophication. Another main cause of the depletion of fresh water supplies has been the global human population increase, that fourfold to over 6 billion in the 20th century (*Daniels et al. 2008*).

Poor management and lack of insight in the consequences of many of the activities have been the causes of the fore mentioned problems. The endeavor to manage water to meet various human needs, has failed to take in to account the water needs of fresh water species and ecosystems, which were largely neglected. The causes of this harmful water management have been devastating to the environment and the ecological status of water and wetlands and different species. That kind of water management concerned the alteration of river flow regimes through the construction of dams. The construction of dams has been identified as one of three leading causes, along with nonpoint source pollution and invasive species, of the imperilment of aquatic animals (*Richter et al. 1997a, Pringle et al.2000*).

However, the management and the use of the waters have been changing over time, and so the gradation of pollution of water bodies. Critics have over time argued on what successful ecological river restoration actually is. The second section in chapter 1 provides a framework that can be used to define whether an ecological river restoration project has been successful or not.

The main objective to this thesis is to provide an overall picture of the networks that are involved internationally and their approach towards bringing out the message of ecological river restoration towards public. Chapter two starts with the definition of ecological river restoration networks and centres in order to better understand what these terms mean, and how it is interpreted in this thesis. In this thesis no criteria for assessing successful ecological river restoration is provided, neither criteria whether such a project is successful or not. Chapter one discuss several topics as to introduce the reader to the subject and the main items around the subject. That is the actual definition of ecological river restoration and the criteria for defining successful ecological river restoration projects. However, the second section of chapter one gives an example of what the best criteria are for measuring successful river restoration project. This in order to picture the possible framework that is needed in order to succeed a river restoration project. The article of Palmer et al. (*2005, Journal of Applied Ecology p. 208-217)* is central to this section. It is

the core source for defining successful ecological river restoration in this section (as well as this thesis).

In Europe the Water Framework Directive is the leading law and guideline on ecological restoration of water bodies in countries of the EU. However, it must be noticed that this Framework is not what ecological river restoration is to the full extent. The WFD is only providing the minimum standards and guidelines to reach the minimum ecological status of the water. Whereas ecological river restoration is a more broad concept. Section one of chapter one will go more in detail to this topic. The WFD has been made in order to restore the damage and to maintain the water bodies in future by a preset of rules and regulations. The last section of chapter one will give an introduction to these themes: the principle of ecological river restoration and water management and the Water Framework Directive, to give an insight and better understanding of the background of the current policy and field works.

An interview is conducted after a selection of networks has been made. The interview is conducted via Skype and by email, in order to find out more about the approach of the networks in order to enhance ecological river restoration projects/activities. Also is been examined is there are any political struggles, and if so how they deal with it. The interview helped to make a picture of the actual situation in the relationships between some of the networks/centres, if there is a cooperation/partnership or not, and why. The interview answers are processed and helped to do the analysis for the geographical and functional coverage. In order to analyse further the state of the networks/centres, their partnerships/cooperation and their coverage in both functional and geographical terms. This analysis provided the data to better understand and to get a grasp of the type of approach and the influence of that on the goals and objectives of the project(s). What the weaknesses and strong points are in the network's approach to bring out the message of ecological river restoration.

All the analyses together have provided the insights to be able to gain knowledge on the recommendation for the ECRR and it abled to write the conclusion.

RESEARCH METHOD & OBJECTIVES

The thesis starts with a desk study on river restoration and on networks/centres for river restoration. The desk study is to introduce the reader into the topic and the main concerns on ecological river restoration to which this thesis is inspired from. These provide general information to the topics: Ecological River Restoration, Water Management, European Law on Water Management: Water Framework Directive. These topics are essential in order to understand the current situation in Europe when it comes to Water Management.

First, research was done online, to find more river restoration networks. Unfortunately, South/Latin America has been more difficult, since there is a language problem. The websites are in Spanish/Portuguese . Therefore, Latin/ South America is out of the picture in this thesis. Though, all other continents are covered: Australia, North America (Canada + USA), Africa and Asia. Europe is not examined since another EU project called RESTORE is doing this already for Europe.

A main concern for the ECRR is thus to assess how to reach the audience the best in order to gain a wider spread network, to create more awareness on river restoration, strengthening of ECRR's position and that ECRR's role is clear amongst stakeholders. For these they've set up the communication plan in order to line out the targets and the actions needed to meet the targets. However, this thesis was needed to provide insights in how to do better? What can be improved and what can be changed, as mentioned before. In order to find out what needed to be improved and what needed to be changed, the best was to look to other river (restoration) networks and centres. ECRR's Secretariat decided to choose networks and centres outside Europe, since another EU project that has started since 2011, called RESTORE, is already focussing on river (restoration) networks and centres and their approach, etc. in Europe.

Concerns are problems that are an inspiration for thought; how to do better? The core element in this thesis is however, not methods on river restoration itself, but the networks and centres for river restoration. In Europe you have the ECRR that is a network that tries to link all other national networks and centres in Europe. That is to improve the knowledge share and exchange on good practises and improve the ecological quality of rivers throughout Europe. ECRR also helps in setting up national networks/centres on ecological river restoration in order to improve the situation not only in Western Europe but also in Eastern Europe, where ecological river restoration does not have the same level as in Western European countries. One of the elements in ECRR's long term strategy and the communication plan is to gain more members and a wider spread network. The long term strategy and the communication plan have been the basis where upon the analyses have been made for the network and centres across different continents. To know what is ECRR's plan now, and what can they add to it and what can they do improve their approach, strategy and communication plan? These questions were the basis for the continuity in the interviews and writing of the recommendations and the conclusion.

The main goal of this thesis is to find the best approach for ECRR in order to spread the word of ecological river restoration the best internationally?

Chapter 1 General

1.1 Introduction to: 'Ecological River Restoration'

The meaning and definition of ecological river restoration is derived from the explanation that ECRR has given. Ecological river restoration is:

" *…… Poor physical conditions have a negative impact on water quality because oxygenation and self-purification is less effective; the same time, habitats for the flora and fauna are limited in number and quality, and the aesthetic and recreational value of rivers may be greatly reduced. But the works that provoked the physical alteration of rivers (artificialization) have too often worsened the problem of bank/bed erosion, flooding and associated land-sliding, that was the main driver for such works. Today, we have to bear increasing maintenance costs and increasing damages.*

Physical deterioration of rivers and their floodplains is common all over Europe.
The uniformity of channelised and deepened rivers provides poor conditions for aquatic life. The more diverse the physical and environmental conditions, the higher the biodiversity. Biodiversity is high on the political agenda reflected in the Convention on Biological Diversity. In the EU 6th Environmental Action Programme biodiversity is also given high priority and nature restoration has been identified as one of the measures to maintain and improve European biodiversity.
These considerations motivate the idea to implement an active programme of river restoration in order to improve the quality of fluvial ecosystems (in terms of water quality, biological and hydro-morphological quality).

Indeed, more natural rivers constitute an invaluable asset in terms of conservation of biodiversity (habitats), aesthetic value, etc. Moreover, they provide a number of environmental services, like: increased natural treatment of water effluents (auto-purification, nutrient retention), increased water availability (recharge of aquifers), support of biota (complex biological cycles), conservation of morphological equilibrium of infrastructures (less bank/bed erosion) and coastal zones, reduction of flooding problems in highly urbanized areas -where damages are extremely high- through a less dramatic, but diffused flooding of flood-prone areas, etc.

The environmental objectives of the EU Water Framework Directive (Dir. 2000/60/EC) include preventing deterioration of ecological quality and pollution of surface waters, and achieving a good status in surface waters by 2015. River restoration is an essential tool to achieve such objectives and should become an integrated part of European water management.
River restoration can be costly, and may require to make courageous and sometimes unpleasant social-political decisions, but, in the end, provided that all aspects are included and a sufficiently broad spatial-temporal perspective is considered, more natural rivers may cost less money to the tax-payers.

Pic. 2 Channelized river

As River Restoration requires a change of thought, a new culture (or ... the recovery of a previous cultural principle), it is not easy at all to see the positive balance; even technically it is not easy, as the phenomena involved are very complex and interrelated. Specific scientific

knowledge and technical competence is certainly a pre-requisite, but also social awareness, public participation, and the integrated evaluation as a support to negotiation/conflict resolution are key issues in any process concerning River Restoration

Sharing knowledge and experience on the subject, and to identify where restoration measures do provide the desired physical, ecological and economic benefits, is of vital importance……."

. *Pic. 3 example of restored river*

1.2 Ecological River Restoration Management

River restoration methods have been changing over time, from hard engineering solutions to ecologically based restoration activities. In the past water management was generally about dampening the natural variability of river flows to attain consequent and dependable water supplier for irrigation, navigation, hydropower and domestic and industrial uses. What affected the river flows also are the vast attempts to control and moderate extreme weather conditions that caused floods and droughts. An example of this is the storing of water in reservoirs during wet periods. This abundance of water was kept to supplement it in times of drier periods. The reliability of water supply was hereby secured for domestic, commercial use and safe from economic loss. The consequences of these alterations have been devastating for the ecological status of river flows and water bodies. For years the natural variability of river flows were altered that much, that it marked changes in the physical, chemical, and biological conditions and functions of natural freshwater ecosystems (*Postel and Carpenter 1997, IUCN 2000, WCD 2000)*. Due to increasing knowledge and awareness on water management, men came to realize that ecological value is of utmost importance. Healthy, self-sustaining river systems provide important ecological and social goods and services upon which human life depends (*Postel & Richter 2003*). These concerns over sustaining these services has stimulated restoration efforts (*NRC 1996; Holmes 1998; Henry, Amoros & Roset 2002; Ormerod 2003*).

Ecological river restoration does have different meanings to each one. Though, what is referred as to ecological river restoration in this thesis is the following meaning:

Ecologically sustainable water management protects the ecological integrity of affected ecosystems while meeting intergenerational human needs for water and sustaining the full array of other products and services provided by natural freshwater ecosystems. Ecological integrity is protected when the compositional and structural diversity and natural functioning of affected ecosystems is maintained (Brian D. Richter, et al.2003).

Yet, experts have not reached consensus on what successful ecological restoration actually is. That is one of the reasons of slowing down the process of assessing ecological river restoration projects. There is no universal set of criteria that determines what is exactly ecological sound water management, neither when such project is successful or not.

River restoration is still an alteration in the river's natural flow regime. A river can be restored in several ways, but to succeed a restoration project the water management program

should be designed and implemented in a way that it stores and diverts water for human purposes in a manner that it does not deteriorate or affect the ecosystem in any way. Ecological sound restoration do not jeopardise the viability of native species and the ability of an ecosystem to provide valuable products and services for society *(Brian D. Richter, et al.2003)*. The challenge nowadays is seeking a way to modify river flows to a degree that human purposes can be achieved and still maintaining an adequate semblance of the ecological value and function of the river system (*Poff et al. 1997, Richter et al. 1997b, Arthington and Zalucki 1998, King and Louw 1998, Tharme, in press*).

In this thesis one of the core elements to achieve good results, ecological river restoration is defined as an integrated part of integrated river basin management (IRBM). By viewing the river and its basin from the river sources to the sea as an organic unity, the complete spectre of measures suitable to provide a good ecological status for waters on the one hand, and safety, prosperity and sustainable economic development on the other hand is applied (*B.Fokkens & H.Leummens, 2008*).

1.3 Successful Ecological River Restoration

There is no international framework that monitors river restoration projects, neither is there a method to define whether a river restoration projects has been successful. Margareth Palmer led the research in the US for conducting a framework that could define when a river restoration project is successful, and what possible steps to take to make a river restoration project into a success.

In Palmer et al. (*2005*) they propose five criteria for measuring success. Researchers have been arguing before what successful ecological river restoration actually is. It was also Leopold in the last century (1948) who stated that the first 'rule' of restoration should be to do no harm (*Palmer et al. p.212, 2005*). Later in the same century, other researchers have defined ecological river restoration more precisely and suggested that ecologically successful river restoration creates hydrological, geomorphological and ecological conditions that allow the restored river to be a resilient self-sustainable system, one that has the capacity for recovery from rapid change and stress (*Holling 1973;Walker et al. 2002;Palmer et al. 2005. P.211*). Palmer et al. have developed a figure that shows that contains the five criteria for measuring successful ecological river restoration:

Fig. 1. The most effective river restoration projects lie at the intersection of the three primary axes of success. This study focuses on the five attributes of ecological success, but recognizes that overall restoration success has these additional axes. Stakeholder success reflects human satisfaction with restoration outcome, whereas learning success reflects advances in scientific knowledge and management practices that will benefit future

restoration action (*Palmer et al. p.209.2005*).

In short they say that:

1. The first step in river restoration should be articulation of a guiding image that describes the dynamic, ecologically healthy river that could exist at a given site.

2. Relatively undisturbed or already recovered reference sites can be used to help frame restoration goals (Rheinhardt et al. 1999), particularly where historical information is lacking.

3. An analytical or process-based approach that employs empirical models can be used to guide the design of a project.

4. Stream classification systems have been used as a basis for developing guiding images for restoration in North America and Europe.

5. Finally, common sense may be adequate in many situations, where the guiding image is self-evident and requires little or no expert analysis.

These five criteria should provide the framework for designing and implementing processes in order to choose the most effective course of action (*Palmer et al. p.209.2005*).

1.4 Ecological River Restoration Networks

Worldwide there are networks and organisations, whether governmental or non- governmental that deal with ecological water management. This report will be about river and wateshed related networks and centres, where (ecological) river restoration is their core business and their main concern.

Appreciative is the fact that every network and centres does have its own vision on river restoration. Through experience, science, literature, conferences, meetings, etc. the experts have developed their strategy that best fits to their own environment. Instead of introducing one kind of river restoration, instead of putting forward ‘good’ and ‘bad’ approaches in bringing forward the message of river restoration, this thesis has tried to be as objective as possible. It rather narrates the existing philosophies and ideas of experts.

1.5 The European Centre for River Restoration

The ECRR is a European network based on a framework of national networks (national centers for river restoration) whose mission is to enhance and promote river restoration and sustainable river management throughout Europe, disseminating information on river restoration experiences and approaches and fostering the establishment of national river restoration networks in as many European countries as possible. It shares the same goals of many River Restoration national centers, but it acts at the international level, as a "network of networks". A network of ECRR does exists from National Centers that are interconnected with one another.

The ECRR network includes also "individual members" (presently more than 300) both

organizations and individuals from all over the world (joining the ECRR is free), which are included in information exchange and discussions on activities promoted by the ECRR.
With this structure the ECRR can create an umbrella, covering the activities and projects of individual participants. It has to be stressed that the ECRR is a network, in which all participants have the opportunity and responsibility to make the centre work. Subgroups with common interests can organise meetings or workshops in order to further develop their topics and ideas. In such cases ECRR can play a facilitating role and provide feedback information to others within the network (*Blueprint ECRR, 2011*).

1.5.1 Reasons to establish a National Network/ National Center

a. Deterioration of the ecological status of rivers and streams

b. Water Framework Directive

c. Knowledge exchange and dissemination

d. Good practices

An NC is to support, catalyse and stimulate replication of good river practices. In all the actions of the NC should be clear that a higher goal needs to be achieved, at also European level.
The actions performed by the NC is for national purpose but not solely for national purpose and national benefits, as we must also depict on restoring rivers and streams at European level. Therefore, at all times men should consider how to distribute, to exchange and share information also with other NC's. An active attitude towards other NC's should serve the need and the urge to work together on the same goal. It prevents also one from re-invention of same methods, good practices, theoretic knowledge development, and so forth.

Another element that is equally important is the fact that river basins are not bound to national boundaries, in this same line of thinking, it is therefore important to have a transboundary outlook in the activities one might undertake. Another important element is; to build and enhance the European wide network in order to be able to achieve the objectives, as good and as efficient as possible (*Blueprint ECRR, 2011*).
The main objective of ECRR is to support the development of river restoration as an integral part of sustainable water management throughout Europe, ECRR and the NC's try to do this by:

- encourage and improve confidence in promoting and implementing river restoration;

- increase the knowledge on river restoration schemes and techniques;
- improve European access to, and exchange of information from worldwide experience in river restoration;
- obtain healthier river ecosystems, greater biodiversity, better water quality and flood management;
- gain greater benefits from river restoration projects, through better knowledge and increased evaluation of projects success;
- facilitate and encourage the establishment of national river restoration centers in all European countries.

The ECRR works forms a set core of principles that is based on ecological sound water management. Their mission and goals are based on these principles. Which are the following (*as stated on ECRR's website, 2011*):

Pic. 1 restored stream Noord- Brabant

Support the development of river restoration as an integral part of sustainable water management throughout Europe:

The ECRR promotes river restoration mainly through:

- its internet website (www.ecrr.org);
- publications;
- newsletters;
- international conferences;
- thematic workshops;
- field trips;
- observer/representation role in international fora *(ECRR,2011)*

ECRR does have clear targets for in the coming five years in order to reach a set of targets that should lift ECRR to the next level. These targets are:

1. Ecological RR is a main issue in the European RBMP's and is a common practise implementation of EU-directives on water management.
2. And up to date, professional and well-functioning and wider spread network
3. More National Centers in Europe are founded (80% coverage)
4. Partnerships are strengthened and broadened
5. The supporting organisation of ECRR is formally embedded
6. Organisation is up to date

7. ECRR is ready for and supports the implementation of the (seerate RR projects) RESTORE and HYMO
8. ECRR is linked to relevant projects to learn form
9. ECRR's network of RR experience is an improved delivery vehicle for RR knowledge

These targets should support the awareness on River Restoration (RR) and knowledge and the active recruitment of members. (*Communication plan ECRR, Draft Version 1*)

1.6 European Law on Water Management: Water Framework Directive (WFD)

The EU has developed the Water Framework Directive in order to provide a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. The framework is to further prevent deterioration and to protect and enhance the status of aquatic ecosystems and to promote sustainable water use based on a long term protection of available water resources. The WFD also aims at enhancing the protection and improvement of the aquatic environment and ensures the progressive reduction of pollution of groundwater and prevents its further pollution. The WFD also contributes to the mitigation of the effects of floods and droughts (*EU Website*).

The execution of the WFD further contributes to the sufficient supply of good quality surface water and groundwater as needed for sustainable, balanced and equitable water use, a significant reduction in pollution of groundwater, the protection of territorial and marine waters, and achieving the objectives of relevant international agreements, including those which aim to prevent and eliminate pollution of the marine environment (*www.europe.eu.com*). Member states have identified and made an analysis of their waters. This analysis and identification should be revised in 2013, and after that every six years. It includes several aspects, such as the registration of areas that requires special protection, an economic analysis of the water use, a review of the impact of human activity on water, an analysis of the characteristics of each river basin district and a survey of all bodies of water used for abstracting water form human consumption and producing more than 10 m^3 per day or serving more than 50 persons (*EU Website*).

Member states were obliged to make management plans, five years after the WFD came into force. A management plan was made for each river basin district (in short: prevent, protect, preserve), in order to meet the standards that is described in the WFD.

2000	Directive entered into force	Art. 2
2003	Transposition into national legislation	Art. 23
	Identification of River Basin Districts and Authorities	Art. 3
2004	Characterization of river basin: pressures, impacts and economic analysis	Art. 5
2006	Establishment of monitoring network	Art. 8
	Start public consultation (at the latest)	Art. 14
2008	Present draft river basin management plan	Art. 13
2009	Finalize river basin management plan including programme of measures	Art. 13, 11
2010	Introduce pricing policies	Art. 9
2012	Make operational programmes of measures	Art. 11
2015	Meet environmental objectives	Art. 4
	First management cycle ends	
	Second river basin management plan & first flood risk management plan	
2021	Second management cycle ends	Art. 4, 13
2027	Third management cycle ends	Art. 4, 13
	Final deadline for meeting objectives	

Pic. 3 Time schedule WFD

Chapter 2 Introduction to Networks and Analysis

2.1 Description of River (Restoration) Networks & Centres

River Restoration Networks and Centres in this thesis are not alike. The objectves, strategies and needs are variable, the variability depends on the political, economic, social, technical, environmental and cultural aspects. However, these networks do have one common interest, passion and goal that are: protecting rivers, restore rivers and save rivers from human interference that is sometimes devastating to rivers and the people who live from rivers…

Rivers and the riverine environment is the passion all these networks and centres have in common. Therefore, all the other aspects related to, for example, politics or economics does not matter that much. When networks or centres work together, they only have to adapt their strategy to the local/regional/ national situation. The strategy must thus be efficient, that they do not need to adapt that much and still continue the good work they do. The formula for this is not pre-designed for them, nor is there literature to find about it. This thesis however, tries to be the nearest to this formula for networks and centres to provide them the tools in order to prepare themselves at best to start cooperations/alliances/partnerships with river (restoration) networks/centres elsewhere.

2.2 Identification of River (Restoration) Related Networks

In this thesis international networks are chosen that will be examined on their strategy and their work ethics and principles. The examined networks are the networks that correspond positively to my request for doing an interview. What steps does a network on ecological river restoration need to take, based on what methods or principles in order to achieve the goal? Namely, ecological river restoration.

River restoration networks' activities and approaches do differ per country and region. The UK and the USA do have regional river networks that do solely focus on rivers and streams that flow in their region. Some countries or regions do also have national river restoration networks that encompasses all the national rivers and streams. Next to these you have also international river restoration networks, all with their own strategies and own activities, but with the same goal: protecting, restoring and maintaining the rivers. In fig. 2 you can find the list of identified networks, typified per region/continent.

Region	*Network*
International	International River Foundation
International	International Rivers
International	Wetlands International
International	INBO, International Network of Basin Organizations
International	IWAP, International Water Ass. Publishing
Asia – Japan, Korea, China	ARRN, Asian River Restoration Network
Asia - Japan	JRRN, Japan River Restoration Network
Asia - Korea	KRRN, Korea River Restoration Network
Asia - China	CRRN, China River Restoration Network
Asia – India, South Asia	SANDRP, South Asia Network on Dams, River and People
Asia - Thailand	Living River Siam
Asia - India	Friends of River Narmada
Asia - Burma	BRN, Burma Rivers Network
Asia - Burma	ARN, Arakan Rivers Network
Australia	ARRC, Australian River Restoration Centre
Africa	African Rivers Network
North America - USA	Kootenai River Network
North America - USA	Prairie Rivers Network
North America - USA	Georgia River Network
North America - USA	River Network
North America - USA	Jordan River Restoration Network
North America - Canada	CRN, Canadian Rivers Network

Fig. 2

The chosen international networks for further examination are (these were the ones that responded to my request for doing an interview):

1. *JRRN/ARRN- Japan River Restoration Network/ Asian River Restoration Network*
2. *The Kootenai River Network*
3. *International River Foundation*
4. *Australian River Restoration Centre*
5. *International Rivers*
6. *Canadian Rivers Network*
7. *African Rivers Network*

2.3 Introduction to the Selected Networks and Centers

1 ARRN

ARRN is established in order to provide technical information and knowledge on river restoration in the Asian Monsoon region. This was as a response to the recommendation in the "River Restoration in Asian Monsoon Region" session held in the 4th World Water Forim in Mexico City in March 2006. Eventually ARRN was established for (technical) information exchange on the restoration of rivers and watersheds in Asia. The Asian Monsoon region face similar problems when it comes to floods and socio- technical adjustments that have been made to river fronts through the decades. In Asia they face the problem of rapid urbanization, through information exchange and support the ARRN strives to pursue the need of socio-economic sustainable development in combination with flood protection and water use management *(Asian River Restoration Network, 2011*). These factors they have in common, and brought those three parties from Korea, Japan and China together.

ARRN and ECRR do have a partnership that is also confirmed, black on white on paper, signed by the two parties. The ARRN is a network covering the national networks of Japan (JRRN) Korea (KRRN) en China (CRRN). Their definition of ecological river restoration is basically similar to that of ECRR. Though, there is one difference: Asian countries have much in common regarding their natural and social environment, as for example frequent floods, deterioration of living environment due to rapid urbanization, concentration of the population in low-lying areas…

Therefore, ARRN decided that they not only need to focus on ecological river but also social environment restoration and cultural restoration regarding the river and the watershed. ARRN also realized that each country has their own "language" concerning the meaning of "restoration", and that the meanings do have different backgrounds and objectives . As they were aware of this fact, they decided to clear the definition of key words such as "river restoration" or

"river rehabilitation". These reflections are used as input for the ARRN's river restoration guideline. Still, they haven't reached consensus on the clear definition of river restoration, so far.

2 The Kootenai River Network

The Kootenai River Network, USA, works with regional actors and stakeholders, from both private and public. They also do have a partnership with a Canadian NGO called 'Mainstream'. The Kootenai River Network is an transboundary Network, since they also work with the Canadian NGO, on river restoration. They've had many successes in river restoration programs in the regions of Montana, Idaho and British Columbia. They eventually started off with programs on river restoration in British Columbia, and later on they've had Montana and Idaho also in their program scheme. As this began to grow too big, they decided only to focus on Idaho and Montana only. They support grass root level approach in their programs, and work intensively on awareness programs for the public and actors in the private business sector. KRN has a lot to deal with private land holders, this means also that they need to keep the good contacts with locals of the riverine environment. Which is a challenge for them, but what has never been a failure either.

3 International River Foundation

The IRF may be the only in the list of RR networks/centres/organization that do has a total different approach to RR practices. The IRF is a public benefit organization, that is embodied in a Foundation. They organize annually since 2003 in cooperation with the Riverfestival (an annual celebration of Brisbane's people, culture and environment) the International River*Symposium*, in which they hand out an award, called the River*prize*, to the winning river restoration project. The first Internatioal (Thiess) River*prize* was handed out in 1999 and two year later included also the National River*prize*. Companies, organizations or individuals can submit their project proposal on beforehand. A selection of professionals and experts on rivers and river management will take place in the jury panel. During the years it has expanded with including twinning – where they ensured that world's best practice was shared. The winning Twinning projects are also handed out a River*prize*. The IRF is also limited by the amount of funds they raise each year. (*River Foundation, 2011*)

4 Australian River Restoration Centre

The ARRC is a non-profit organisation set up by Dr. Siwan Lovett and Dr. Phil Price, it has been established to provide people the opportunities to share their knowledge with one another about river restoration. People who care about Australia's rivers. ARRC organize conferences and workshops in order to provide people who share a passion for rivers and river restoration with information, stories and resources on river restoration. ARRC's mission is: *"Support, facilitate and provide opportunities for Australians to work together to protect, maintain, restore and celebrate our riverine environments."*

ARRC do have strong international lint to the European and Asian River Restoration Centres, and with organisations in Canada and North America who do similar work. Just like the ECRR and the ARRN, ARRC tries to connect people who work on river restoration, people from all types of origin: scientist, practitioners, government employees, irrigators, or local people…As

ARRC describes: *"It is an organisation that will link, connect, facilitate and provide opportunities for people to access the information and skills they need to accomplish their river restoration objectives."* (*Australian River Restoration Centre, 2011*).

5 International Rivers

International Rivers may be the most extensive network, internationally seen. It has regional offices in every continent except in Europe and Australia since they focus on developing countries. Though, this organization is the only one that is less focusing on ecological river restoration and more on protecting rivers and the rights of people who live from that river. So most of the work consist of a collaboration with social movements, local NGO's in the South, and local communities.

International Rivers support grass- root decision making, order to reach their objectives. Together they form a 'global movement' in order to prevent disastrous Dam projects. They do this via education (to the locals), advocacy and research. Through raising awareness among the local communities they try to make them unite against disastrous projects such as Dam/ Hydropower projects.

International Rivers make use of the local media a lot to raise awareness about the consequences of large dams. They make people aware of the effect on it on their communities, and the environmental and economic impact of large dams and hydropower schemes (*International Rivers, 2011*). In return they also provide solutions and alternatives for these large dams and hydropower schemes. Over the years, they have accomplished a lot. Among other they've been able to:

- Stopping destructive river projects from Brazil's Pantanal to the valleys of Nepal.
- Being the driving force behind the formation of the World Commission on Dams, whose recommendations form a gold standard for water and energy planning.
- Coordinating the International Day of Action for Rivers: A global celebration of healthy rivers, a day of protest against projects that would harm them, and a day of solidarity with dam-affected communities.
- Ensuring that promises made by companies and government agencies to dam-affected communities in Lesotho, Laos, Thailand and Brazil have been kept.
- Helping communities in Guatemala get reparations for injustices resulting from dam projects.

- Promoting a better way, from community watershed regeneration efforts in India to increased support for alternative energy options in Uganda.
  (*International Rivers, 2011)*

6 Canadian Rivers Network

The Canadian Rivers Network (CRN) is a loose network of groups, organizations and people across Canada with an interest in protecting rivers for many purposes.

The CRN was formed in 2008 when it became known that the Canadian government was engaged in an effort to amend one of the oldest pieces of national legislation in the country…the Navigable Waters Protection Act (NWPA).The NWPA was enacted in 1882. It enshrined into law the public right of navigation on waterways in Canada. Through this act, the public right of access and navigation was protected on all waterways in Canada that fit the definition of "navigable". The definition of navigable was established as "able to float a canoe".

The CRN was formed as a national network to quickly get information to Canadians about what was being planned, behind closed doors, by bureaucrats and politicians. Over a period of one year, the CRN grew into a very effective network. At the end CRN's efforts, their notices were reaching over two million Canadians. However, the CRN was completely unsuccessful in stopping the government effort to amend the NWPA and limit the public right of navigation in Canada. (*D. Skeggs, 2011*)

7 A**frican Rivers Network**

African Rivers Network is a partner of International Rivers. ARN is a network comprising dam affected communities and NGO's. All together they work on water and energy issues from over 19 African countries. Just like International Rivers they strive for social justice of the local communities that do live form river that are threatened by large dam building projects. ARN tries to find alternatives and solutions for this problem, and try to influence decision making from a grass root level. (African Rivers Network, 2011)

ARN explains, the Africa's dam affected people say that this is what the affect is on their lives and their livelihoods due to the construction of large dams:

"We lost our livelihoods and cannot regain them:

- Our land where we grew food was taken from us and not replaced;
- Our homes were demolished or drowned;
- Our livestock were taken from us;
- We lost control of our natural resources,
- Our wildlife have disappeared;
- Our cultural values, functions and roots have been destroyed;

- Our ancestors' graves have been buried under deep water, and
- The lives of some of our community and family members were violently take from us.

Large dams have caused:

- A decrease in our standard of living,
- A decrease in our level of health,
- Increased costs for resources we previously used freely,
- Increases in HIV/AIDS, malaria, river blindness, bilhazia and other diseases
- Increases in crime and other urban problems, and conflicts in our communities where there once were none." (*African Rivers Network, 2011*)

2.4 Geographical Coverage

The geographical coverage will be analysed from ECRR's perspective. The *current* position of ECRR regarding the total geographical position and its reach is showed in figure 3. How this position is formed and by what types of institutions is also explained further in this section.

The currently existing NC's in Europe are:

- UNITED KINGDOM: The River Restoration Centre (RRC)
- ITALY: Italian Centre for River Restoration (Centro Italiano per la Riqualificazione Fluviale - CIRF)
- SPAIN: Spanish Centre for River Restoration (Centro Iberico de Restauracion Fluvial - CIREF)
- DENMARK: Danish Centre for River Restoration (Dansk Center for Vandlobsrestaurering - DCVR)
- ROMANIA: Romanian River Restoration Centre (RRRC)
  The RCRR Secretariat operates under Romanian Waters national company.
- FINLAND: Environment Institute (SYKE)
  SYKE acts as a reference for river restoration.
- RUSSIA: Russian Institute for Integrated Water Management and Protection (RosNIIVH)
  RosNIIVH acts as a reference for river restoration.
- THE NETHERLANDS: Netherlands Centre for River Studies (NCR)
  NCR acts as a reference for river restoration.
- BELGIUM: University of Antwerp
  It acts as a reference for river restoration.
  (ECRR, 2011)

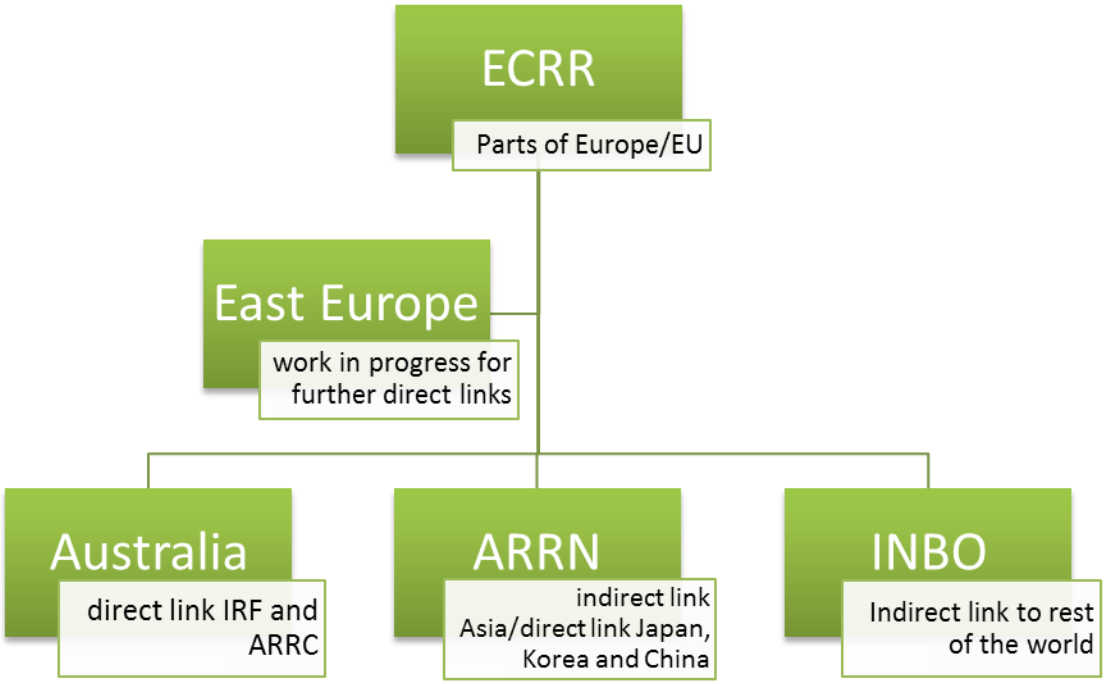


Fig. 3

Existing links ECRR

What we can say from figure 3 is that direct links ECRR has with Australia, Japan, Korea, China and INBO is not represented by the ECRR Management Board and the Secretariat. The contacts outside Europe is maintained by the Chairman. Between ARRN and ECRR there is a formal partnership. At the moment the ARRN secretariat is settled in Japan (JRRN).

By active communication with the Koreans and the Chinese the partnership will get a true meaning. No information exchange is taking place if no active interaction is between the ECRR Secretariat and the Secretariat members of KRRN, JRRN and CRRN separately. As ECRR's approach has always been that the Chairman starts the introduction it should also be the task for the Secretariat to maintain the contact and further distribute it to the Management Board. The ARRC do have links with the ECRR via the Chairman, they also have the link of ECRR's website on theirs.

To get an exact picture of the current position of ECRR in the international arena, all the EU members states and non-EU member states are listed in the following three tables. They show which of these countries does already has a NC and which ones are currently busy setting up one.

The blue coloured are the ones that has a formally established National Centre. The orange coloured ones are countries that are currently busy setting up an National Centre.

Member States of the EU are:

Austria	Belgium	Bulgaria	**Cyprus**
Czech Republic	Denmark	**Estonia**	**Finland**
France	Germany	Greece	**Hungary**
Ireland	**Italy**	Latvia	Lithuania
Luxembourg	Malta	**Netherlands**	Poland
Portugal	**Romania**	Slovakia	**Spain**
Sweden	**United Kingdom**		

Non EU Member States:

Albania	Andorra	Armenia	Azerbaijan
Belarus	Bosnia and Herzegovina	Georgia	Liechtenstein
Moldova	Monaco	**Norway**	**Russia**
San Marino	**Serbia**	Switzerland	Ukraine
Vatican City State			

The 37 European countries with major water bodies:

Ireland	Netherlands	Germany	France
Portugal	Spain	Italy	Albania
Austria	Belarus	Belgium	Bosnia- Herzegovina
Bulgaria	Croatia	Czech Republic	Denmark
Estonia	Iceland	Italy	Latvia
Lithuania	Luxembourg	Macedonia	Moldova
Montenegro	Poland	Russia	Romania
Serbia	Slovakia	Slovenia	Sweden
Turkey	Ukraine	United Kingdom	

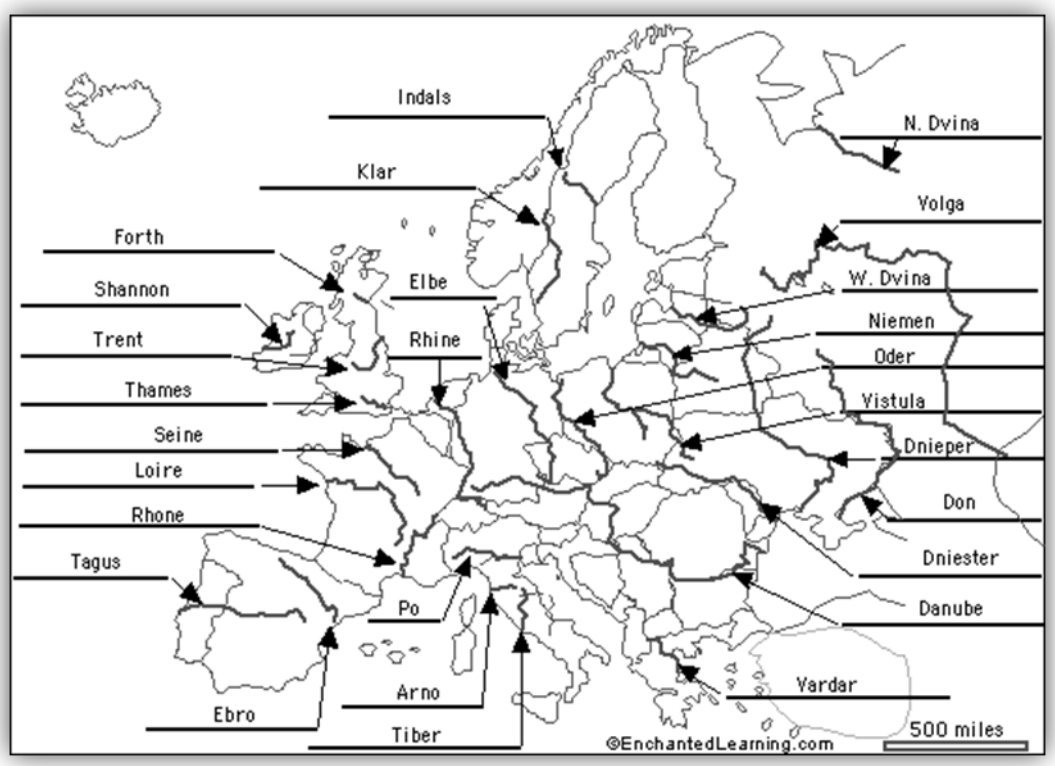


Fig. 4 (*source: www.enchantedlearning.com*)

From these schemes it can be concluded that 9 out of a total of 43 European countries do have an NC. Out of the 43 countries there are only 37 countries with major water bodies, that means that 37 countries out of the 43 that do have a high relevance for setting up an NC. Another 7 countries are busy setting op one. If you count this 7 up with the already 9 existing NC's, makes it 16 countries in total out of the 37. 21 European countries remains left, that are the countries that ECRR needs to put more focus on in the coming few years. A great part of Eastern Europe is still missing, but that is work in progress, also within the objectives of the RESTORE project, to represent more Eastern European countries in form of an National RR Centre/Network.

The seminar held in Bucharest, Romania in July 2010, was successful in the sense that it had attracted professionals in Eastern Europe for setting up an NC. The main target was also to exchange information on the why and how of setting up NCs. Representatives of seven European countries were present, these were: Estonia, Bulgaria, Serbia, Hungary, Norway, Czech Republic and France. The participants of the seminar were thus convinced and inspired by the presentations the representatives of other NC's gave that they decided to do the same. That means that additionally seven more European countries have started off with taking serious steps in setting up an national centre.

When looking at ECRR's presence in the international arena, it presence is lean. Since the former strategies of ECRR has depicted to focus on Europe only, the task for the Management Board and the Secretariat was to maintain contacts in Europe rather than outside Europe.

Understandable, since in Europe there was and still are not enough National Centres present yet. Still, there has a lot need to be done when it comes to the ecological status of rivers and river basins and the water quality inside Europe. Now, with another EU project called RESTORE, the ECRR has made a huge leap forward in their mission to set up NC's also widely in Europe. The FORECASTER project and the RESTORE will provide NC's in efficient information exchanging in order to improve their skills and knowledge on ecological river restoration.

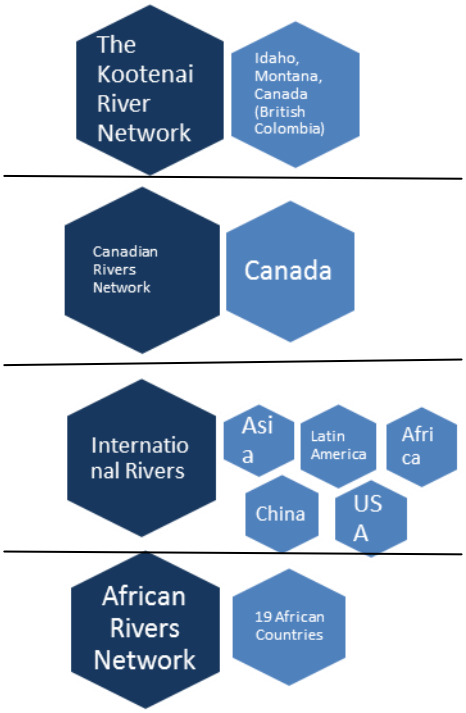
Another reason for the lean presence in the international arena is the limited budget of the Management Board's organisations they work for. The limited budget is constraining the opportunities to be there when it is necessary. Important conferences and meetings that are vital for the networking for ECRR are missed out. For example the River*Symposium* and the World Water Forum and many others. For these, the Chairman has been present, as a representative of the ECRR.

2.5 Interlinkages

The interviews provided insight whether a network is linked with any other network and how they are interlinked, in what form: formal partnerships/ loose contacts between individuals of the network/centre. Some interlinkages are formally set, in form of a partnership, some interlinkages are loose.

Looking at figures 5 and 6 you can see that all these networks in figure 5, do have a vast reach in their own country and internationally. International Rivers do has a reach even through whole of the South. As you can see in figure 6, river restoration centres and networks from the continents Australia, Europe and a part of Asia are connected. These are dark blue coloured. The light blue coloured are the networks/centres that are directly interlinked with the dark blue coloured centre/network. However, the light blue coloured networks and centres that are connected with the Asian River Restoration Network, Australian River Restoration Centre and the ECRR are not directly connected with one another or to one of the dark blue coloured networks through formal/informal partnerships or cooperation.

Fig.


The Kootenai River Network
Idaho, Montana, Canada (British Colombia)
Canadian Rivers Network
Canada
International Rivers
Asia
Latin America
Africa
China
USA
African Rivers Network
19 African Countries

5

EU
Europe
ECRR
ARRN
JRRN
CRRN
KRRN
ARRC
River Restoration Northwest, USA
Australia

Fig. 6

ECRR does not have any form of direct partnership/alliance/cooperation with the organizations River Restoration Northwest, USA, Australian River Restoration Centre and the African River Network. Korea River Restoration Network and China River Restoration Network are part of Asian River Restoration Network, but the direct partnership is not represented in a mutual way, networking is limited in this since this all happens via the secretariat which now is with the JRRN. Information is therefore channeled via JRRN, where the secretariat of ARRN is held.

Not any of the dark blue coloured or the light blue coloured networks/centres in figure 5, do have any formal partnerships/cooperation with the networks/ centres listed in figure 6.Taking figures 4,5 and 6 together we can conclude that partnerships of ECRR outside Europe is very limited.

Even though ECRR does have and/or have had cooperations with different kinds of networks/centres/organisations, further development of official partnerships or alliances are missing. The opportunity is there to try to link with RR networks/centres/organisations that are partner of RR networks/centres that do have any form of cooperation/alliance or partnership with the ECRR. However, no further steps have been undertaken to also link them in the direct network of ECRR.

Now, this intention to put more effort in linking all the River (Restoration) related networks around the globe has also been discussed and declared in the ARRN's Roundtable meeting in Seoul, Korea September 2010. With an official paper like this, the more incentives there are to realize it for all the parties involved. There are no other papers written by other Networks that did the same, therefore ECRR needs to find opportunities in bringing this forward in other parts of the world together with all the networks involved in that particular area/country. By linking all the river (restoration) networks and centres together you improve and enhance the information and experience sharing ,- and exchange.

Chapter 3 Description of Networks and Analysis

3.1 The Network's Approach

The network's approach is for each region/country very different, since they have to deal with the different riverine environments in the first case. What the other factors are that determine their approach is dealt further in this chapter. Another issue is their approach towards the public and their partners, in how they bring out their message for rivers and river restoration. There are different methods concerning this. First of all you have a top-down or a bottom up approach which is the red line in their specific approach. Starting from there, you have different methods for bottom-up/grass-root approach, people's empowerment, and public awareness programs. If an organization prefers the top-down approach, they need to consider more their attitude towards the national and local governments rather than the public and the local people living around and living from a river. None of the selected networks that are further examined does that however, they all have a bottom-up approach. The exact steps they take, the processes they make do differ per network or country or region. How their approaches and their processes are, have been analysed further. Also is taken into account the lifetime of the network/centre, some are still in a start- up phase, and still are figuring out how to deal with other actors and stakeholders. This is also discussed and further analysed.

3. 2 Approach North America - USA

The definition of river restoration is for the Kootenai River Network, KRN, and North America in particular very similar to that of ECRR, but the Dave Rosgen method is leading when it comes to RR. Dave Rosgen is for some Americas the Guru in when it comes to stream/river restoration. He is a former hydrologist at the US Forest Service. Dave Rosgen has developed his own stream classification system that is easier to use and to apply for a broad audience, than other existing classification systems. The system is based on simple alphanumeric code (such as A2, C4, G1) (*HCN, 2003*). The codes are based primarily on the river's slope and the size of the gravel and rock in its bed. What it does exactly is that it helps people assessing the health of streams and apply restoration techniques (*HCN, 2003*). The US Forest Service has even adopted Rosgen's classification method as its standard system.
He is seen as the most outstanding small- river restorater in the US.

Kootenai River Network and its partners in both the US and Canada are using his technique in applying stream and river restoration. They say that Dave Rosgen's method is leading in their approach towards ecological river restoration. During the last 15 years, over 14,000 hydrologists, engineers, biologists and ecologists from around the world have taken Rosgen's courses.

Even though many are impressed by this method and Rosgen's approach towards stream and river restoration, experts are very careful about him and his expertise. They think that Dave Rosgen's technique may oversimplify restoration, as a following consequence that projects fail. Their argument is that classifications are used to simplify, but it is also very easy to

oversimplify them (*HCN, 2003*). This is what David Montgomery, professor at the University of Washington says about Dave Rosgen: *"The thing I fear most about (Rosgen's) courses is, we may be over-empowering people, making them think they know more than they do."* Prof. Montgomery, resent the fact that Rosgen's method is making people dangerous towards restoration projects, because they oversimplify restoration, while restoration is an exact science (*HCN, 2003*).

As the US Forest Service has adopted Rosgen's method as its standard method, it brings a lot of negative impact on contractors in a dozen states that need to take Dave Rosgen's one week courses in order to bid on restoration projects or stream monitoring project. For now, critics say, that this is a useful communication tool – though it is a pity that no one wonders whether he/she can do better.

KRN believes also in the use and application of vegetation in river restoration projects, other than Canada who tend to incorporate climate change more in their rive restoration projects. KRN says that you reach a more broader audience by having face-to-face contact with all the people involved and the different stakeholders. Therefore, they organise on-site tours and workshops for the private landholders, locals and the different stakeholders.

Pic. 4 USA Rivers Map(source: enchantedlearning.com)

3.3 Approach North America - Canada

The Canadian Rivers Network, CRN, has been established two years ago, in 2008 to get quickly information to Canadians about what was being planned, behind closed doors, by bureaucrats and politicians. The CRN entirely voluntary based, with no governance or any official legalised. CRN is about information sharing between all kinds of groups: private, public, governmental, first

nations people, recreational groups, environmental supporters, etc. CRN gets a lot of support from a company that retails in outdoor equipment. Mainly through the members of this company, CRN managed to get known in Canada. They've reached over 2 million Canadians in only two year time. People thus knew what CRN was about, why it existed and what they themselves could do to support CRN in their efforts. The NGO called Waterkeepers was also of great help to the CRN. Waterkeepers do the restoration works for the rivers. It is a US NGO that not also works in Canada. Waterkeepers is a legalized network, with paid staff, good organization and they get political support. They work at grass root level in order to enable river restoration. Therefore, Waterkeepers was one of CRN's ideal partner.

CRN is using an internet format to sharing knowledge and exchange information. At the moment CRN tries to get better organised and to get legalised in one way or another.CRN hopes to achieve what ECRR has achieved, what ECRR is doing at the moment, and a lot more. They want to organize meetings between different parties in order to gain common ground on waterway issues. Actually CRN is about enabling public participation, creating awareness and giving information to all the different actors and stakeholders, in order to protect waterways and improve where necessary.

The difference between Europe and Canada is the fact that Europeans were in Canada for almost 400 years now, Europe has a long process of civilization and use Canadian waterways for economic and public means. Canada and US had the luck of having natural waterways, that were not 'tamed' or channelized, they were totally unharmed. Unlike Europe, where natural waterways are not to be found. The problem in Canada is therefore not so much restoring rivers, bringing back the river to their natural state, as in Europe, but that people are not aware that this is at risk nowadays.

The risk lies in the current government. Thus, the main drive behind the motivation to act and form CRN as an information channel was to stop government plans to modify the Navigable Water Protection Act, NWPA ac. This act that does exist in Canada for over 100 years, officially enacted in 1882. With the abandoning of the NWPA act everything could happen, to what has always been the natural waterway.

The NWPA act gives people the right to navigate on waterways. The definition of 'navigation' under the NWPA act means that any waterway in Canada that can be navigated by a canoe qualifies as navigable. The right to navigation means that everyone has the right to place legal obligations on anyone who wants to build or develop anything on waterways that would impede navigation. NWPA enforces the ones who build structures, in or over waterways in Canada, considers the impact of those structures on navigation and the marine environment. Furthermore, the ones who build the structures must consult with the people who would be affected by the loss of navigation and must apply for a permit from Transport Canada, which can then trigger an environmental assessment with the Canadian Environmental Assessment Agency.

The modifications mean that it is now a ministerial discretion and not anymore a public right to stop modification alongside or in the river that may harm the navigation. CRN's efforts in stopping governments plans to modify NWPA have unfortunately failed. Now with the new elections that has started in Canada, they hope that an eventual new government do want to listen

to them and revers the modifications in the Act.

The people's power had until recently great power in Canada. The power and the right to stop and prevent from modifications and industrial developments that would harm the rivers and waterways. Since the NWPA act had been modified this power and right of public to decide about their waterways have been disappeared.

The government elections in Canada started in May this year, CRN thinks there is a serious chance to get their job done with other government parties (than the government that sits now). The political issue is quite biasing the environmental work in Canada. Canadian politicians are far right or far left, there is nothing in the middle. Therefore, consensus on issues like environment are hard to reach.

The social perception is wrong according to CRN, only if society better understand the situation at the moment and for the future. To make society aware of this threat, is a way to help prevent that natural waterways, get modified or harmed by other economic/political activities.

Pic. 5 Canadian Rivers Map (*source: www.commons.wikimedia.org*)

A grad student, funded and supported by the Walter and Duncan Foundation, is now at the moment looking for opportunities to get CRN or any other network/organization incorporate. So that the public right can be in a way placed into a formal institution such as a National Centre for RR and water management. This urge is even bigger in Canada, since there is no overarching governmental body/ organization that does look after water quality, water management or the ecological status of water bodies. In Canada they're lacking the judicial framework that give organizations and networks the mandatory and incentives to work actively on water management and river restoration. There are only guidelines when it comes to drinking water, water quality

and quantity. There are only non-governmental organisations such as, for example, the Waterkeepers (a US organization from origin, but that does river restoration related works in Canada since recently). These guidelines are meant as an advice, and is not supported by any national law on water or water quality. National legal framework for water quality is therefore the necessary input for river,- water and river basin managers that is lacking in Canada. Therefore river restoration and river basin projects are really hard to execute since there is no governmental support. Lindsay Telfer is trying to look for opportunities to setting up a Canadian National Centre for water management, that can focus more on the ecological status of inland water surfaces and rivers. An NC can support other water organizations through the whole of Canada in their efforts for ecological river/inland water surface (restoration) projects.

3.4 Approach Australia

The Australian River Restoration is a very small not-for-profit organization. They only exist for a short time, and are working to carve out a niche that focuses on the interaction of people and rivers. ARRC is reasonably known in Australia., particularly amongst catchment management agencies, Commonwealth State and Regional natural resources management agencies and the non – government sector. They are very active in the water community in Australia, working primarily with catchment management and scientific agencies.

ARRC's profile is growing as they deliver more services. In Australia river restoration has a more social approach. This social approach is also clear in ARRC's major activities. One of ARRC's major activities is running workshops that focus on 'connecting through conversation', using 'narrative evaluation' techniques and highlighting the importance of using story as a way for people to share their experiences and knowledge about river restoration. These workshops are actually ARRCs core business. Through extensive use of blogs, Twitter, Facebook, LinkedIn, advertising through natural resources management lists, the Environmental Water Managers Community of Practice website and email alerts they try to raise awareness and exchange knowledge on river restoration.

Restoration in Australia does not has a meaning as a 'return' to the 'natural conditions', and neither do they restrict it only to ecological outcomes. The Australian RR centre's philosophy is that we should not try to return the river to the natural conditions with ecological value since many of the rivers have been altered so much that can never return to what they were before the people started to interact and exploit the resources the river provides. Therefore, we need to try restore the rivers as a reflection of societies' or communities' choice and values about what can be achieved given multiple interests such as the environmental, economic, and social.

The ARRC is different in its approach as it has more a focus on the interaction between people and the rivers. Since they believe that people are valuable natural assets and that too often people tend to focus on the biophysical/technical 'fixes' for a river, without really thinking about the people that are needed to implement, maintain and value that river. ARRC believes that they have reached this status in their region as they have both the biophysical science of river restoration but also knowledge in management, sharing and adoption. Therefore, they attract more people from a variety of different disciplines.

The ARRC's objective towards the connection between people and rivers is thus big that it does not form alliances or partnerships with potential partners if they don't share the same values and beliefs that motivate the work they do. It is thus strong that they believe that looking after people is as important as looking after our rivers – as they say:
"" without people we have no one to protect, restore and maintain our rivers, so understanding people, working with them, educating and raising awareness about the importance of healthy river, is where we focus our activity". However, they do not have the resources to maintain partnerships and alliances, they would only enter a partnership if they would have the resources such as the required investment and he people to maintain the good relationships, in place. They also need an assurance from a potential partner that they would work at this too with the same commitment as they have.

Pic. 6 Australian Rivers Map (Source:www.anra.gov.au)

What makes the communities in Australia much more active in rive restoration is the fact that waterneeds and problems are urgent. Some communities in Australia are running out of water, because the quality and the quantity in their rivers are so poor. Rivers are 'dying , as biodiversity get lost, water quality and quantity are such that the changes in the rivers are seen between only two generations. The urgency is therefore much higher, and that means that ARRC needs to connect with people as they need them to get out and work in their rivers. People in Australia are also more connected to their rivers than in Europe. In Europe, ARRC thinks, that many of the rivers are tamed and seen as threats for flooding, so the emphasis is on engineering and controlling. Rather than the emotional feeling that Australians attach to their rivers, as their rivers are not tamed as they are and were in Europe.

The urgency to make the message for restoring rivers personal is therefore important – ARRC's feels a need to have people sharing their stories and talking about what they feel, what motivates them to care about rivers and what they need to keep them doing river restoration work. As ARRC believes that too often, professionals who work in this field of expertise, are the ones from whom we gain the insights. While, this is removed from day to day life, and the activities of people who live and work along the rivers. Therefore, they bring people together to

share stories and experiences and knowledge of rivers, as a mean to get richer conversation and insight into the many environmental, economic and social values rivers provide for society.

3.5 Approach Australia- International River Foundation

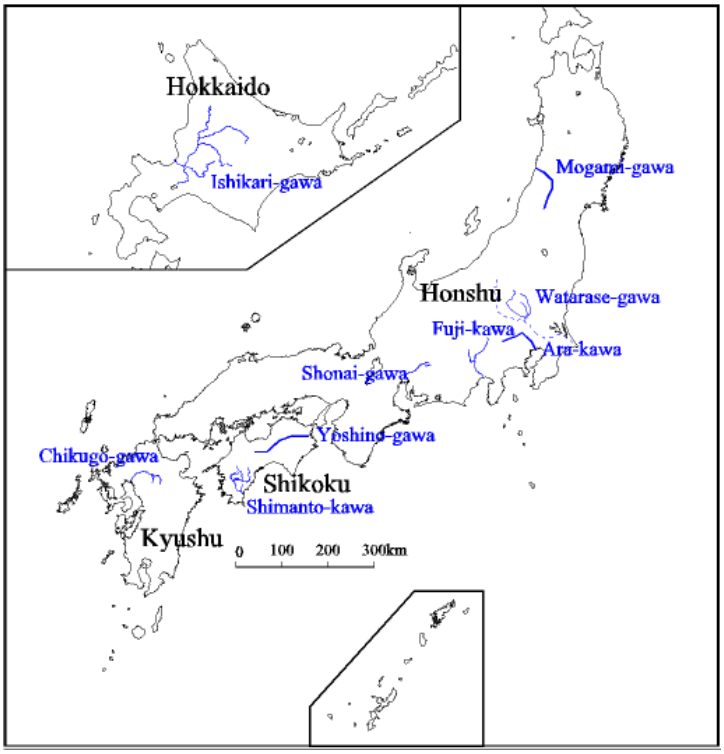
The International River Foundation is established in 2003, so IRF is still working on developing their networks. As to reach people that restore rivers, they've a program developed, that is the River*prize*. Applicants apply for it, IRF has a selection of judges, that reward the applicants with the best practice. The winners become the Riverprize alumni and IRF partner with them to leverage their good work and prize money. Other organizations also want to be associated with best practice and IRF partner with those organizations too. Through e-copies and hard copies of publications, and the International RiverS*ymposium*, IRF tries to to exchange knowledge on river restoration. IRF believes that many rivers are facing the some problems, however, the process to restore a river in Australia differs by the legislation, money available, community commitment and ownership of the problem. Many similar technologies might be transferable, but may not be financially or culturally viable.

3.6 Approach Asia

In Asia the Asian River Restoration Network works extensively on river restoration. ARRN has been formed as a response to the recommendation in the "River Restoration in Asian Monsoon Region" session held in the World Water Forum in Mexico City in March 2006. ARRN's objective is to exchange knowledge and technical information on the restoration of rivers and watersheds in Asia. The ARRN has been established since recently (2006) by concerned organizations of China, Korea and Japan.

The definition of river restoration in Asia and for ARRN is basically similar to that of ECRR. There is a significant difference though, Asian countries have much in common as to their natural and social environment, including frequent flooding, deterioration of living environment due to rapid urbanization and concentration of the population into low-lying areas. ARRN has concluded that for the Asian Monsoon Region not only ecological restoration is needed but also cultural restoration concerning the river and watershed. Particularly in a region as in Asia and the Asian Monsoon Region, where it is difficult to get recognition for river restoration, simply because there are more urgent problems regarding floods.

ARRN acknowledges the fact that 'restoration' does have a different meaning and interpretation in different countries. Therefore, ARRN set as a their first priority to clear the definition of key words such as "river restoration" and "river rehabilitation", these reflections will be used as input for the ARRN's river restoration guideline. The river restoration guideline is one of ARRN's major activities. The guideline will get updated when insights are gained and perspectives have been adjusted, since the three parties in Korea, China and Japan have not reached consensus yet.



Pic. 7 Japan Rivers Map (source: http://titan2.cee.yamanashi.ac.jp)

For the establishment of ARRN all the three members (Korea, Japan and China) got financial support of three governmental organizations. Though, the network is an independent local/domestic network with no political reference and it neither belongs to any governmental organization. Japan and Korea don't receive any financial support from the government (after establishment), but they do get indirect support such as the lecturer dispatch for lecture or sponsorship event from the government. The CRRN belongs to, as is usually the case in China, from the government.

In China the IWHR (Institute of Water Resources and Hydropower Research) is in charge of CRRN's secretariat. IWHR is one of the largest comprehensive research institute in the field of water resources and river environment. Therefore, the latest environmental issues, that are based on IWHR's research, are shared with China. China is known for its sometimes 'unfriendly' environmental projects, but JRRN and KRRN tries to contribute to solve environmental problems as is in their ability to do. In discussions, they also try not to criticize the projects or policies of a member, but hold the discussion in a way that it is educational for all the members rather than judging one's ideas and principles.

ARRN therefore does not face any political struggles. One of the reasons is also because there are not international rivers to where the three ARRN countries are related to directly. The only struggle they face is the discussion about Taiwan's joining to ARRN. Since there is a political issue between mainland China and Taiwan, they still have an internal discussion in ARRN, to try to solve this issue. Another issue is the fact that Taiwan, is internationally not regarded as a country but as a region, therefore tendencies to make Taiwan join as a 'National' network is thus more difficult.

Projects and policies concerning environmental issues, and in this case river restoration, are mainly carried out by governmental leadership. Therefore there exists a gap between the professionals that do work on rivers and river restoration and environmental related issues and the general public. Due to this, there exists simply a gap between stakeholders, such as the gap between the citizens and the government, or between citizens and citizens in Asia where floods are frequent.

An example is the case in Korea, where currently four major national river restoration projects are going on. A majority of the public objects to the projects. In Japan, the Japanese government took river management by leadership historically. This has not changed, although there is the difference in each country. Looking at the financial and human resources side, the importance of private sector and citizen sector have increased more than ever. ARRN therefore tries to treat and approach those sectors equal compared with government interference and the experts.

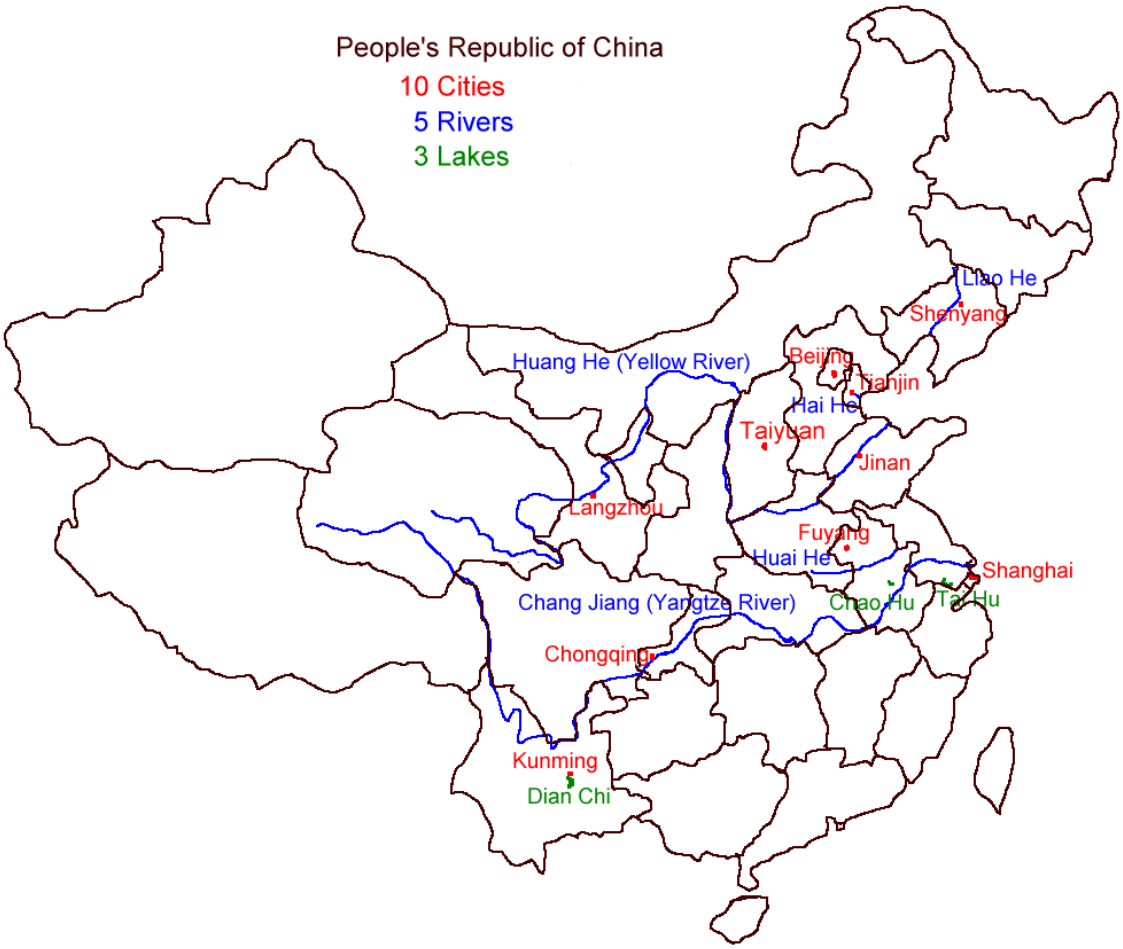
Pic. 8 Korea Rivers Map (source: www.wepa-db.net)

In 2008, the Japanese Ministry of Land, Infrastructure, Transport and Tourism has published the results of the reviews of river environment policies so far, called: "Improvement and conservation of river environments-Review of projects after revision of the River Law and their future". As a response to this review, the Japanese government set a new principle such as: *"to conserve and create habitat/growing/breeding environments for living organisms in the river, keeping the natural operation of the entire river in mind, and considering livelihood and harmony with the history and culture of the region."*

In addition to this, three new directions for river planning were installed:

a) Focusing attention on the working of nature: "River planning considering the working of nature in the entire river"
b) Focusing attention on livelihood, history and culture of the region: "River planning aimed at conserving and creating habitat, growing, and breeding environments for living organisms, but also connects to the region's history and culture"
c) Standardizing the project cycle including collaboration with citizens: "River planning considering overall river management including research, planning, designing, construction, and maintenance."

Pic. 9 Rivers Map China (source: http://www.chinacp.org.cn/eng/cpmaps/clean_all.html)



The challenge now in Japan is to control floods (that still occurs on a frequent base) and river restoration. Regarding to social interest that has to be taken into account when it comes to river management, logically, safety is given priority over river restoration.

ARRN thinks that " *The river restoration brings local activation and living moisture as well as natural environments restoration and ecosystem restoration, and also contributes safety. In other words, it becomes the profit for a citizen."* And that it is therefore thus important that such a sense of values is bred in society. They believe that not only this is the benefit society gains: river restoration also becomes a mediator and contributes a sense of unity of the people living to each local river.

3.7 Approach Africa

The African Rivers Network (ARN), is formed in 2003. It is a network that brings together African civil society organizations and dam-affected communities advocating for sustainable utilization of African water resources and engages on river- and dam- related issues.

ARN envisions a people-centered development in Africa where:

- Decision making on water and energy development practices alternatives to large dams are promoted.
- Human rights, community acceptance of decisions, and reparations of outstanding social injustices are the cornerstone
- Ecological sustainability is the legacy for the future generations.

ARN interprets Ecological river restoration as a measure taken to restoring and keeping the river in its original and natural form under which the flow is not interrupted and where the human activities do not upset the ecological balance of the river. ARN, brings the message of river restoration to the society through campaigns together with the local / affected communities.

The political opinion is both negative and positive depending on who is control, what they want to do and the environmental knowledge and sensitivity they have, or the greed to undertake "development" at the expense of environment and ecosystems. ARN deals with political/ governmental struggles by sensitizing those concerned, calling for a wider society involvement, petitioning the decisions, and where necessary demonstrations. If ARN get support from the government then that is by agreeing with ARN, and calling on them to join and find solutions that are sustainable and work for the good of all together. Also when the government departments concerned get down to restore damaged river ecosystems. In Africa you have to deal with a lot of other pressures and struggles compared to Europe, therefore the approach towards river restoration and protection of them and the societies and that live from them are way different.

Differences according to the ARN that are to mention are:

(a) *" The political conditions of Europe are far different from those in Africa. While the European leaders can listen to the demands and advise of the public and experts, in Africa they do not mind as long what they want to satisfy their objectives.*

(b) *Investors in Africa take advantage of the begging status of African governments to overlook the required environmental standards.*

(c) *Even where the communities affected know what is right, disregard to human rights common in Africa lets them down.*

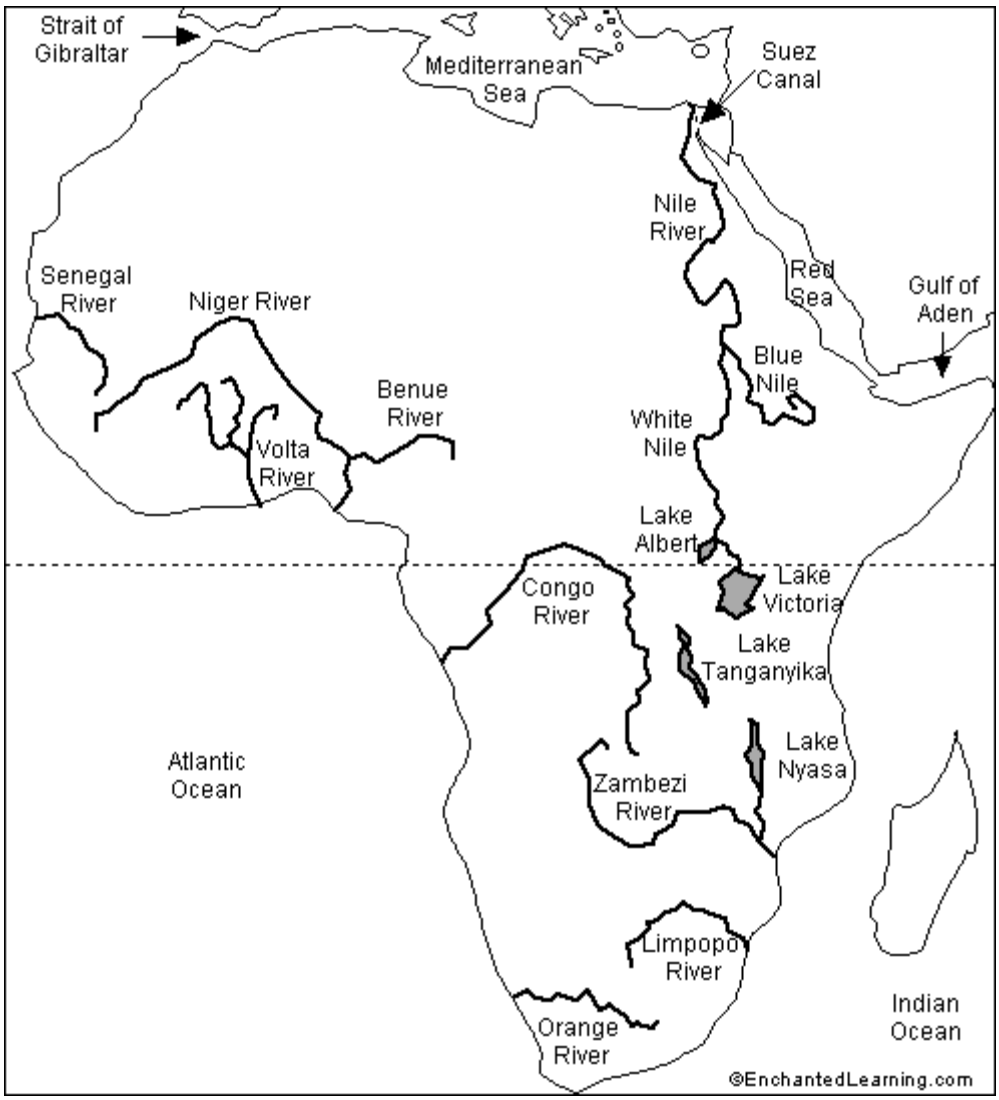
(d) *Also the knowledge levels of African communities are lower as compared to those in Europe. This has implication to their sensitivity and incentive to conserve given ecosystems.* "

ARN believes that both ARN and ECRR can contribute to river restoration and have mutual benefit by:

a) "By Sharing knowledge and information

b) Cross visit studies and exposures to learn from seeing

c) *Capacity building on the importance of rivers' natural ecosystems how to effectively undertake rivers restorations "*



Pic. 10 Rivers Map Africa (source:www.enchantedlearning.com)

3.8 Approach ECRR

ECRR is known in Europe, only there where NCs are or there where they are busy setting up one. Outside Europe, the ARRN , ARRC and the IRF do know about ECRR since they have a link with the Chairman, Bart Fokkens. These networks do not have direct links with the MB and the Secretariat. The Secretariat is the executive part of the ECRR, therefore there must be also a link to the Secretariat. So that the Secretariat can be able to support the Chairman in maintain the contact with the network and distribute more easy the knowledge available from these networks to the networks directly linked to the ECRR. These networks are situated in Europe, the ones listed Chapter 2. As the objectives of ECRR is to :

- encourage and improve confidence in promoting and implementing river restoration;
- increase the knowledge on river restoration schemes and techniques;
- improve European access to, and exchange of information from worldwide experience in river restoration;
- obtain healthier river ecosystems, greater biodiversity, better water quality and flood management;
- gain greater benefits from river restoration projects, through better knowledge and increased evaluation of projects success;
- facilitate and encourage the establishment of national river restoration centers in all European countries.

From these objectives there are again 9 targets formulated for the coming 3 á 5 years, which are depicted in the communication plan of ECRR. These targets are:

1. Ecological RR is a main issue in the European RBMP's and is a common practise implementation of EU-directives on water management.
2. And up to date, professional and well-functioning and wider spread network
3. More National Centers in Europe are founded (80% coverage)
4. Partnerships are strengthened and broadened
5. The supporting organisation of ECRR is formally embedded
6. Organisation is up to date
7. ECRR is ready for and supports the implementation of the (seerate RR projects) RESTORE and HYMO
8. ECRR is linked to relevant projects to learn form
9. ECRR's network of RR experience is an improved delivery vehicle for RR knowledge

The target audience for these objectives are divided into 'Primary target groupd and secondary target groups:

Primary target Groups:

Members of ECRR
Civil servants
Researchers
Private companies
RR related networks
Other public and private organisations

Secondary Target Groups

Press & journals
Civilians
Researchers indirectly involved with RR
Educational institutes

Since the Secretariat has been moved to DLG previous year, 2010, ECRR has been through a lot of changes. ECRR's got a new house style, new website, new communication plan, new strategy plan, RETORE, HYMO…ECRR is thus actively preparing themselves in order to be better able to operate effectively in the international arena. They at least made the first steps towards it. Another aspect in their plans is their urge for strengthening their existing network(s). For the how, where and why, this thesis is conducted (see Recommendation).

3.8.1 SWOT Analysis of ECRR

The SWOT – analysis of ECRR the result of the analyses that are made of the other RR networks and centres. The comparison helped listing the weaknesses in ECRR's approach towards networking and bringing out the message of river restoration. It also cleared out the questions in what parts and elements of ECRR's approach have strengths, weaknesses, opportunities and what does form (a) threat(s). According to the results of the SWOT analysis, ECRR's approach is further described in detail and explained in the Recommendation. In order to be able to understand the organisation better, and to better formulate the recommendation for them.

Strengths	Weaknesses	Opportunities	Threats
EU guidelines/WFD	Management Board (MB)	Reformulation tasks and objectives of MB	No permanent location for Secretariat yet
Technical knowledge	Budget	RESTORE	Awareness among selected group of people
Website	Time/FTP	HYMO	No use of social media
Newsletter	Weak or no use of social media	Reformulation tasks and objectives Chairman	After-life RESTORE
Conferences	Website has a weak interactivity for users and website visitors	New Communication Plan	
Seminars	No use of local newspaper		
Active Secretariat	Active participation in international networking is missing		***SWOT 1***

3.9 Summary of all approaches

Having analysed the approaches of all the networks and the centres, it can be concluded that there is a huge need for more and enhanced knowledge and experience exchange and sharing. Some networks and centres with the same missions are not aware of one another's existence. There is a need to linking all the river (restoration) centres and networks together – how this must be done is not clearly defined by the interviewees. At least they want to link up with the ECRR the interviewees have said.

Another element is that all the interviewees find it utmost important to include more social aspects in restoring work. To get support from the public is getting more and more important. Therefore, they say that to create awareness to talk to the public and make them aware of the need the the urge to do restoration work is as important as restoring the rivers itself.

In the following SWOT analysis the needs, the gaps and the overlapping elements, compared with the ECRR, depicted by the interviewees are listed. This in order to show clearly what is still missing in ECRR's approach in order to improve the sharing and exchange of knowledge and experiences river restoration:

Strengths	Weaknesses	Opportunities	Threats
Contacts of the Chairman	Post- period of current Chairman	Maintainence of contacts by Secretariat and MB	Same process, activities and actions with next Chairman unclear
Different approaches – means different challenges and insights on river restoration. Which can be shared with one another to learn from	Time that is needed to maintain contacts to keep the information flow going.	Linking all the networks and centres together	Money to finance time and travelling expenses for network activities (when needed)
Interpretation of ecological RR is adapted to the local /regional/national needs, strategies, and objectives	Definition of 'Ecological River Restoration' yet unclear in different parts of the world	To understand the reason for different interpretations of ecological RR, and learn from it	Differetn interpretations and definitions of eecological RR are not resprected and/or not uderstanded
Political neutrality and governmental support ***SWOT 2***	No Governmental support	Political neutrality – needed to achieve the goals and objectives	Political interference and lobbying by politically active individuals

This SWOT provide a quick scan of the current need and the gaps in actual answering of the needs of the networks and centres by the ECRR.ECRR wanted to strengthen its position, what comes along with strengthening its position is that it if it plays an active role in enhancing and improving the knowledge and experience sharing and exchanging. As this is the need of ECRR and other river (restoration) networks and centres. When ECRR can take the lead in answering to the need of networks and centes that do have the same objectives as the ECRR, it will gain the credibility and eventually strengthen its position in the international arena.

Chapter 4 Social Media

4.1 Social Media

Significant for each network is their use of the social media. The majority of the networks/centres do make use of popular social media such as Facebook, Twitter and they have very extensive and a highly interactive website.

In the graph below you can see what type of social media are used on the websites of all the selected networks (including ECRR):

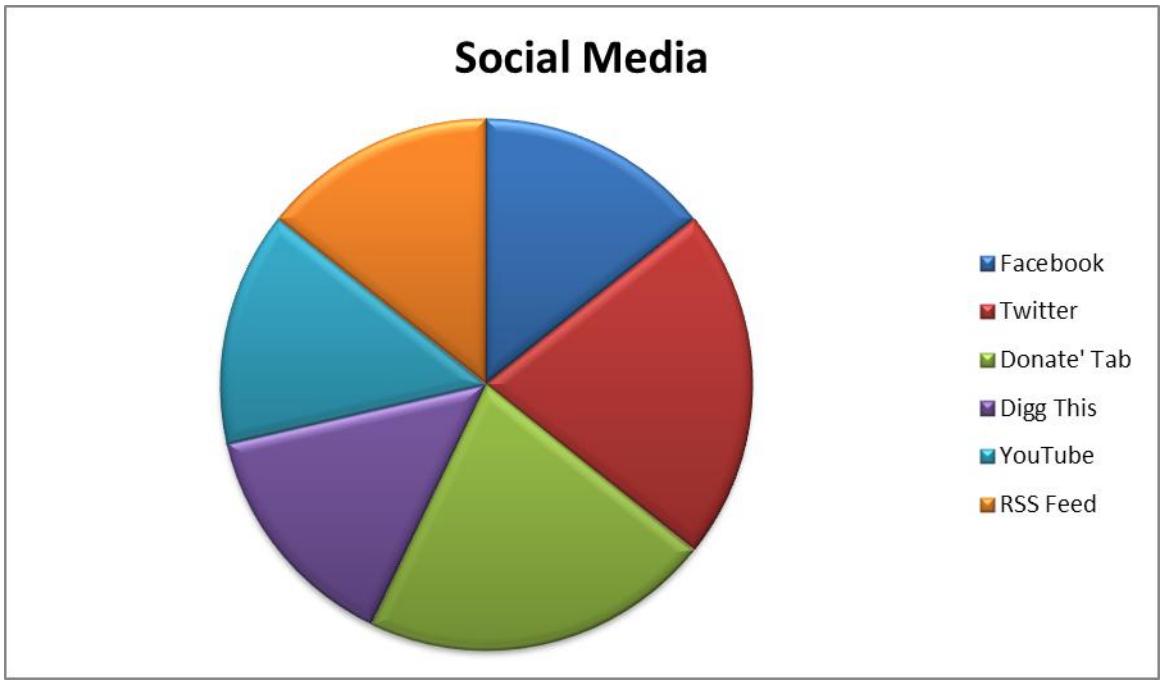


Fig. 6

Popular social media sources are Twitter and Facebook, ECRR however, is not making use of any of the social media listed in figure 6. In the Communication Plan of ECRR they acknowledge the need to make more use of Socal Media. They name LinkedIN and discussion groups such as: 'River Restoration Professionals', 'Water Management'and 'Waterlink International'. Though, it would me much more interesting to make use of media that is accessible to a wide variety of target groups. By using Facebook you also get the non-professionals, who do not work with rivers, but who are interested in rivers. Some may already do work with rivers on a voluntary bases, therefore, with social media that is accessible for everyone you reach more people and information exchange take place at a higher level.

The networks/centres do have different approaches in order to spread the 'word' of ecological river restoration. Though there are several methods that are popular. See graph below for the most frequent used method in order to sharing and introducing the 'word' of ecological river restoration.

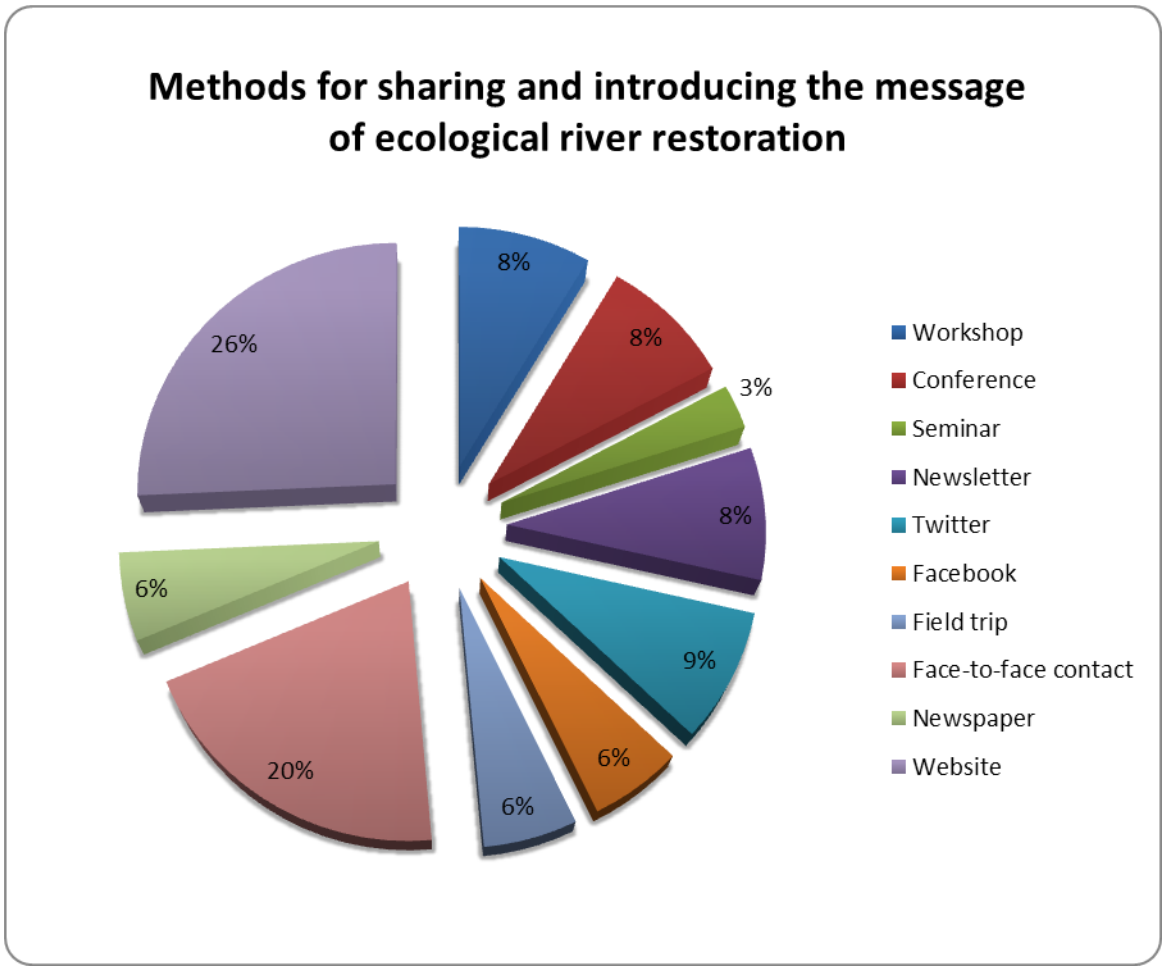


Fig. 7

Though, social media is used in a significant amount none of the interviewees have recognized he use of social media as a source to make public aware of ecological river restoration. Surprisingly every interviewee said that to make people aware what ecological river restoration is, first they need to understand what the need is for ecological river restoration. What benefit they gain from it, and what changes it brings to their environment and life styles.

To make them understand what ecological river restoration is, the core is to define for each country what ecological river restoration means for the people and their environment. Ecological river restoration does not have the same impact and does not bring the same changes with it in every corner of the world. Therefore, a clear definition per country and region must be defined in order to explain what ecological river restoration means for the public.

ECRR is the only network compared with the networks that are analyzed that does have a database with river restoration related literature. Though, this is not promoted in a way. By extensive use of social media you can also promote this. Information and experiences are thus shared with the ones that do look for literature or are just interested in reading it.

Discussion

All listed river (restoration) networks and centres have been approached several times for doing and interview. Unfortunately, only 7 in total responded. Therefore, analyses could only be done by help of a small selection of networks and centres. The ones that responded to the request for doing an interview, though have put a lot of effort in the interview. Analyses are made in four continents: Asia, Africa, Australia and North America. The analyses are thus variable enough to draw conclusions from. Some of them have done the interview via Skype and some have filled in the interview questions themselves and returned the document. The interviews were the basis for the analyses that are made. Interviews were thus useful, however, we must take into account that sometimes, personal opinions are intertwined with the overall vision of the Network/Centre that was interviewed. In general though, the interviewees were really clear about what they personally thought, and what the networks'/centre's opinion was on some of the questions in the interview.

Since there are no set theories on how an environmental network should function, this thesis is totally based on what the author thought what was needed for the ECRR, based on ECRR's communication plan and strategy plan. Opinions of other networks and centres have contributed to this.

Personal Opinion

Since I did my placement at DLG and worked also after my placement period for DLG I had the luck of experience and knowledge on the topic and organization I did this thesis for. This made me help to do the desk study on beforehand and think about the thesis outline more thoroughly. However, what needs to be taken into account is the fact that the work started late. DLG had a troubled start with RESTORE, and eventually the idea was that I needed to do the thesis for ECRR. As we discovered that the slow start of RESTORE would delay myself too much in my work, we decided to change plans. This change of plans happened halfway April. The time pressure and the uncertainty for such a long period made it sometimes hard to overlook things and plan smoothly. Everything now had to be done in a fast pace and with no room for major adaptations.

Since ECRR is also an European Centre, the people involved with the ECRR are spread through whole of Europe. Therefore, to approach the different Board Members, was not possible. Since the BMs are very busy people and they do are academic people with no or little approach towards ECRR. Of course it would have been better when Board Members of the ECRR were better accessible, but the reality is different from the wishes. Luckily the Secretariat is in the Netherlands, and is also the Chairman a Dutchmen, therefore I was able to ask them for help and advice when needed. The former secretariat of the ECRR, Wim Zeeman, was also my thesis mentor at DLG. That smoothed things up, when I was uncertain about the work I did. Although, there has been a time pressure, and taken that into account, my personal opinion towards this is that it quite worked out well.

Most of the listed river related networks, centres and organization in figure 2 are more busy doing protection work of rivers from dams and other installations rather than restoring rivers to its

natural ‘state’. So when I say that I have only been able to reach a selected number of networks and centres out of the total, one must take into account the background of the other river related networks, centres and organization. Doing an interview with them would have helped better understand their organization, but it might not have been relevant for doing in-depth analysis and including the interview results in this thesis.

Recommendations

The four continents that have been analyzed were also thus relevant for ECRR since, RESTORE focused on networks and centres in Europe, so the focus in this thesis is therefore outside Europe. The switch has to be made in the coming three years for the ECRR management from setting up NC's to also extending and strengthening the current networks. What is needed for this switch is their recognition of their current situation and that this has to be changed in order to be successful in their efforts internationally. ECRR should add a few things in their approach in order to be successful. These things are adaptions and adds to the current approach, of which every element has a different background. So there are not only changes required from technical aspect, but also from a social perspective and governance.

Knowledge and experience exchange

A greater emphasis must be put on the strengthening of the knowledge exchange approach. The MB should support more better the Secretariat and the Chairman in this. Therefore, in SWOT analysis nr. 1, the reformulation of the objectives and tasks of the MB and the Chairman are both listed as opportunities. The MB now, has a weak functioning compared to the active role the Secretariat and the Chairman plays. By reformulating the objectives of the MB and the Chairman, ECRR as a whole will be better able to put more emphasis and effort in improving, extending, enhancing and strengthening the access to and exchange of knowledge on rivers and river restoration.

Another element is the importance of attendance of Board Members and the Secretariat at big events on water(shed),- river basin,- and river management such as for example the River*Sypmposium* Word Water Forum, EU Conferences, Workshops and Seminars, etc. Currently only the Chairman in participating as much as possible during these kinds of events. The communication plan (draft version) of the ECRR describes that the ECRR does need to revise the tasks of the MB and the Chairman in the near future and that the Secretariat should be officially embedded so it can gain more funds in order to finance these kinds of network activities.

Compared to the interconnections with the analysed networks and centres and the ECRR we can conclude that ECRR can play a bigger role in in active seeking for those that do have the same goal and the ECRR. So that ECRR and the other network or centre can be of mutual benefit and improve their knowledge access and knowledge exchange. ECRR can thus serve as a portal to the International networks and centres for the NCs that are linked with the ECRR. The NC will thus be better able then to continue seeking for knowledge themselves, once the contact with the networks outside Europe have been made. The NCs will then better be able to also link their national and regional network and knowledge and experiences available to those outside Europe.

Creating Awareness on River Restoration

When talking about approaches and the differences between the different networks and centres, you can conclude that ECRR has the most technical approach. The other networks find it much

more important to look at the social aspects of river restoration and management. They do emphasise the need for people in restoring rivers, people's feeling about rivers and creating awareness among civilians about the need to restore rivers in order to get support from them.

Examples in Canada and the US shows that by reaching out to the locals and public, they get a lot of support for the work they do and in helping the network achieving their mission. The example Akira Wada from the JRRN/ARRN gave of the river restoration projects in Korea, shown that by a lack of understanding of the need for restoring rivers, the Koreans object to the current three major restoration projects. Except for ARRN, none of the examined networks and centres were aware of what ECRR exactly does, or/and some never heard of ECRR before. As a network that focus in Europe, there is no sense of the existence of ECRR outside Europe, except for the partners, which is in this case ECRR. Therefore, presence in the international arena to make people aware of your existence is very important to reach the mentioned objectives of ECRR, that are listed in the communication plan and the strategy. However, there are some aspects that makes this harder: limited budget and time are one of those limiting factors. However, reformulating ECRR's Management Boards' objectives and tasks will be an opportunity to improve this. When Board Members are told to visit as much as possible conferences, workshops and seminars in their country and region, information can be shared via the BMs. One does not need to travel over to the location oversees. Regional attendance and participation in these kinds of activities is not only necessary for ECRR strengthening of its position internationally but also regionally.

Therefore, ECRR should try to look harder for opportunities by thinking out of the box. Not only making use of their own website and newsletter and discussion groups (in the future), but also look for opportunities nearer to home. Such as the local newsletter, KRN does write articles in the local newsletter to make the locals aware of what they do and what they want to do. People then do know what they do, for what reason, and KRN gets a lot of support for their mission and objectives. CRN gets support from a commercial outdoor retailer. That is also very innovative ways to get financial support. To reach to those with the same passion, although those may not have the technical knowledge on river restoration, they can help ECRR with the resources available if they know what you do and why you do it. Creating awareness among a wider variety of people and not only experts and professionals such as researchers, ECRR members, civil servants, private companies (in the field of rivers and water management(, RR related networks and other private,- or public organisations, ECRR must look further. Opportunities for (financial) support may lie somewhere where you'd not expected to be.
This doesn't mean that ECRR should have the same approach towards river restoration, though wit can learn from the social approach such as ARRC's. ECRR can learn how to do this, in a creative manner that attracts a wide range of different types of people.

SWOT Analyses

When looking at SWOT 1 and 2 it can be concluded that there is a huge opportunity for the ECRR in strengthen its positions and take the lead in answering the need of river (restoration)

networks and centres. The need is linking all the networks and centres together, and by this improving the exchange and sharing of information and experiences on rivers and restoring rivers. Therefore, ECRR should look to its current position and its desired future position. If they want to change their future position they need to take active action in their approach and change their weaknesses into strengths and opportunities. Improve current strengths and make active work of turning opportunities into concrete activities and make them own.
in the following table, in short, is listed how ECRR do the aforementioned with **'Smart Solutions'**:

actively using social media	extensive participation in regional/national/international (networking) events
write articles in local newsletters (in order to create awareness, support and sympathy from the public and enhance social participation and understanding for the projects undertaken and needs in future (not only write articles in magazines and newsletters that are for RR professionals/practitioners/etc.)	social participation, public involvement
create awareness	sharing the public of the need of restoring rivers
the need for maintaining 'natural' rivers	organize fundraising events
list all the different definitions and interpretations of (ecological) river restoration (in order to improve the knowledge on RR and to improve understanding on regional/national/international differences in the approaches towards rivers and restoring rivers)	linking (other) all RR networks and centres by actively looking for contacts
active maintenance of contacts (other RR networks and centres) also by the Secretariat and the MB	reformulate tasks and objectives of MB in order to improve an stimulate national and regional exchange of knowledge and experiences on RR
reformulate tasks & objectives of Chairman in order to give the Secretariat and the MB more support to get more involved internationally	

Conclusion

The analyses of all the examined river (restoration) networks and centres, have provided enlightening insights on the views and opinions and approaches. The conclusion that can be drawn from these interviews was that there is a huge need for knowledge exchange with international network that deal with rivers and river restoration. The interviewees were happy to keep in touch with the ECRR in order to keep the information/experience giving and exchange flowing. Even though, the ECRR has to intentions to actively organize and operate in the international arena outside Europe, they can reach more consensus and reach their objectives by at least letting other networks actively aware of their existence, and their vision, missions and their objectives. As one of the main objective is information exchange, ECRR can contribute to this by smart solutions to maintain contact with river restoration networks outside Europe.

ECRR has made huge leaps forward, with the changes it have been made since 2010. The start was made in little, thus important changes, such as the renewing of the website, new house style, new flyers, etc. The seminar in Bucharest fastened this process of changing. A new communication plan, a Blueprint for setting up NC's, and a new strategy plan were written. These documents should contribute in reaching the set missions of ECRR and the newly formulated objectives (as listed before). ECRR's MB, Chairman and Secretariat is being steered by men with technical background. This thesis provide also social advise that can/ should be included in their future approach.

The need for technical knowledge on ecological river restoration have always been important in Europe. Although, ECRR have been answering to this need for years, not its time to also look at the other side of the coin and look to the need that is not so evidently as the need to technical knowledge. Social/ public support can give ECRR and other NC's so much more benefit. It may be indirect results, but it gives results. Neither always on the short term, but definitely on the long term.

For the ECRR there is a lot of opportunity to gain their desired strength in their position in the international arena, just by answering the needs of the other river (restoration networks. The need is more and more enhanced sharing and exchanging of knowledge and experiences. Sharing of each other's view and opinions on the interpretation and definition of ecological RR, the social side of rivers and restoring them, technical knowledge and experience with dealing with political struggles. That is the need of current networks. If they look at what they can do to make this reality and make concrete action out of it, the ECRR will be successful in their mission to strengthen its position and moreover in: improving and enhancing the knowledge and experiences on ecological river restoration internationally. If they can manage this, they gain the credibility and the respect from others and it helps ECRR a lot in strengthening its position. It position is thus important to make things happen to make other networks trust what you do and trust in the activities ECRR does. Interlinking even more river (restoration) networks will be easier when other know about ECRR and their activities. Interlinking better and more, means also more and better exchange and sharing of ecological river restoration.

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List of networks and linked websites

ECRR- European Centre for River Restoration (www.ecrr.org)

ARN- African Rivers Network (http://sites.google.com/site/africanriversnetwork/)

International Rivers (http://www.internationalrivers.org/)

International River Foundation (www.riverfoundation.org.au)

Prairie Rivers Network (http://prairierivers.org/about/staff/)

Global Restoration Network (http://www.globalrestorationnetwork.org/ecosystems/freshwater/riversstreams/case-studies/)

JRRN- Japan River Restoration Network/ ARRN – Asian River Restoration Network (www.a-rr.net)

JRRN- Jordan River Restoration Network (Facebook- Jordan River in Salt Lake Valley)

ARRC – Australian River Restoration Centre (www.australianriverrestorationcentre.com.au)

The Kootenai River Network - Montana, Idaho, British Colombia (http://www.kootenairivernetwork.org/)

ARN, Arakan Rivers Network- Burmese (http://arakanrivers.net)

BRN, Burma Rivers Network (http://www.burmariversnetwork.org/)

Georgia River Network (http://www.garivers.org/)

CRN- Canadian Rivers Network (http://www.ispeakforcanadianrivers.ca/)

The Danube River Network of Protected Areas (http://www.danubeparks.org/?area=network)

River Network- USA (http://www.imrivernetwork.org/about/)

European Rivers Network (http://www.rivernet.org/ern.htm)

Friends of River Narmada- India (www.narmada.org)

South Asia Network on Dams, River and People - SANDRP, India (http://www.sandrp.in/)

Living River Siam- Thailand (former Southeast Asia Rivers Network (SEARIN) – (http://www.livingriversiam.org/index-eng.html)

IWAP, International Water Association Publishing, www.iwa.com

Other sources:

http://www.enchantedlearning.com/europe/rivers/labelmap/labelanswers.shtml
Chairman ECRR: Bart Fokkens

Appendix

Interview format

X stands for name of network

1. **How does X interprete ecological river restoration, compared to explanation of ecological river restoration given by the ECRR (see: http://ecrr.org/home-ecological-river-restoration.html)?**
2. **How does X bring about the message of river restoration to the society? Do you do make use of any type of awareness projects?**
3. **How does the society perceive river restoration and the activities of the KRN?**
4. **What is the status of X within the region?**
5. **How have you achieved this status? What have you done to create the bases of trust in the region?**
6. **What type of media/source does the X make use of in order to exchange knowledge on river restoration?**
7. **Does the X have partnerships/alliances with other networks/organisations/NGO's/ Government services/ Business?**
8. **In what form does these partnerships/alliances take place?**
9. **How do you maintain these partnerships/alliances? Does the X have specific ideas about it?**
10. **What is the political opinion of your networks' activities? Positive or negative, could you please further explain this?**
11. **If you face political struggles/biases, how do you deal with it?**
12. **If you do get political support, in what form, what type of support do you get?**
13. **Regarding question 11 and 12: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?**
14. **In what form and what way do you think, the 'word' of river restoration can be brought out to the society the best?**
15. **Looking at ECRR, and our activities and principles (see: http://ecrr.org/approach-ecrr.html) , do you think that X and ECRR do have significant differences/similarities in practice, take into account the regional/political/social differences?**
16. **What aspect do you think that make the practice of river restoration so different, looking at international level? Is it the political, environmental, social, technical, economic or cultural aspect(s)? Please explain.**
17. **How can ECRR and X be of complementary use at international level? How can we both contribute to the river restoration?**

Interview Ian Elwood, Web Producer, International Rivers ***(test interview)***

By: Mafasha Maharoof, ECRR. The Netherlands

1. On the website you say:

Q: "We foster grassroots organisations in more than 60 countries.." and :

"We work to reform top-down and opaque decision-making processes.."

Are these actions based on some principles or methods of participation?

Such as MSP (Multi Stakeholder Processes) or with any PRA/RRA

(participatory rural appraisals/ rapid rural appraisal) tools?

1.A: We work with organizations that all have their own internal processes

for decision-making. We work with each organization in a different way,

depending on the region and the people involved.

2. Q: How has IR reached the message to such a distance? Digital resources are not that accessible in the South, compared to the West.

a) How have contacts been made?

b) Have you invested extra money in the start- up phase in organizing meetings in the South?

2.A: I think this gap is significant, but only on the scale of popular media, for example news media. Since we are fairly specialized and network primarily with activist and NGO groups in countries outside of the US, our partners have greater access to technology.

We use electronic communications extensively with the partner organizations in Brazil, Cameroon, Bangkok, etc.. and the partner organizations serve as the direct link to the larger community.

All of the organizations we work with are community based, we don't start new organizations, but work with existing organizations on the problems that they face related to rivers and dams.

3.Q How has IR helped their regional partners in setting up regional offices? Did the regional partners get funding from the US and educational/ professional support?

If so, what did you do to realize this?:

a) By sending US professionals to the South for long/short term internships or any other method?

3.a We don't set up offices for regional partners, they are independent.

3. b Not that I know of.

3.c N/A

3.d N/A

4.Q Did the organization also face political struggles during their journey in spreading the message, in North- America as well as in the South? If so: How did you deal with it?

Does IR have political ties with government parties or government bodies?

Hoe does IR deal with government bodies in the South? Do the regional partners have their own methods or do they make use of any kind of MSPs?

4.A: No, our only challenge is how to get the media to give our stories more attention, but we don't face much censorship. The only example of censorship we face is that China blocks internationalrivers.org completely.

5.Q: How has IR as a Western organization reached consensus and a bases of trust in foreign countries and the locals?

5.a: Was it through face-to-face contact(s)?

5.b:Through digital media?

5.c:Through organizing events in the host country?

5.d:Any other means or incentives?

5.A: We visit partner organizations that are working on similar issues as us.

In most places in the world people aren't wary of us because we are "Western." In most places the affinity between people who are facing similar struggles is our strongest bond, and quickly helps us to look beyond cultural differences to see our common goals. Direct contact with individuals is really important In the beginning, but digital media are crucial to keeping contact sustained.

6.What type of participation (Pretty (1994)) form does IR make use of in order to reach out to the locals and communicate the message with them:
1.Passive participation
2.Participation in Information giving
3.Participation by consultation

4.Participation for material incentives
5.Functional participation
6.Interactive participation
7.Self-mobilisation

I wouldn't say that any of these items encapsulate the type of participation that we engage in with partner organizations. We are a part of a social movement that consists of many cultures, organizations, individuals and groups.

7.Q: Does empowering people and fostering grassroots organization also means creating new social partnerships? B)Building relationships between people and organisations from public ,business and civil constituencies?

7.A: Yes.
7.B:Yes. We try to get everyone who will be impacted by development of rivers involved in a civil dialog, whereby all people's needs can be met and no one's rights are violated.

8.Q: How does IR ensures credibility & quality at the regional offices?

8.A:We use all of the same methods to manage employees in regional offices that we do to manage local employees.

9.Q:Do the regional offices have their own strategy, vision regarding the activities and processes?

9.a:If so:How does IR deal with this?

9.b:If not: How do you make sure that the regional offices do keep building on with the same vision and strategy as IR in the US?

9.A: Everyone has their own ideas, but the vision and strategy are a part of our organization's foundational documents. We have a mission statement, vision statement, strategic plan and other organizational documents that are discussed among all employees at great length. Once we come to an agreement on the scope, vision and strategy of these core documents, individual programs develop specific work plans that outline what actions they will take. These workplans are available for review by all employees to assure transparency and that people are doing what they say they are doing.

Mafasha Maharoof, ECRR

Interviewee: Akira WADA of ARRN/JRRN
13-04-2011

1. This initiative of ARRN started as a cooperation between three countries: China, Korea and Japan. What type of partnership do you share with one another?
As a response to the recommendation in the "River Restoration in Asian Monsoon Region" session held in the 4th World Water Forum in Mexico City in March 2006, the Asian River Restoration Network (ARRN) was formally established by concerned organizations of China, Korea and Japan. Please refer to the following reference material in detail.

ARRN Overview: http://www.a-rr.net/jp/en/arrn/docs/ARRN_overview.pdf

As it is described in the ARRN Charter's beginning, ARRN was established for exchanging knowledge and technical information on the restoration of rivers and watersheds in Asia. Each in three countries, China, Korea and Japan, uses a different language, but we are aiming to share our useful experiences through English that is common language for us. Please refer to the ARRN Charter in detail.
ARRN Charter: http://www.a-rr.net/jp/en/arrn/docs/arrn_charter.pdf

2. On the website you say 'one of the objectives is to provide opportunities and venues for river restoration…'
How is river restoration interpreted by your network, compared to the explanation of river restoration given by the ECRR (see:http://ecrr.org/home-ecological-river-restoration.html)?
In the recommendation of the above mentioned session held in the 4th World Water Forum in 2006, a part of our interpretation about river restoration is described. Please refer to the recommendation first.

Recommendation on special session: http://www.a-rr.net/about/overview.html

We think that our definition of river restoration is basically similar to ECRR. On the other hand, Asian countries have much in common as to their natural and social environment, including frequent flood, deterioration of living environment due to rapid urbanization, concentration of the

population into low-lying areas. Therefore, based on ARRN's past discussion, we need to focus on not only ecological restoration but also social environment restoration and cultural restoration concerned with the river and watershed.

In addition, through our discussion by three countries since ARRN's establishment, we have recently realized that each country has own local language which means "restoration" and each language has different background and objective. Under this circumstance, we agreed that to clear the definition of key word such as "river restoration" or "river rehabilitation" is our first priority, and we will reflect its output into the ARRN's river restoration guideline which we continue to update. In terms of the importance of keywords definition, please refer to the following minutes of ARRN's round table meeting held in Sep. 2010. ECRR's president also joined the meeting in Korea.

Minutes of Roundtable Meeting: http://www.a-rr.net/jp/info/letter/docs/ARRNroundtableEng.pdf

In brief, we have not yet reached agreement on the clear definition of river restoration so far.

3.How do you maintain the relationship between the other networks (China,Korea) at a healthy level? What form of communication do you make use of?
With regard to the ARRN's organization structure, please refer to the article 6 to 9 in ARRN charter.

ARRN Charter: http://www.a-rr.net/jp/en/arrn/docs/arrn_charter.pdf

ARRN holds a board meeting every year and board member by three countries face and discuss ARRN's vision and activities. At the same time, ARRN holds the annual ARRN's international forum to exchange the latest information on river restoration each other.

In 2008, we realized that one meeting a year was not enough for deep exchange, we established two committee, information and technical committee, and we held face to face committee meeting once a year in 2008 and 2009 except the above mentioned board meeting. However, because of limitation of the budget, committee meeting is held by email discussion since 2010. So far, we held five times ARRN's board meeting called "ARRN Governing Council meeting", seven times ARRN's international forum, and twice committee meeting. Please visit to the following site to see the summary report.

ARRN activity reportr: http://www.a-rr.net/report/index.html

As for communications by secretariat level of three countries, we use email. Through we prepare ARRN's guideline or annual report together, we share technical information and latest activities each other.

4. China is known for its sometimes environmental unfriendly projects… How do you as a transnational network deal with these kinds of situations (if they occur)?
"Institute of Water Resources and Hydropower Research (IWHR)" is in charge of CRRN (China River Restoration Network)'s secretariat. IWHR is a governmental institute under the ministry of Water Resources China, and IWHR is one of the largest comprehensive research institute in the

field of water resources and river environment. Therefore, we can share the latest river environmental issues which China feces based on the IWHR's research, and we can discuss how ARRN contribute to solve the environmental problems in China. In our discussion, we try not to criticize the projects or policy of each member, and we go ahead through the argument in a direction learning a good point.

5.What is the political opinion of your networks' activities? Positive or negative, could you lease further explain this?
Since "River Restoration in Asian Monsoon Region" session in the 4th World Water Forum in Mexico 2006 was cosponsored by three governmental organizations which are in charge of river management, ARRN was established based on the positive support by government. However, ARRN is a network of each domestic/local network, ARRN does not belong to the specific governmental organization, and ARRN declares "ARRN is a non-political organization." in the ARRN charter.

The relations with the government in each domestic network, China, Korea and Japan, are different in each country.
With regard to Japan and Korea, JRRN and KRRN don't receive any financial support from the government, but both organizations receive indirect support such as the lecturer dispatch for lecture or sponsorship event from the government. For example, since JRRN is operated by a Non-profit foundation and a private enterprise, we think that we keep neutrality with the government for our operation.
On the other hand, as I've already explained, CRRN belongs to the government.

6. If you face political struggles/biases, how do you deal with it?
ARRN has not faced a big political problem so far needing the adjustment in member countries. One of reasons, we think, is because there are no international rivers where three ARRN member countries are related to directly. Because a lot of international rivers exist in Asia including China,
we think that various political problems will occur if we come to handle this problem in future. ARRN faces one political struggle about Taiwan's joining to ARRN. As you know, since there is a political issue between mainland China and Taiwan, we continue discussion to solve this issue. ARRN's organization structure was designed based on the ECRR's one. Since Taiwan is regarded as not country but region internationally, it is difficult to join as a national network.

7. If you do get political support, in what form, what type of support do you get?
Please refer to our answer in the question 5.

8. Regarding question 6 and 7: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?
ARRN aims at a development of river restoration technology of each member country/region through international information exchange activity while assuming mind of the voluntary independence basics. Therefore, for example if we say Taiwan issue, political expectations are removed, and development of the opening-like international activity that came from science and academic regards us as an ideal.

In terms of the relations with the government, the government took river management by

leadership historically, and we think there is not a change about the basics from now on although there is the difference in each country. In financial and human resources side, however, importance of private sector and citizen sector increases more than before, and we think that wrestling society system is ideal for river restoration while public sector, private sector, and citizen sector each are concerned equally. Therefore, we hope that we can create the opportunity when private sector and citizen sector play an active part even more through ARRN and each domestic network while maintaining good relations with the government. To realize this, it is important that we keep moderate distance with the government and any political expectations are removed.

9. How do the societies of Japan, Korea and China perceive river restoration?
First of all, please refer to the attached paper. JRRN secretariat presented the paper titled "Development of Asian River Restoration Network for Knowledge Sharing" in the 13th International Riversymposium held in Australia in October 2010. In this paper, we summarized a feature of Asian countries river restoration based on sources which we obtained through the ARRN activity.

Projects or policies we introduced in the paper are mainly carried out by governmental leadership,
therefore, please understand that a gap exists between consciousness for the river restoration of the general public.
Particularly, it is extremely difficult to express "recognition of the river restoration" simply because there are many problems between the stakeholders including the gap between citizens and government, or between citizens and citizens in Asia where floods are frequent.

For example, national major four river restoration project is ongoing in Korea, but the majority of the public opinion objects to the project. Therefore, the evaluation that how river restoration is recognized in society is quite difficult. We, as JRRN, cannot grasp it precisely how river restoration is recognized in society in China and Korea.

With regard to the situation in Japan, the results of reviews of river environment policies so far were published in March 2008 by the Ministry of Land, Infrastructure, Transport and Tourism as "Improvement and conservation of river environments - Review of projects after the revision of the River Law and their Future." As a response to the review activity, government newly set the principle such as "to conserve and create habitat/growing/breeding environments for living organisms in the river, keeping the natural operation of the entire river in mind, and considering livelihood and harmony with the history and culture of the region." for all river public works. In addition,
The following three new directions for river planning were installed.

(a) Focusing attention on the working of nature; "River planning considering the working of nature in the entire river"
(b) Focusing attention on livelihood, history and culture of the region; "River planning aimed at conserving and creating habitat, growing, and breeding environments for living organisms, but also connected to the region's history and culture"
(c) Standardizing the project cycle including collaboration with citizens; "River planning considering overall river management including research, planning, designing, construction, and

maintenance"

On the other hand, coexistence of flood control and the river restoration becomes the big problem while flood disaster still occurs frequently in Japan. Particularly, if we think about social interest about river, there are the present conditions that river improvement for flood control, it means safety, is given priority to over river environment restoration. As for the budget allocation of the government for the river works, river improvement measures for flood control occupy most still now.

10. What do you do to bring about the message of river restoration to the society? Do you do any type of awareness projects?
We think that spreading six recommendations in the fourth World Water Forum in the society, and to realize them concretely are our mission.
Recommendation on special session: http://www.a-rr.net/about/overview.html
With regard to ARRN's activities, please refer to the article 3 and 4 in ARRN charter. Furthermore, please refer to the following reference material.

ARRN Charter: http://www.a-rr.net/jp/en/arrn/docs/arrn_charter.pdf

ARRN Overview: http://www.a-rr.net/jp/en/arrn/docs/ARRN_overview.pdf

It has a limit to widespread significance of the river restoration to the society by ARRN and each domestic network alone. Therefore, we think that organizational crossing-like activity is necessary while deepening various other networks, academic organizations and NGO/NPO and cooperation relations. In addition, in Asia including Japan, specialized information about river restoration is still closed only among some professionals of government, administration, engineers and researchers. Therefore, we recognize the activity spreading these to the social public while taking the role of the interpreter of the specialized information. The spread of publications such as lecture holding or guidelines is one of these activities, too.

11. In what form and what way do you think, the 'word' of river restoration can be brought out to the society the best?
"The river restoration brings local activation and living moisture as well as natural environments restoration and ecosystem restoration, and also contributes safety. In other words, it becomes the profit for a citizen." We think that it is important that such a sense of values is bred by the society.
Furthermore, river restoration becomes a mediator and it contributes a sense of unity of the area inhabitants to each local river.
As a result, we hope sustainable river restoration activities relation with ecosystem and the human life soundly while coexisting flood control and water use are implemented by local citizens leadership.

12. Looking at ECRR, and our activities and principles (see:http://ecrr.org/approach-ecrr.html) , do you think that ARRN and ECRR do have significant differences in practice, take into account the regional/political/social differences?
We are totally impressed with activity and principle of ECRR, and we think there are no significant differences in practice between ECRR and ARRN. ARRN does not grow up until we

can declare a clear principle like ECRR, but we hope that we will send such a firm principle to the society while continuing discussing it with ARRN members.

We think that one of big differences between ECRR and ARRN is the existence of EU, especially "EU Water Framework Directive". There is no regional framework so far in Asia like EU, and we do not have any common objective or rule in Asia. Therefore, the motives to participate in ARRN activity are different in each participating countries. As I answered in the first question, we think that "Information exchange" to utilize the advanced experience and technique of other countries at my country is a central participation motive. I have already mentioned, but we think that there are some differences between ECRR and ARRN because there is not an international river to be related to directly between three countries constituting ARRN.

13. What aspect do you think that make the practice of river restoration so different, looking at international level? Is it the political, environmental, social, technical, economic or cultural aspect(s)?
It is difficult to prioritize it such as natural characteristics, the history and culture brought up in natural characteristic, outlook on for nature religion, topography characteristic, politics, social structure, economic power, a technique level. However, the result that all elements were involved in compositely appears as a figure of the rivers, and it must be many actions for river restoration to cause a difference.

The countries in the Asian monsoon region have much in common as to their natural and social environment, including deterioration of living environment due to rapid urbanization, concentration of the population into low-lying areas, not to mention meteorological characteristics. On the other hand, Asian countries have a number of differences in their social system, religion, culture, legal structure, technological level and so on, which lead to the differences about river restoration procedure.
But we have not tried the analysis of the further international comparison and we cannot say the further thing under the present conditions.

14. How can ECRR and ARRN/JRRN be of complementary use at international level? How can we both contribute to the river restoration?
As for this last question, please refer to the minutes of the ARRN roundtable meeting held in Sep. 2010, because we have already discussed this topic as "Role of River Restoration Network".
Minutes of Roundtable Meeting: http://www.a-rr.net/jp/info/letter/docs/ARRNroundtableEng.pdf

In terms of the relationship between ECRR and ARRN, Dr. Shirakawa, JRRN technical committee member gave us some suggestion in the meeting. In addition, Dr. Bart Fokkens (ECRR president) also gave us very important opinion as an answer to the question of the participants from China. Because I fully agree to these professional's opinions, so I have same answer for this question.

Mafasha Maharoof , ECRR

Interviewee: Rox Rogers, Kootenai River Network, USA

1. How does KRN interprete ecological river restoration, compared to explanation of ecological river restoration given by the ECRR (see: http://ecrr.org/home-ecological-river-restoration.html)?

A: very similar to that of ECRR. We also incorporate public use portion/people and communication. KRn started 13/15 years ago and started working together with British Columbia. It was a process rather than project based. The water quality evolved in this area. Later on we also worked in Montana and Idaho and British Columbia got out of picture, since it was a too vast region to work on. The KRN works on restoring streams and rivers like the ECRR, but we also try to protect two native fish species. For protecting the fish species we get governmental support. Our main target group are private landholders, mainly in poor labour areas.

2. How does KRN bring about the message of river restoration to the society? Do you do make use of any type of awareness projects?

A: Society was not aware of what ecological RR is about, we use the Dave Rosan program as a basis for our stream restoration. In the US he is the "father" of stream restoration. His principles we use to make public aware of what ecological river restoration is about.

3. How does the society perceive river restoration and the activities of the KRN

A: In the US the threat is government based problems concerning logging. Therefor we get a lot of support from private land holder, since they are aware of the negative impact of logging on their environment.

4. What is the status of KRN within the region?

First the thought that KRN was an environmental activist group. But as time passed by, people saw what we actually did in practice, and we gained a lot of support from the private landholder who spoke good about us and the work we do.

5. How have you achieved this status? What have you done to create the bases of trust in the region?

The right people need to work in the field, in order to communicate properly with the actors. If people in the field do not know how to negotiate with other actors and stakeholder, the project/ work will be at stake. I have good relationships with the people in the field, which is in my case the private landholders.

6. What type of media/source does the KRN make use of in order to exchange knowledge on river restoration?
   A: We write articles for in the local newsletter to make public aware of what we do, what the progress is of activities we undertake, and to inform them about our successes and also failures. We also organize on-site tours. That is a huge success. We also organize RR workshops, in which a private landholder shows how an individual can contribute to restoring rivers and streams. A grass rot solution. Such social activities are the best to create trust and good image of your network. Hereby you also receive a lot of support from public, since they get aware of the positive impact of our activities.

7. Does the KRN have partnerships/alliances with other networks/organisations/NGO's/ Government services/ Business?
   A: We're working with GO's , NGO's .Industrial Timber Companies, landowners, and an NGO in Canada called 'Mainstream'.

8. In what form does these partnerships/alliances take place?

A: if we get to work with a 'new' partner we organize a face-to-face meeting. After that we have conference calls every month, and face-to-face meetings three times a year. And of course we use email.

9. How do you maintain these partnerships/alliances? Does the KRN have specific ideas about it?

A: It has been tough, since it is quite a vast region we focus on. So at a certain moment we had too much partners we worked with. Some people then stopped the cooperation, since it was too much, too big. This was all caused because we, KRN, did not have a clear vision, and we are missing an executive director. For the last one; we did not think we needed it, still we do not think is necessary, but it will be helpful for our process. Budget limits is the constraining factor to have an executive director.

10. What is the political opinion of your networks' activities? Positive or negative, could you please further explain this?

A:KRN stays neutral, we give our own opinion when we are asked something. It is not based on any political idea or so.

11. If you face political struggles/biases, how do you deal with it?

    A:people in politics started to get interested in pushing their ideas. Individuals try to convince us of their ideas. But we do not go into that, we stay neutral and do not work with any political group.

12. If you do get political support, in what form, what type of support do you get?

A: we get government funding for some part.

13. Regarding question 6 and 7: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?
    A: -

14. In what form and what way do you think, the 'word' of river restoration can be brought out to the society the best?

A:Face-to-face contact is the best. In Canada they incorporate climate change in their river restoration projects. So ecological river restoration has a broad interpretation and many forms of execution. KRN for example, incorporate vegetation as a major factor in our ecological river restoration projects. Since we think that vegetation is the basis for habitat and environmental preservation and control. And the on-site tours has also been very successful for us.

15. Looking at ECRR, and our activities and principles (see: http://ecrr.org/approach-ecrr.html) , do you think that KRN and ECRR do have significant differences/similarities in practice, take into account the regional/political/social differences?

A: Very similar. We do work with GO and private landholders and business sector more than ECRR does. That is the only difference. But the objective is the same. We focus also transboundary (Canada) and ECRR does the same. We used to charge members, but we've discovered that doesn't work. So we have stopped charging membership, ECRR is also for free right.

16. What aspect do you think that make the practice of river restoration so different, looking at international level? Is it the political, environmental, social, technical, economic or cultural aspect(s)? Please explain?

A: In Canada they base their projects on the Dave Rosgan technique and incorporate a lot more climate change in it. In the US the economic and cultural aspects are more important. Since we are dependent from private landholders and the business sector in order to execute our projects.

17. How can ECRR and KRN be of complementary use at international level? How can we both contribute to the river restoration?

A: Talk more with one another, stay in touch! We are both transboundary networks. We can share successes and failures and learn from each other. We have to share science and partnership.

Mafasha Maharoof, ECRR
Interviewee: Doug Skeggs, CRN
1-05-2011

NWPA is intended to protect the navigation of the waterways. Developers has to negotiate with navigators. NWPA was there to protect the public right to protect the waterways. NWPA doesn't exist anymore since 2009. It is the minister who decides about the waterways, not anymore the public. This has changed the public right to change something. Public participation is not anymore relevant now, they have nothing to say. Since then, 2009, CRN has been inactive. They have had nothing to work on.
The elections starts this month, and we hope to get back the NWPA act. Doug thinks there is serious chance in this with other governmental parties. Canadian politics is far right and the left only, there is nothing the middle. So it is hard to collaborate, especially with the far right as they are for enabling business and economic. And the left is for social justice. Nothing in between.

CRN is entirely voluntary based, with no governance of official legalized form. It is about information sharing between all kinds of groups: private, public, governmental, first nations people, recreational groups, environmental supporters, etc. CRN gets a lot of support from an outdoor retail business. Also through their support we were able to grow so fast in one year time. From an idea of a few people to reaching two million Canadians in one year time.

4) People are very much aware of CRN and the work we do. Therefor we are busy at the moment, with a grad student, to find a way to get CRN legalized and to be not a loose network anymore. For anyone who was contacted by us, knew who we are and what we did. This is also because of the network of the outdoor retailer and their members/ship. The outdoor retail support environmental protection. Another excellent partner is the Waterkeepers Canada. They are a legalized network, with paid staff, good organization, and they get political support. They work at grass root level in order to enable river restoration. But the basis of all in CRN is good communication.

10) Current government lied to them about the process of (abandoning the NWPA act) and about all the data of the consultation sessions and so on. IT would come later, what did not happen. It already happened. Therefore CRN missed the chance to organize something that would bring all different interest groups together with this political party and reach a common ground, where the interest of all the parties was met.
Though, CRN gained a lot of support from opposite groups, but their ability to change anything was limited. Since the current government disabled the right to discuss about this in parliament (what is possible in Canada). CRN was devastated.

5) CRN is using an internet format to sharing and exchange information. At the moment CRN tries to get better organized. They hope to get to what ECRR also is doing at the moment, and a lot more. They want to organize meetings between all different parties in order to gain common ground on waterway issues. Actually, CRN is about enabling public participation, creating awareness and giving information to all the different actors and stakeholders, in order to protect waterways and improve where necessary.

16) The difference in Canada is that Europeans were in Canada for almost 400 years now, Europe has a long process of civilization and use us waterways for economic and public means. Canada and North America had the luck of natural waterways, that are totally unharmed. Unlike, Europe where natural waterways are not to be found. But what the problem is here in Canada is that people are not aware that this is at risk. With the abandoning of the NWPA act, everything could happen to what has always been the natural waterway. People are not conscious about that, we try to make them aware of this. The social perception is wrong, only if they realize now what is at risk, they'll be able to understand better the situation at the current moment and for the future. This can help prevent that natural waterways get modified or harmed by other economic/ political activities.

From our conversation I can conclude that we should share in everything we have in common. This issue is global. We need also to get involve education and information more in this.
But the start is in changing the human's perception of natural rivers. We should make them aware of what the human value is of preserving the natural state of the environment. Taking away this, is taking away the ability to live on. "A healthy natural environment (everything) creates, or enhances quality of life for people."

Background the Canadian Rivers Network:

The Canadian Rivers Network (CRN) is a loose network of groups, organizations and people across Canada with an interest in protecting rivers for many purposes.

The CRN was formed in 2008 when it became known that the Canadian government was engaged in an effort to amend one of the oldest pieces of national legislation in the country…the Navigable Waters Protection Act (NWPA).

The NWPA was enacted in 1882. It enshrined into law the public right of navigation on waterways in Canada. Through this act, the public right of access and navigation was protected on all waterways in Canada that fit the definition of “navigable”. The definition of navigable was established as “able to float a canoe”.

The CRN was formed as a national network to quickly get information to Canadians about what was being planned, behind closed doors, by bureaucrats and politicians.

Over a period of one year, the CRN grew into a very effective network. At the end of our efforts, our notices were reaching over two million Canadians.

However, we were completely unsuccessful in stopping the government effort to amend the NWPA and limit the public right of navigation in Canada.

In January of 2009, the federal government, without any public consultation, introduced sweeping changes to the NWPA, which turned navigation from a public right into a ministerial discretion. Essentially, a minister of the Canadian government now has the right to declare a waterway non-navigable. The public has no legal recourse.

The CRN has not been active since 2009, although we retain all the connections we established through our network.

The CRN has never had any formal structure or governance, and no method of fund raising. It has been run entirely by volunteers.

The CRN has never been involved in actual efforts to protect specific waterways or rivers. Those efforts are achieved by local, regional and provincial level groups affiliated with the CRN. The CRN is simply a network through which information is shared on a national level.

An effort is now underway to investigate the potential for establishing the CRN or an organization very much like the CRN with a formal structure. This effort is being led by Lindsay Telfer and funded through the Walter and Gordon Duncan.

By: Doug Skeggs, Canadian Rivers Network

Mafasha Maharoof , ECRR

Interviewee: Robert Kugonza, African Rivers Network - ARN

1. How does ARN interprete ecological river restoration, compared to explanation of ecological river restoration given by the ECRR (see: http://ecrr.org/home-ecological-river-restoration.html)?

ARN interprets Ecological river restoration as a measure taken to restoring and keeping the river in its original and natural form under which the flow is not interrupted and where the human activities do not upset the ecological balance of the river.

2. How does ARN bring about the message of river restoration to the society? Do you do make use of any type of awareness projects?

ARN, brings the message of river restoration to the society through campaigns together with the local / affected communities.

3. How does the society perceive river restoration and the activities of the ARN?

Mixed, those seen to benefit from the river distortion for example by a dam producing and supplying them with electricity, may not understand, while those whose livelihoods are affected by the project that upsets the river understand and receive the message more easily.

4. What is the status of ARN within the region?

Formed in 2003, the African Rivers Network (ARN) is a network that brings together African civil society organizations and dam-affected communities advocating for sustainable utilization of African water resources and engages on river- and dam- related issues.

ARN envisions a people-centered development in Africa where:

- Decision making on water and energy development practices alternatives to large dams are promoted.
- Human rights, community acceptance of decisions, and reparations of outstanding social injustices are the cornerstone
- Ecological sustainability is the legacy for the future generations.

5. How have you achieved this status? By joining together with network members for the common cause.

What have you done to create the bases of trust in the region?

6. What type of media/source does the ARN make use of in order to exchange knowledge on river restoration? Newsletters, magazines, Emails listsevs websites among others.

7. Does the ARN have partnerships/alliances with other networks/organisations/NGO's/ Government services/ Business? Yes, ARN has other alliances all over the globe who share the same value.

8. In what form do these partnerships/alliances take place? Get united and either join physically or on line to express their concerns on a given challenge.

9. How do you maintain these partnerships/alliances? Does the ARN have specific ideas about it? Partnerships are maintained by the common cause that brought them together in the first instance.

10. What is the political opinion of your networks' activities? Positive or negative, could you please further explain this?

The political opinion is both negative and positive depending on who is control, what they want to do and the environmental knowledge and sensitivity they have, or the greed to undertake "development" at the expense of environment and ecosystems.

11. If you face political struggles/biases, how do you deal with it?

By sensitizing those concerned, calling for a wider society involvement, petitioning the decisions, and where necessary demonstrations.

12. If you do get political support, in what form, what type of support do you get? It is by agreeing with us, and calling on us to join and find solutions that are sustainable and work for the good of all together. Also when the government departments concerned get down to restore damaged river ecosystems.

13. Regarding question 6 and 7: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?

Examples of a few newsletters reports and magazines and members can be found at ARN web http://sites.google.com/site/africanriversnetwork

14. In what form and what way do you think, the 'word' of river restoration can be brought out to the society the best? By sensitizing the society in educational meetings, TV and radio talk shows Magazines and news letters and the media among others.

15. Looking at ECRR, and our activities and principles (see: http://ecrr.org/approach-ecrr.html) , do you think that ARN and ECRR do have significant differences/similarities in practice, take into account the regional/political/social differences?

Yes, ECRR and ARN have both similarities and differences.

(a) The political conditions of Europe are far different from those in Africa. While the European leaders can listen to the demands and advise of the public and experts, in Africa they do not mind as long what they want to satisfy their objectives.

(b) Investors in Africa take advantage of the begging status of African governments to overlook the required environmental standards.

(c) Even where the communities affected know what is right, disregard to human rights common in Africa lets them down.

(d) Also the knowledge levels of African communities are lower as compared to those in Europe. This has implication to their sensitivity and incentive to conserve given ecosystems. Among others.

16. What aspect do you think that make the practice of river restoration so different, looking at international level? Is it the political, environmental, social, technical, economic or cultural aspect(s)? Please explain.

They are more of political, social and economic aspects.

17. How can ECRR and ARN be of complementary use at international level? How can we both contribute to the river restoration?

a) By Sharing knowledge and information

b) Cross visit studies and exposures to learn from seeing

c) Capacity building on the importance of rivers' natural ecosystems how to effectively undertake rivers restorations.

Mafasha Maharoof,ECRR

Interviewee: Natalie Baker, International River Foundation, Australia.

1. On the website you say something about 'Significant Alliances and Partnerships'. I assume that bottom-up approach has been the core principle to establish those alliances and partnerships. Therefore, you need to get to the locals. How do you get in touch with the locals?
   We were established in 2003, so we are still developing our networks. One program that allows us to reach people restoring their rivers, is Riverprize. Applicants apply, we judge and a reward based on best practice – these winners become the Riverprize alumni and we partner with them to leverage their good work and prize money. Other organizations also want to be associated with best practice and we partner with those organizations too.

2. Which one of these types of participation (Pretty (1994)) form does IRF make use of in order to reach out to the locals and communicate the message with them:
   a. Passive participation
   b. Participation in Information giving
   c. Participation by consultation
   d. Participation for material incentives – **yes (prize money, funding delegates from developing countries to attend a conference to learn)**
   e. Functional participation
   f. Interactive participation – **one of our programs encourages prize winners to share their knowledge (twinning)**
   g. Self-mobilisation

3. How does IRF interprete ecological river restoration, compared to explanation of ecological river restoration given by the ECRR (see: http://ecrr.org/home-ecological-river-restoration.html)?
   IRF agrees with the first paragraph of the ERRC's description.

4. How does IRF bring about the message of river restoration to the society? Do you do make use of any type of awareness projects?
   Our Riverprize program – rewarding those who have demonstrated best practice and showcasing their achievements.

5. How have you achieved this status? What have you done to create the bases of trust in the region?
   As a charity there is less mistrust than other types of organizations.

6. What type of media/source does the IRF make use of in order to exchange knowledge on river restoration?
   International Riversymposium, e-copy and hard copy publications

7. The have partnerships/alliances with other networks/organisations/NGO's/ Government services/ Business. *How do you maintain these partnerships/alliances?*
   Communication, joint projects

8. What is the political opinion of your networks' activities? Positive or negative, could you please further explain this?
   A variety of opinions, however IRF is non-political

9. If you face political struggles/biases, how do you deal with it?
   Not applicable as we are non-political

10. If you do get political support, in what form, what type of support do you get?
11. Regarding question 12,13 and 14: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?

12. In what form and what way do you think, the 'word' of river restoration can be brought out to the society the best? **I don't think the public understand what river restoration is, or why it is necessary. So an education program is needed.**

13. You have ambassadors throughout the world. What is their task, and how have you managed to recruit them?
    Our ambassadors deliver our message and activities to those who don't know who we are. They can act as advisors in their region and to IRF. They were recruited for

being winners of Riverprize and showed passion and commitment for their river and to IRF. Others are involved in twinning and again shown passion, commitment to rivers and IRF

14. What aspect do you think that make the practice of river restoration so different, looking at international level? Is it the political, environmental, social, technical, economic or cultural aspect(s)? Please explain.
    All of the above. Many rivers are facing the some problems, however, the process to restore a river in Australia differs by the legislation, money available, community commitment and ownership of the problem. Many similar technologies might be transferable, but may not be financially or culturally viable.

15. How can ECRR and IRF be of complementary use at international level? How can we both contribute to the river restoration?
    I'd be interested in following up on this.

Mafasha Maharoof , ECRR

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Human rights, community acceptance of decisions, and reparations of outstanding social injustices are the cornerstone

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13.Regarding question 11 and 12: What would be a better situation? Can you give an example of a case, which you rather have seen happened it in another way?

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