13th Annual Network Conference

Delivering River Restoration: Recipes for Success

Restoring Europe’s Rivers
APPROACHES TO RIVER RESTORATION ACROSS EUROPE......

Bart Fokkens

Chairman European Centre for River Restoration

12-7-2012
EU RIVER BASINS

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HUMAN PRESSURES
80% rivers with alterations
• Water quality 59%
• Hydrology 41%
• Morphology 38%
• Connectivity 85%
• Multi impacted 47%
• Low land rivers 90%

15 criteria
9330 sample sites
WFD TIME TABLE

• 2000 Directive into force
• 2008 Draft IRBM Plan
• 2009 IRBM Plan +Plan of Measures
• 2010 Introduce pricing policies
• **2012 Operational Plan of Measures**
• 2015 Meet environmental objectives; first cycle
• 2021 Second cycle
• 2027 Third cycle
ECRR CONFERENCE 2008
RR READY FOR THE FUTURE?

• Design rivers for the future with respect for the past
• Multidisciplinary, adaptive approach, acceptance of non-stationary
• Public involvement, social processes and interactions important with increased scale
• Multi-criteria analysis, cost benefit analysis and economic evaluation
• Adequate (long-term) multi-level monitoring
LOST ROOM FOR RHINE AND MEUSE
FLOOD RISK MANAGEMENT RHINE RIVER
DIKE STRENGTHENING?

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RESTORING FLOODPLAINS?
TOOLBOX OF MEASURES
(green = best potential for ecological restoration)

• Inside existing floodplain
  – Riverbed deepening
  – Groin improvement
  – Creating side-channels
  – Removing obstacles
  – Strengthening of dikes (final option if no room available at reasonable costs)

• Outside existing floodplain
  – Detention areas
  – Bypasses/ ‘green rivers’
  – Widening of floodplain by replacement of dikes or depoldering

Selection of measures based on:
cost-effectiveness, contribution to spatial quality and administrative/political feasability
ROOM FOR THE RIVER PROGRAM

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PROGRAMMATIC APPROACH

Alternative measures could be developed by partners until summer 2008 within strict limits of:

• Political and Public support
• Effectiveness (safety + spatial quality)
• Within available budget or provide extra
• Completed in 2015
Crossing through ten countries and draining the territory of 19 countries, the Danube is the most international river in the world.
LOWER DANUBE FLOODPLAIN LOSS

Damming floodplain area of the Danube river

- Damming period:
  - <1960
  - 1960-1965
  - 1965-1970
  - >1970

Iron Gate I
Iron Gate II

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ECONOMICAL AND ECOLOGICAL RIVER RESTORATION

Scenarios:

I. A number of 8 polders reverted to wetlands (15.9%)

II. 8 polders reverted to wetlands and additional 12 polders used for temporary water storage at high flood events (40.8%)-(mixed use)

III. All polders reverted to permanent wetlands (100%)
MIXED USE OPTION

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BASIN APPROACH HY-MO OBJECTIVES

River and Habitat Continuity Interruption
Disconnection of Adjacent Wetlands/Floodplain
Hydrological Alterations
Future Infrastructure Projects

Data from countries with DRB catchment areas smaller than 2000 km²
(AL, CH, IT, ME, MK, PL) are not yet illustrated.
FLAG SHIP SPECIE

STURGEON
FISH MIGRATION
WETLAND RESTORATION PROJECT BULGARIA

Kalimok-Brushlen Protected site – 6 000 ha
Kalimok marsh (after restoration) ~ 1 850 ha
Kalimok and Brushlen former marshes ~ 35 000 ha
THEMATIC APPROACH
NORDIC COUNTRIES

Restoration constructed rivers

- Removing dams
- Construction fish passes
- Construction of habitat compensation
National Strategy for fish passes in Finland
URBAN STREAM RESTORATION
NATURE LIKE BY PASSES

Ecological corridors
ÓBIGO RIVER RESTORATION SPAIN
VAR RIVER RESTORATION FRANCE

2011: abaissement d’un 1er seuil

Avant abaissement
Mars 2010

Après abaissement
Novembre 2011

Observatoire du Var : Suivi de l’avancement des matériaux pour anticiper l’abaissement des seuils à l’aval
SUSTAINABLE WATER AND LAND MANAGEMENT IN IRPIN BASIN UKRAINE

ECRR

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FLOODPLAIN RESTORATION CEE
2009 EU COMMON IMPLEMENTATION STRATEGY HYDROMORPHOLOGY

- Urgent need to collate information on RR
- Develop good practices ecological effectiveness
- Develop good practice on costs/benefits
- How to include in IRBM plans
- Develop further information sharing
- Develop knowledge transfer capacities on RR
ECRR STRATEGY

• Dissemination of Ecological River Restoration Information

• Establishment of River Restoration National Centers / Networks

• 2012
  – 500 members; organisations and individuals
  – ca. 15 National Centers / Networks
  – 2 Partners INBO and WETLANDS INTERNATIONAL
ECRR VISION

• River Restoration is **eco-system based**
• **Ecological** River Restoration is an **integral** part of sustainable water management
• ECRR is **connecting people and organizations** working on river restoration (network / platform)
• ECRR supports development of **good/best practices** of river restoration
EU LIFE RESTORE PROJECT

**Rivers: Engaging, Supporting and Transferring knowledge for Restoration in Europe**

1. Support RR practices across Europe
2. Build up existing RR network capacity
3. Promote effective RR knowledge transfer
4. Establish LT RR knowledge sharing
5. Communicate and demonstrate project results
RIVER RESTORATION DRIVERS

• Traditional drivers
  – Legislation
  – Policy

• New drivers
  – Flood risk management
  – Climate change
  – Urban development
  – Tourism and recreation development
  – New technologies
MAJOR ISSUES

• Best practice (approaches) of RR
• Strategic land, land use planning and land banking
• Integrated river basin management planning
• Communication and information
• Stakeholder involvement
• Public education
RIVER RESTORATION CONTEXT

- Ecology
- Hydro-morphology
- Cultural heritage
- Socio-economy
  - Cost effectiveness
  - Ecosystem goods and services; values and payments
  - Cost / Benefit ratio
REFORM PROJECT

- FP7 Project with 27 collaborative partners
- Framework development
- Improving success of hydro-morphological measures
- Cost effective manner to reach ecological status
- Better monitoring of biological response
- Support WFD restoration programs
- Better integrate of river restoration in socio-economic programs
FORGING TARGETS AND SOLUTIONS FOR RIVERS AND WATER ECOSYSTEM RESTORATION
Develop new knowledge and know how on river hydro-morphology, river restoration and protection of water eco-systems.

Group:
- ECRR: ecological restoration
- EWA: water quality
- ONEMA: river basin management
- WI: wetland restoration
EUROPEAN TARGET 9

2012 – 2015 At least 3 river basin plans include best practice (ecological, hydro-morphological, socio-economical) river restoration measures and strategic land use and land banking plans.

2012 - 2015 Delivered X field visits, study tours, seminars and conferences for communication and information on new knowledge, know how and capacity development.
Dr Chris Baker Wetlands International

RESTORE LIFE+ Communication and information on (best practices) river restoration

RESTORE supports river restoration practices across Europe by:

• Sharing river restoration knowledge to policymakers, river basin organisation and practitioners
• Strengthening river restoration networks
• Developing knowledge transfer tools and organising knowledge exchange events
The RESTORE database of river restoration projects is currently being developed

www.restorerivers.eu
Protection and restoration of river ecosystems – the Arpa River basin, Armenia

Prepared by:
Volodya Narimanyan & Vahagn Tonoyan

Prepared for:
Interactive River Restoration Session
Specific European Region Priority Target 9

World Water Forum 6

March 15, 2012
Marseille, France
River restoration commitment

• On-going expansion of hydropower development (12 operational HPPs, 30 in the process of construction);
• Impact of climate change;
• Need to improve habitat quality, protect water quality;
• Incorporate river restoration practices in the Arpa IRBP;
• Awareness raising and capacity development for the planning and implementation of river restoration;
• Development of practical pilot projects
Rhône river basin

Dr Benoît TERRIER, Project manager in hydromorphology, Agence de l’Eau Rhône Méditerranée et Corse
A commitment to improve and take on board best practice experience

- Identified key areas of improvements
  - Strategic land and land use planning with private owners
  - Development of sustainable tourism
  - Public education: which tools to assess its efficiency?
COMMITMENTS

• **Land use initiative:** DLG in NL; Institute of Water Ukraine; Wetlands International Ukraine.

• **River restoration best practice approaches:** Wetlands International HQ; ECRR partners / RESTORE LIFE+ Project.

• **Public education GWP.**

• **Integrated River Basin Management Planning:** INBO and Wetlands International

• **Pilot river basins:** Arpa river basin Armenia; Rhone River basin France; ???????????????????????????????????????
DISSEMINATION OF INFORMATION on PROTECTION AND RESTORATION of RIVER ECO-SYSTEMS 2012 - 2015
LAND AND LAND USE PLANNING
Thank you River Restoration Centre !
THANK YOU!