



## **Transnational Cooperation on Sustainable Development of Floodplains**

**H.J. Nijland**

**ABSTRACT:** The Sustainable Development of Floodplains (SDF) project is an EU-funded, trans-national co-operation between Germany and the Netherlands that deals with flood prevention and nature development along the river Rhine

The SDF-project deals with issues in the catchment area of the River Rhine to ensure sustainable development of its flood plains. The issues addressed in this project are trans-national by nature, because sustainable flood management strategies require interregional and trans-national co-operation throughout the river basin. SDF consists of intensive transnational co-operation involving 8 partners in The Netherlands and Germany, which will increase the mutual respect and understanding, by developing measures with trans-national impacts, common issues and in trans-national teams. SDF encompasses twelve pilot projects with an operational focus. SDF partners share knowledge on project management, technical solutions and public participation processes. SDF is co-financed by the European INTERREG IIIb program which contributes to accelerated implementation of various plans on flood prevention.

**KEYWORDS:** flood prevention, nature development, public participation, communication, EU-funding, trans-national cooperation, retention, river engineering, sustainable development, multiple land use

### **Introduction**

The high water levels of the last decade at different locations along the River Rhine in Germany and The Netherlands led to drastic measures, such as evacuation of communities and construction of emergency dams and dykes. The damage caused by flooding ran to billions of dollars. In future, flooding risks are predicted to become more frequent and acute due to climate change, sea level rise and land subsidence. To take measures within the catchment area, trans-national cooperation is crucial to protect the people on the long-term.

Between 1997 and 2003, relevant authorities in France, Germany, Luxembourg, Belgium and the Netherlands carried out flood control projects and studies, funded by the Interreg Rhine Meuse Activities (IRMA) programme (INTERREG IIc). The SDF project is co-financed by the European Interreg IIIB programme of Flood prevention and Water management. The project will invest Euro 32 million in relocating dykes, creating new polder, side channels, inlets and in nature development. Through the EU co-financing various plans on flood prevention can be implemented sooner than anticipated. SDF's innovative approach will lead to better water retention by increasing the floodplain area and by taking good design solutions in floodplains.

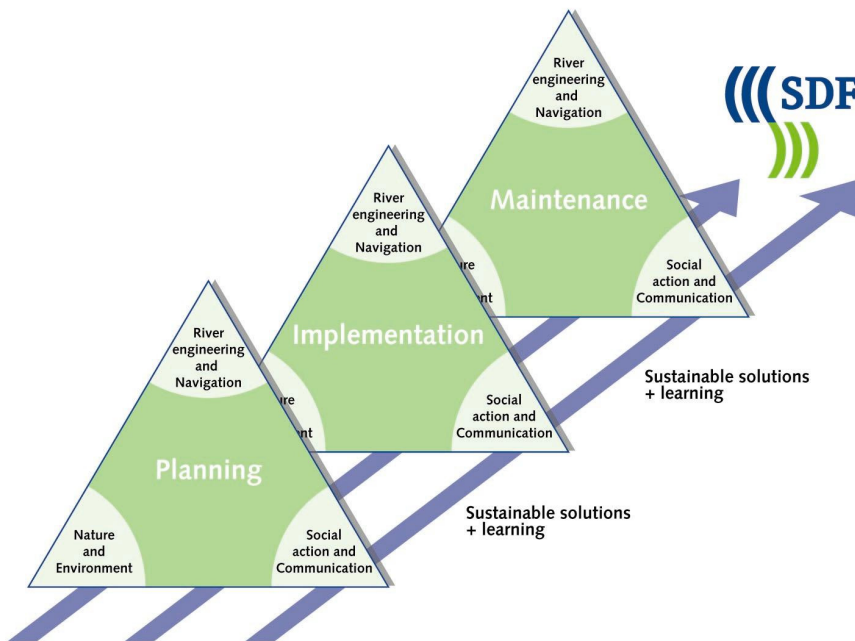
## Objectives of the project

The overall **objective** of the SDF project is to have developed floodplains for sustainable multifunctional use in and along the main river Rhine aiming at reducing high water floods. An important underlying objective is a solid operational network, exchanging/transferring knowledge and disseminating it to many other authorities responsible for similar tasks throughout Europe.

Project goals are :

- Improved river engineering and navigation by flood prevention measures and technical designs, contributing to the implementation of the transnational Rhine Action Plan.
- Improved nature and environment development e.g. creating liveable space (sustainable multi-functional land use) by elaborating the multiple land use concept into natural development strategies and into territorial planning policies.
- Enhanced social action and communication e.g. setting up a transnational co-operation network of responsible authorities (to support also other projects in the future) as well as creating a cross-sectoral network for flood management.

The logical framework of SDF is built on the view that sustainability consists of an integrated approach on the above main issues, and that it is important to pay attention to it during the different stages of a project. Sustainability will become prominent in the maintenance stage but has to be taken into account in the design during the planning stage and the implementation (Figure 1).



**Figure 1.** Logical framework of SDF

## **Innovative approach**

The innovative approaches for territorial planning especially aim at multiple land use in flood plains, public-private-partnerships for flood plain and nature development, voluntary interregional co-operation and co-operative planning approaches for retention measures and multi-stakeholder processes.

Due to the diversity of responsibilities for flood management in Europe and by a lack of co-operation in river basins on the implementing level common approaches, quick realisation and mutual understanding have been difficult up to now. Through SDF considerable progress is to be made towards a common realisation of spatially, ecologically and economically important measures for sustainable flood plains. This way of practical co-operation on concrete measures, between trans-national partners from far upstream to far downstream along a main river on concrete measures can be considered as absolutely innovative for Europe.

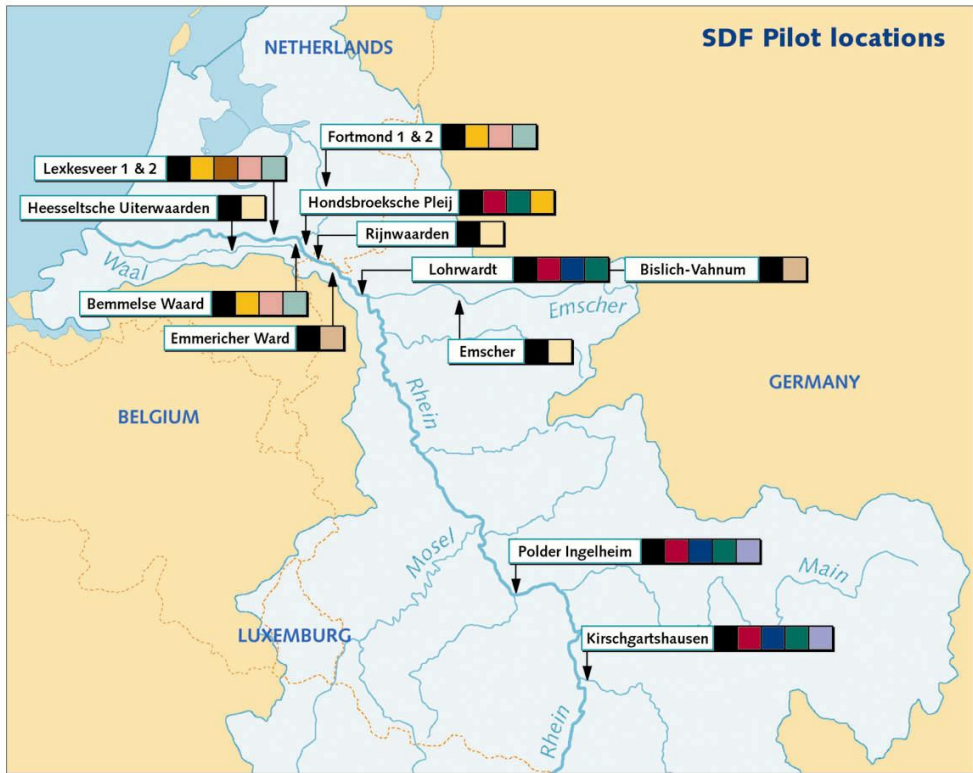
The standard measure for flood protection that pre-dominated in the past was dike heightening. After the big floods in the nineties, there was a radical break from the "higher dykes" philosophy, and a new approach was launched called "Room for the River". The SDF project is a unique opportunity to implement on a large scale this innovative approach to water retention by creating or redeveloping flood plains along the Rhine's main course.

## **Project activities**

In the Action Plan of Flood Defence of the International Commission on the Protection of the Rhine(ICPR) 54 floodplain measures in the Rhine catchment were designated along the Rhine River. In the framework of SDF 12 flood plains will be developed in a sustainable way. Between now and 2007, a retention capacity of 26,5 Million cubic metres will be created in an area of 21 square kilometres. This is one big step in order to reduce the flood levels by 70 cm in 2020.

Through the investments extended flood plains will be created providing space for rare habitats. The investments will contribute to the implementation of different trans-national strategies (e.g. ICPR Action Plan for Flood Defence, European Spatial Development Perspective (ESDP)), to reducing flood-risk in a trans-national river basin and to the creation and improvement of a border-crossing network of environmentally valuable areas along the Rhine.

SDF encompasses twelve projects with an operational focus. The measures to increase the retention volume of the flood plains and to improve the sustainable nature development in the 12 different locations are indicated in Figure 2.



## SDF Actions

- Dike relocation
- Creation of retention polders
- Construction of inlet works
- Creation of side channels
- Removal of hydraulic obstruction: ferry causeway
- Lowering of floodplain area
- Ecological flooding
- Nature development
- Environmental Impact Assessment (EIA) studies
- Feasibility studies
- Public communication

**Figure 2.** Location of the SDF pilot projects and the planned activities

## Transnational Cooperation

### The development of the project

A major condition for obtaining EU-funding through the INTERREG IIIb program is trans-national co-operation. This means that organisations working on flood protection and nature development (or other priorities and measures indicated in the INTERREG IIIb program) in the different countries in North West Europe have to co-operate with each other, not only during the preparation of a project application for the financing, but even more important is that the co-operation during the implementation of the project continues on the basis of agreed common actions in the project proposal. The overall aim of the joint effort is to secure a sustainable future for river basins.

The international contacts established during the implementation of the IRMA program proved to be very useful in the search for partner organisations. Potential partner organisations from the countries in the North West Europe (NWE) region were invited to a workshop in the Netherlands in October 2003. The main purpose of the workshop was to find partners for the preparation of project proposals eligible for funding under the INTERREG IIIb program. During this workshop the outline of several project proposals could be prepared. One of the projects was the SDF-project.

A SDF Task force, consisting of members of the partner organisations (pilot project leaders, INTERREG IIIb co-ordinators), was formed. The Task Force worked on the various sections of the project application. The Task Force was supported by a consultant familiar with preparing INTERREG IIIb project applications. The draft project application proposals were discussed with the partner organisations in plenary sessions.

An eligible SDF project application was submitted in April 2003, and conditionally approved in June 2003 by the Programme Steering Committee of the NWE INTERREG IIIb program. The final approval was received in September 2003, after clarification of some questions from the Joint Technical Secretariat(JTS) in Lille.

Already during the preparation of the SDF project proposal close relationships and good cooperation developed between the representatives of the partner organisations. The SDF project covers a period of 5,5 years, from 1 January 2003 – June 2008.

### Partners in flood protection and nature development

Three Dutch partners and five German partners implement flood prevention measures in an integrated way along the river Rhine.

- Directorate General for Public Works and Water Management- Directorate East Netherlands (RWS-DON): *Hondsbroekse Pleij, Lexkesveer, Heesseltse uiterwaarden*
- Service for Land and Water Management (DLG-Gelderland): *Bemmelse waard, Rijnwaarden*
- Service for Land and Water Management (DLG-Overijssel): *Fortmond*
- Struktur- und Genehmigungsdirektion Süd (SGD-S): *Polder Ingelheim*
- Emschergenossenschaft (EG): *Emscher*
- Deichschau Haffen-Mehr (DS HM): *Lohrwardt*
- Gewässerdirektion Nördlicher Oberrhein (GWD-NOR): *Polder Kirschgartshausen*
- Naturschutzstation Kranenburg-NABU: *Emmericher Ward, Bislich Vahnum*

## Common activities

The SDF approach is:

- To link the Actions in the 12 pilot locations. combine planning and implementation experiences;
- To exchange /transfer of know-how and experience between partners on a concrete and practical level;
- To reach common solutions for the issues addressed;
- To engage national, regional and local authorities and organisation, representatives of general public, NGO's, environmentalists and private sector at the pilot locations.

Learning from each other's experience is one major aspect of the SDF partners but it is also about the information exchange between specialists (e.g. engineers, landscape architects, biologists), the different administrative levels (national, provincial, local) and the sectors (e.g. agriculture, citizens, nature NGO's).

The partners work together on the key questions of SDF and on innovative solutions for the measures in different locations within trans-national working groups. Thus, the common approach, the common outputs and the exchange/transfer of experience within the partnership and outside of the project will be ensured.

The partner organisations plan to exchange personnel (staff, workers) when implementing the SDF project activities. Through this attachment training partners can support each other in designing, planning and implementing their own activities. The specific training issues, the attachment training programme will be determined in the working group meetings.

## Project management

The flowchart (Figure 3) shows the organisational structure of the SDF project. There are 5 key units, working closely together: the SDF-secretariat (SPS), the Trans-national Partner Group (TPG), the thematic Working Groups (WG), the Steering Group (SG).

Rijkswaterstaat-East Netherlands Directorate (RWS-DON) is the Lead Partner of the SDF project. The SDF project Secretariat is located at the headquarters of RWS-DON in Arnhem -The Netherlands. The SDF project secretariat is responsible for:

- Overall progress control of the project;
- The organisation of common (trans-national) project activities;
- Communication activities;
- The half-yearly financial and progress reporting to Joint Technical Secretariat (JTS) of the INTERREG IIIb NWE programme in Lille-France.

A contact person of each SDF project will ensure good co-operation and information exchange. Every SDF partner is responsible for the financial affairs of the implementation of their investments and actions.

The TPG has the responsibility for the decisions on co-ordination of the working groups and reaching the trans-national aims and the overall objectives of SDF.

The SG has an important role in securing commitment from each partner during the whole SDF project period. By taking up the directors of each partner the project leaders of the partners in the TPG can more easily address them on their support for SDF. The

SG has a role in helping to overcome possible problems with the progress or budgets. Co-operation in the SG will force them to think trans-national and makes it easier for them to disseminate their trans-national experiences in their own network.

The three Working Groups consists of thematic relevant representatives of the partners (working group experts) . The working group leaders have an important role in the SDF structure as they co-ordinate the generic research and are the linking pins between the working groups and the TPG. They look after a good tuning of the research done in the working groups with the overall SDF objectives and the working group objectives. They ensure the progress of these common actions. External experts can be involved in common actions of the WG's.

Other INTERREG IIIb projects and international organisations dealing with floodplain development and management are invited to relevant sessions of the working group meetings. At the a Mid-term and Final conference the results of the SDF projects will be presented to interested parties.

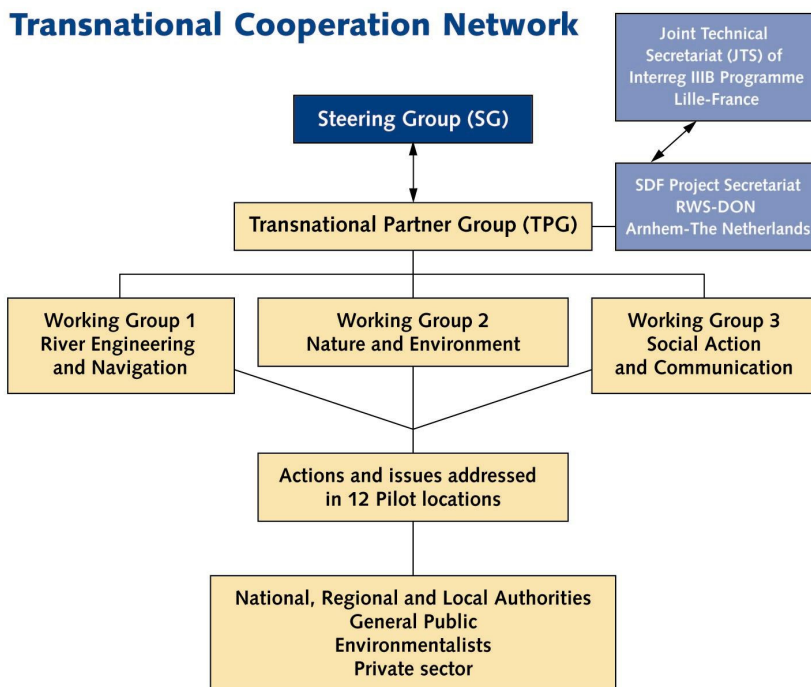


Figure 3. Project management structure

### Expected outcomes

The expected outcomes of the SDF-project are:

- Increased retention capacity by 26,5 m<sup>3</sup> in an area of 21 km<sup>2</sup>
- Increased discharge capacity;
- Better protection of the population against flooding;
- Improved Ecological Main structure;
- Improved multifunctional use of floodplains;

- Increased awareness of the inhabitants, research and administrative organisations about high water;
- Upgraded Transnational co-operation network.

SDF's experience on the realisation of sustainable floodplains will be used to improve planning, realisation and maintenance in other river basins throughout Northwest Europe. Sustainability is essential in order to fulfil the requirements of the EU directives as Birds & Habitats Directive as well as the Water Framework Directive. The social interaction of the public in the river catchment is also very important. SDF needs to rise awareness and to get support of the stakeholders for the implementation of flood risk measures in the floodplains.

A good illustration of the value added of trans-national cooperation is the following example.

The Hondsbroeksche Pleij project is located near Arnhem at the point where the river IJssel branches from the Lower Rhine. During high flood the dikes along the IJssel are a bottleneck for the fast discharge of the river. A new dyke will be constructed further inland to create more room for the river. The high-water channel between the old dyke, part of which will be maintained), and the new dyke will discharge more water into the IJssel. That is because a control system (inlet work) is planned in the high-water channel to regulate how much extra water enters the IJssel. Basically, it is a valve that will regulate the flow between the various branches of the Rhine, and means it is an essential link in the chain that protects us against flooding.

In the polder Ingelheim, located near Mainz, the German authorities have already finished their blueprints for the inlet works and will start construction soon. The Hondsbroekse pleij can make use of their practical knowledge as they work on their detailed plans. On top of that by comparing notes when it comes to EU legislation, environmental impact assessments, communication and procurement procedures, extra advantage is gained when the procedures for Hondsbroeksche Pleij are started and the actual construction work can begin.

The results will be disseminated through a network of observers which is expanding as the project makes progress. By demonstrating the added-value floodplains in flood defence, the SDF project hopes to trigger further funding in floodplains development and influence future strategies in the long term.

### **Activities and outcomes to date**

Since the project was launched in September 2003, the Trans National Partner Group and the Steering Group had their first meetings and three working groups have been formed around the project's main goals: river engineering, nature and environmental development, social action and communication. Each working group brings its expertise and added value to the different flood plain projects. Environmental impact assessments (EIA), planning permissions and surveys of public opinion have been carried out in most of the selected locations. This includes in-depth studies to assess the impact of the floodplains on groundwater levels as well as other interactions on soil mechanic and sedimentation.

In the Emscher location, initial studies demonstrated the need to enlarge the water retention capacity of the floodplain area to 1.5 million m<sup>3</sup>. Furthermore groundwater studies revealed that the subsoil is heavily affected by past mining activities and could impact negatively on a new drainage system. These factors will delay the site's implementation schedule.



In other locations implementation is more advanced: some, like Polder Ingelheim, are in a position to launch construction works whilst others have established a first design layout and are currently launching call for tenders to select job contractors.

## Conclusions

Transnational cooperation can be more effective if the projects are prepared jointly on issues of common interest, not only for study and planning but also for the implementation of already planned projects.

Confrontation in practice with the different approach of organisations to issues of common interest, like flood prevention and nature development, in the different countries not only leads to a better understanding, but can also will lead to improve implementation and planning practices and more cost effective projects in each of the countries.

An open exchange on positive and negative experiences with the implementation of projects is a pre-requisite to come to good results. In this way one can learn the most of each other.

The meetings which have been held so far prove that there is really a synergy between the pilot project activities of the different organisation.

Trans-national cooperation requires extra input of manpower which is not always recognized by the organisations involved. Therefore a steering group has an important role.

The co-operation not only learns the partners in the different countries new things, but it also helps everyone to think in new ways. The project leaders are more or less forced to look at their own project from a new perspective, so they start notice different things and learn to see the European dimension of their own local project.

## References

1. Sustainable development of Floodplains: Interreg IIIB NWE project application, project C063. *Rijkswaterstaat, 2003*
2. EU grant for sustainable river enlargement. *Reprint from Rivieren Magazine Nummer 10, najaar 2003*

## Author:

H.J. Nijland, Directorate General for Public Works and Water Management, Directorate East Netherlands, P.O.Box 9070, 6800 ED Arnhem, The Netherlands. E-mail: h.j.nijland@don.rws.minvenw.nl