Scaldit

Water management issues

Significant water management issues of general interest in the international Scheldt river basin district

Commission Internationale de l'Escaut
Internationale Scheldecommissie

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Contents

Preamble

In early 2003, the riparian states and regions of the Scheldt have put the Scheldt river basin district forward as pilot river basin within the framework of the European 'Pilot river basin exercise'. This was the start of the Scaldit project. The main aims of this project are testing the guidance documents drawn up by the European Commission in consultation with the member states to support the implementation of the Water Framework Directive, drawing-up a trans-national characterization of the Scheldt river basin district, researching flood risks and the links between water management and spatial planning, and making the first steps towards the international river basin management plan for the Scheldt. The first three objectives have been reached over the past years, and the last objective is now being shaped in the present brochure.
Initially, the Scaldit project, which was launched on 1 January 2003, would have been completed on 31 December 2005. It has been extended to 31 December 2006. The project can count on the financial support of Interreg IIIB NWE, the European financing programme for trans-national cooperation.

The project gave a major impulse to the cooperation between the different riparian states and regions within the International Scheldt Commission. Last year, all project partners joined forces in order to establish the significant water management issues for the international river basin district of the Scheldt, as a first step towards the river basin management plan. The result is summarized in this brochure. This brochure also represents the starting signal to tackle these water management issues. Clear challenges are formulated, requiring coordination at an international level in order to achieve the environmental objectives of the Water Framework Directive. These water management issues will form the basis for the river basin management plan for the Scheldt international river basin district.

As an introduction to the water management issues, we go into the details of the International Scheldt Commission. This international river commission takes care of the coordination of the integrated water management in the Scheldt district. It will tackle the water management issues over the coming years.

The work performed within the framework of the trans-national characterization, which resulted in the publication of the Scaldit report in 2005, was an essential starting point for identifying these water management issues that are important in the whole river basin district. Therefore, I would like to thank the Scaldit colleagues, the International Scheldt Commission and Interreg IIIB NWE for their efforts and for their support in this project. I am convinced that this cooperation has laid the foundations for further trans-national cooperation. This brochure is the obvious result of all this work.

Frank Van Sevencoten
Project manager
Administrator general VMM

The International Scheldt Commission (ISC)

Launched in the spirit of good neighbourliness

In 1994, the governments of the French Republic, the Walloon Region, the Flemish Region, the Brussels Capital Region and the Kingdom of the Netherlands signed the *Treaty of Charleville-Mézières*. In a spirit of good neighbourliness, the parties to the treaty wanted to work together in order to protect and improve the quality of the Scheldt. In order to develop this international cooperation, the treaty provided for the setting up of the International Commission for the Protection of the Scheldt (ICPS). Under the Flemish presidency of Mr. Frank Van Sevencoten, administrator-general of the Vlaamse Milieumaatschappij, the commission started its activities on 11 May 1995.

Three years later, on 10 December 1998, at the first ministerial conference in Middelburg, the Scheldt Ministers launched the *Scheldt Action Programme* (SAP). This action programme is based on the report on the quality of the Scheldt in 1994 (published in 1997), describing the quality of the Scheldt and the overall waste load. In the future, this will be the reference year for the assessment of the Scheldt quality. In early 1998, the *homogeneous monitoring network* for the Scheldt was also launched. Since then, 38 parameters of the Scheldt water are checked on 14 sampling points. The purpose of the monitoring network is assessing the effects of the SAP, and adjusting the programme if required. In 1999, the *Warning and Alarm System for the Scheldt* (WASS) against accidental pollutions was launched.

The European Water Framework Directive

On 22 December 2000, the *European Water Framework Directive* (WFD) was published. This framework directive (2000/60/EC) was a new milestone in the integrated water policy. By 2015, groundwater and water from rivers, lakes and canals, as well as coastal and transitional waters must have evolved towards a good status. On the same day the framework directive was published, the commission drew up an action plan at its plenary meeting in Tournai, aimed at adapting its activities.
The ministerial declaration of Liège on 30 November 2001 determined the direction in which the cooperation within the commission would evolve to in order to comply with the framework directive. In Liège, it was also decided to draw up a new treaty for this new cooperation. The outlines of the ministerial declaration of Liège are the following:

- establishing the international river basin district of the Scheldt;
- adherence of the Belgian federal state to the treaty;
- drawing-up, by 2009, of a single international river basin management plan for the Scheldt, to be coordinated by the commission;
- carrying out multilateral consultations, within the ICPS, in order to draw up measures aimed at reducing the effects of floods and periods of drought.

The Treaty of Ghent

One year later, on 3 December 2002, the new Scheldt Treaty was signed in Ghent. This new treaty was adapted along the outlines of the ministerial declaration of Liège, in order to implement the obligation for multilateral coordination in international river basin districts, as established in the WFD. The Belgian Kingdom signed this treaty and became the sixth party to the treaty. The reason for this is that the Belgian coastal waters are part of the Scheldt district and Belgian federal government has jurisdiction over these coastal waters.

The new Scheldt Treaty provided for a new name for the commission: *International Scheldt Commission (ISC)*.

Scaldit

On 1 January 2003, the Interreg IIIB NWE project Scaldit was launched within the ISC. Initially, the project was supposed to run until the end of 2005, but this was extended to end 2006. The term Scaldit is made up of Scaldis – the Latin word for Scheldt – and Integrated Testing. With this project, the Scaldit partners, who are also parties to the Treaty in the ISC, made the commitment to lay the foundations for the development of an integrated water management within the international Scheldt river basin district. Therefore, they investigated the feasibility of the guidance documents provided by the European Union within the framework of the Common Implementation Strategy, they drew up a trans-national characterization of the district pursuant to the WFD, they examined the flood risks in the district and the links between the water management policies and spatial planning policies, and they set the first steps in preparation of the international river basin management plan for the Scheldt. The Scaldit partners decided to anchor the project within the ISC and to implement the project within the structures and according to the procedures of the ISC. Most actions are important for the implementation of the Water Framework Directive within the whole river basin district. Eventually, the experience gained will benefit all international river basin districts in the European Union and the Candidate Member-States.
The action programme of Scaldit is structured around 5 themes:

- Characterization of the river basin district;
- Data and information management;
- Water management and spatial planning;
- Communication and public participation;
- Up to the international river basin management plan.

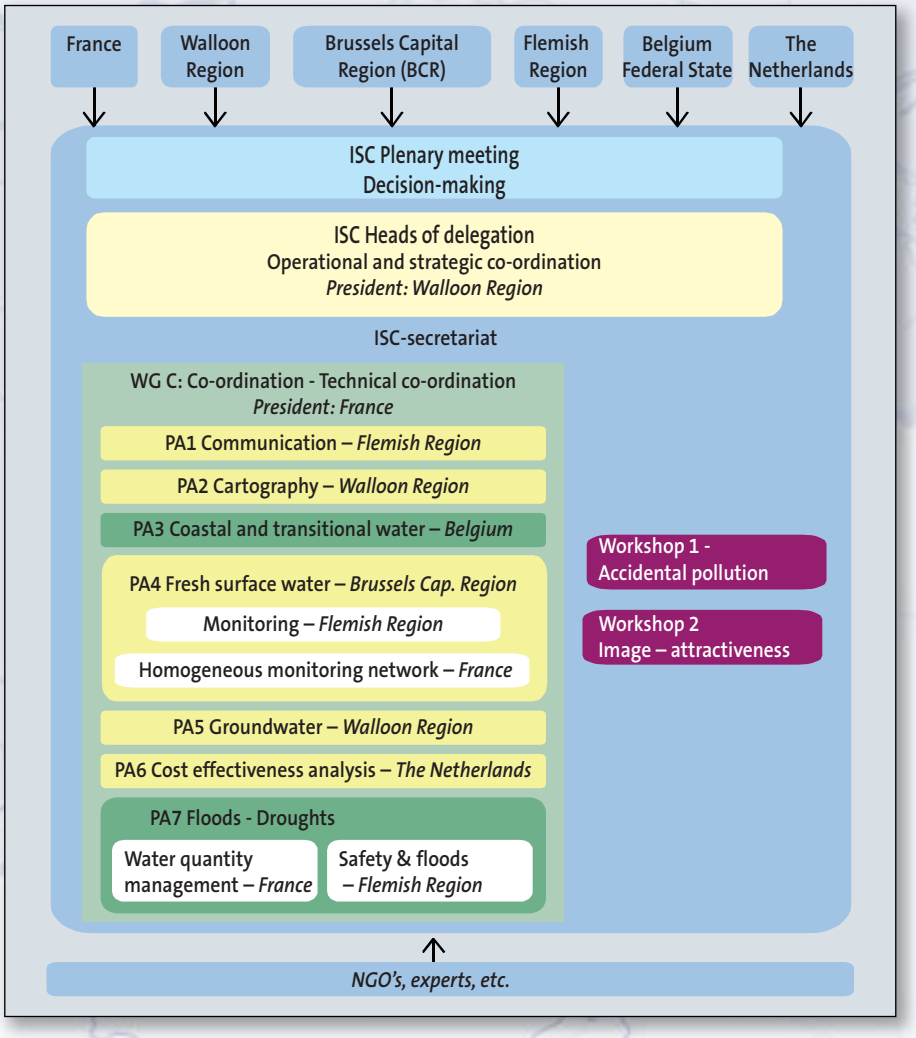
The project also receives financial support from the regional development programme Interreg IIIB North-West Europe.

Tasks and objectives of the International Scheldt Commission

The multilateral coordination, as imposed by the WFD for international river basin districts, is the main objective of the ISC. Therefore, this international river commission aims at efficient cooperation between the riparian states and regions of the Scheldt in order to achieve a sustainable and integrated water management of the international river basin district of the Scheldt.
It wants to achieve this objective:

- by coordinating the individual implementation of the European Water Framework Directive by the riparian states and regions;
- by drawing up a single management plan for the international river basin district of the Scheldt, pursuant to the Water Framework Directive;
- through consultation on the preventive and protective measures against flood and drought;
- by coordinating the measures aimed at preventing and fighting accidental water pollution;
- by encouraging scientific research and cooperating with other international organizations;
- by drawing up an annual report.

In its current form (see organization chart), the commission counts a single coordinating working group. Seven subjects are delineated and assigned to seven project groups. In addition, 2 workshops are defined, which tackle specific themes, such as image attractiveness and accidental pollution.



Presidents of the International Scheldt Commission

1995 – 1998	Flemish Region	Mr Frank Van Sevencoten	Administrator general VMM
1999 – 2000	Netherlands	Mr John Lilipaly	Chairman Nationaal Park Oosterschelde
2001 – 2002	Brussels Capital Region	Mr Alain Lefebvre	Inspector general BUV
2003 – 2004	France	Mrs Annick Delelis	Professor at the Université de Lille 2, Law and Health
2005 – 2006	Walloon Region	Mr Damien Yzerbyt	Deputy Mayor and Councillor in Mouscron and Member of the Walloon Parliament

Secretary-General: Arnould Lefébure
Executive Secretary: Michel Bruyneel

Scheldt IRBD: Main watercourses

Projected coordinate reference system : ETRS89-LCC

Significant water management issues of general interest in the international Scheldt river basin district

Introduction

Hereinafter, the International Scheldt Commission (ISC) presents an overview of the significant water management issues of general interest at the level of the international river basin district (IRBD) of the Scheldt.

Resulting from the roof report published in March 2005, they form the basis for the development of the management plan of the Scheldt IRBD as provided for by the Water Framework Directive (WFD).

The states and regions are responsible for the implementation of the WFD. However, the WFD requires the Member States of the international districts to coordinate the management plan and the programmes of measures established by each of the parties.
The Scheldt IRBD, which covers part of France, Belgium (Walloon Region, Brussels Capital Region and Flemish Region) and the Netherlands, is used intensively by man. The population density is the highest in Europe, with an average of 352 inhabitants/km². The inhabitants produce waste water that is still (too) often discharged without treatment, thus representing a major source of pollution.

Agricultural activities are also very intensive all over the Scheldt IRBD. No less than 60% of the area is used for agricultural purposes, whereby crops are dominant in the south, resulting in the use of fertilizers and pesticides. In the north, agriculture is mainly centred on livestock farming. Moreover, livestock farming is usually not linked with the soil, which results in manure surplus. These agricultural activities cause an inflow of nutrients and pesticides in surface waters and groundwater in a diffuse manner.
Industry has been present for more than two centuries in the district. Industrial estates are mainly located in harbours, along canals and around cities. Even though major investments have been made over the past few years in the treatment of industrial waste water, important (residual) industrial waste loads are still discharged directly into watercourses.

Transport too is responsible for different types of pollution that need further analysis.

Finally, atmospheric emissions of all activities, i.e. agriculture, industry, households and transport, also represent a significant source of water pollution in the form of wet and dry precipitation (rain and dust).

Even though the above activities are present in the district as a whole, the nature of the load or pressure on the water system differs between regions.

Given the investments that are ongoing or planned by the different parties and the probable evolution of current water usage, we can expect an improvement of the water quality over the coming years as a result of the increasing treatment of domestic waste water, of the gradual reduction of industrial discharge and diffuse pollution.

However, even if the planned efforts are materialized, most of the investigated trans-boundary or similar surface waters and groundwater layers are at risk of not achieving the WFD objectives by 2015.

If we want to achieve the WFD objectives, all competent authorities of the Scheldt IRBD will have to refine and complement the current programmes of measures, focusing in particular on the reduction of diffuse sources.
In any event, the sharing of information and common reflections between the different parties to the IRBD result in a more coherent approach, greater efficiency and less costly programmes of measures.

1 Surface water quality, hydro-morphological alterations and sediments

1.1 Insufficient surface water quality

The biological quality of surface waters must be investigated further according to the WFD methods

Because of numerous point-source and diffuse discharges, be it from households, agriculture or industry, international, national and regional reports indicate that, overall, the physico-chemical and biological water quality in the Scheldt IRBD is insufficient. The bad physico-chemical surface water quality concerns oxygenation conditions, nutrient conditions, as well as the concentration of other substances (metals and other micro-pollutants, PAH, PCB, pesticides).
The biological quality requires further investigation, taking into account the methods prescribed by the WFD. Initial results are not very encouraging either.

1.2 Major hydro-morphological alterations

The Scheldt is a lowland river with a small flow rate. Originally, it meandered over large flood plains. Its highly dynamic estuary, with numerous sandbanks, was prone to intense exchanges between the terrestrial and aquatic environments. Over the years, demographic expansion and industrial development have gradually introduced numerous hydro-morphological alterations in the water system of the whole Scheldt IRBD. Dykes were built, watercourses were straightened and canalized to improve flood protection and navigation.

The improvement of the hydro-morphological characteristics represents an additional challenge for the improvement of the ecological status of our watercourses

These modifications have changed the natural characteristics of some watercourses rather considerably. They form a pressure on the ecological working of the water system, generate a loss of biodiversity and reduce the reproduction and migration possibilities of fish.

The WFD admits that these changes can be necessary for activities of sustainable human development and provides for an adapted objective for these heavily modified or artificial water bodies: the Good Ecological Potential (GEP).

The coherence between aquatic ecosystems within the IRBD, including the preservation of wetlands, is part of the ecological challenges at Scheldt district level.

In the coming years, the quality of sediments and the possibility for decontamination require further investigation

More than half the water bodies within the Scheldt IRBD are provisionally designated as heavily modified (where the natural watercourse has been changed) or artificial (entirely man-made). They are therefore the subject of close scrutiny for the implementation of the WFD in the Scheldt IRBD.

1.3 Excess sediment and insufficient sediment quality

In many places, the sediment quality is insufficient. Contaminated silt is not only the result of industrial pollution, but also of household and agricultural discharge.

Soil erosion in the district results in an increased amount of sediments in the watercourses.

Silt accumulates on the bottom of canals and watercourses, slowing down water drainage and making navigation difficult. Moreover, this can harm the good ecological working of the water system. In such cases, specific intervention can be necessary.

The low quality of sediments has an adverse impact on the water quality.

Removal of the silt can prevent accumulation of pollutants in vegetation and fauna, which could otherwise disturb the working of the ecosystem.

A more in-depth study of the quality of sediments and the long-term decontamination of sediments in order to improve the situation, taking into account the costs involved, represents one of the major challenges for the coming years. This is also closely related to the fight against erosion.

2 Groundwater vulnerability

2.1 Groundwater quality

Also given the uncertain impact of current and future pressures, most groundwater bodies in the Scheldt IRBD have been qualified as “at risk”, especially the water bodies located closest to the surface, where the interaction with surface water and the associated terrestrial ecosystems often play a part.

Most groundwater bodies have been classed as “at risk” because of the presence of nitrates, and to a lesser extent pesticides. The Member States are expected to set threshold values per water body for the other pollutants. These threshold values will mainly depend on the nature of the aquifers (natural concentrations, weakening of the pollutants).

The good chemical quality of groundwater as source for the production of drinking water is simple to define. On the other hand, more in-depth studies are necessary to define the good chemical status of those aquifers that have an impact on surface waters and the associated terrestrial ecosystems.

2.2 Good quantitative status of groundwater

Regarding the good quantitative status, uncertainties still persist for some groundwater bodies regarding the recharging of the groundwater reserves, mainly via the groundwater bodies close to the surface.

In particular, some groundwater bodies lower down, such as the aquifers in the calcareous carboniferous strata, were qualified as "at risk" because of excessive abstraction.

Groundwater requires better protection not only to prevent pollution, but also to protect reserves in the long run

For these water bodies, the challenges are obviously dependent on the end-use of water, which can vary according to parties and sectors (drinking water, industrial water, guarantees for the preservation of sufficient flow rates in watercourses).

Groundwater protection requires a reinforced approach, not only to prevent pollution, but also for the long-term protection of water reserves, as provided for by the directive, with a very special focus on groundwater bodies used for drinking water supply.

The trans-boundary aquifers require specific coordination to make sure that a good chemical and quantitative status is achieved.

3 Scheldt-specific pollutants

The roof report of the district mentions a number of pollutants and parameters that could prevent some water bodies from achieving good status, be it on district level or on regional level: nutrients, copper, cadmium, mercury, lead, zinc, polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organotin compounds, and lindane.

The different regions and states will cooperate to reduce the discharge of Scheldt-specific pollutants

This concerns both physico-chemical elements, which support the biological elements as part of the ecological status, and so-called hazardous or priority substances taken into account in the chemical status, as provided for by the WFD. These priority substances, whose emissions must be reduced or stopped altogether, must be the subject of a European daughter-directive establishing their standards.

The physico-chemical elements that support the biological elements consist, on the one hand, of a number of general parameters, such as thermal conditions, oxygenation conditions, salinity, acidification status and nutrient conditions, and on the other hand, of several specific pollutants.

If, in the list of substances identified in the roof report, the general physico-chemical parameters and the priority substances are left out of consideration, Cu, Zn and PCBs are defined as Scheldt-specific pollutants.

The parties involved want to cooperate in a concerted manner in following-up these substances and implementing suitable measures to reduce the discharge of these Scheldt-specific pollutants with a view to achieving the good status.

In addition to these Scheldt-specific pollutants, a number of other substances and parameters can also have a major trans-boundary impact on a local level. These pollutants or parameters can be investigated bi-, tri- or multilaterally.

Some of these physico-chemical elements and priority substances are already being followed-up by the homogeneous monitoring network of the Scheldt.

On a regular basis, as the works progress, this list of Scheldt-specific pollutants and the homogeneous monitoring network will be reassessed on the basis of the coordination of the different monitoring programmes.

4 Economic analysis

The roof report gives an insight into the main economic characteristics of the regions within the district and into the significance of water as a production factor (drinking water, industry, agriculture) or in a supporting role for activities (transport, tourism, leisure).

The parties will exchange information to draw up cost-effective programmes of measures

Given the rather large differences in wealth between the district regions and the varying economic structure, the economic indicators identified in the analysis require further follow-up and refining, making sure that they are linked with the pressure indicators, in order to enable the competent authorities to draw up programmes of measures on the basis of a coordinated cost/effectiveness approach.

Finally, a major challenge for all parties involved consists in obtaining a reasonable contribution on the part of the different sectors of water users in order to recover the costs of the water services.

5 Flood and drought prevention management

Overall, according to the WFD, the measures must contribute towards reducing the effects of floods and droughts, but the WFD does not provide for (concrete) objectives in this respect in the management plan. However, the parties have to cope more and more often with floods and periods of drought. Therefore, on the basis of the European Strategy on floods, the parties are willing to cooperate and further coordinate their approaches.

Good quantitative water management will enhance the recovery of ecosystems and will reduce economic damage as a result of floods and droughts

Good quantitative water management can contribute significantly towards the restoration of ecosystems.

But quantitative water management has more than an ecological dimension, it also has an important economic dimension.

Through consultation, while preserving the resource, the parties want to aim at a balanced situation, general satisfaction, all year round, in matters of quantitative water management between the stakeholders and beneficiaries.

6 Governance

Within its own territory, each state and region is responsible for the implementation of the WFD. However, the different states or regions within the Scheldt IRBD must also provide coordination at this level.

This voluntary coordination was formalized within the Scheldt district in 1994 with the Treaty of Charleville-Mézières, and was confirmed by the Treaty of Ghent on 3/12/2002, designating the ISC as international coordination platform for the implementation of the WFD.

The different regions and states will cooperate in order to contribute to a sustainable development of the Scheldt district

This coordination gives an insight into each others procedures, results in the exchange of information and verification of their comparability, and makes it possible to compare assessment methods and results. In the first phase of the framework directive, it resulted in the publication of a roof report.

The intention is to cooperate in order to contribute towards the sustainable development and, in each state or region individually, to take the necessary measures for an integrated management of the Scheldt IRBD, taking into account the multi-functionality of the Scheldt.

7 Data, measuring methods and assessment methodologies

International coordination has demonstrated that the data are relatively heterogeneous between the different parties and that data are missing in some sectors (agriculture, atmospheric deposit, discharge of transport and leisure activities, etc.). Because of the different methodological approaches of the parties, the data acquisition and analysis protocols applied by each party since many years differ considerably from one country or region to another. Harmonization is certainly not an objective in itself. These differences generate fruitful exchanges between parties, but they make coordination more difficult.

By improving the comparability of measuring and assessment methods, information exchange will be much smoother

That is why one of the fundamental objectives is to improve the mutual comparability of measuring and assessment methods in order to achieve good coordination and enhance a good mutual understanding of the exc hanged information.

As a result, the trans-boundary coordination of environmental objectives represents a major challenge.

The above description gives the outline of the major issues that require coordination at an international level, i.e. at Scheldt district level in order to achieve the environmental objectives of the Water Framework Directive.

Publications

Presentation brochure Scaldit
Scaldit, a project within the ISC, supported by Interreg IIIB NWE: 2003-2005- an international action programme for a cleaner and safer river basin district of the Scheldt

Newsletters - Scaldixit (Dutch/French only)

Scaldit Report
Trans-national analysis of the state of the aquatic environment of the international Scheldt river basin district: pilot project for testing the European guidance documents

Scaldit Roof Report

Scaldit Project Spatial Planning
Flood Risk and Spatial Planning in the Scheldt International River Basin District
Report only in Dutch and French
Brochure and cd-rom available in English

Extra copies of these publications can be obtained from the Scaldit communication responsible

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