

Transboundary Ecosystem Services identification and assessment : Preliminary results of field studies on the Scheldt (France, Belgium, The Netherlands)

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Research project Riparia stresses the importance of riparian areas, which are transitional semi terrestrial areas that are regularly influenced by fresh water, extending from the edges of water bodies to the edges of upland communities (Naiman et al., 2005). Riparian areas can contribute to cooperation between countries in the management of natural resources and ecosystems. Research project Riparia includes the river Scheldt, which has its source in the north of France and runs through western Belgium and the south-western part of the Netherlands towards the North Sea. Hence, the river Scheldt can be called a transboundary river (Muelig, 2012).

For France, the main important concerns regarding the Scheldt river basin include water quality, groundwater resources and economic development of the region. The interests of the Flemish are the water availability and water quality, the ecological development of the water system and the accessibility of Antwerp harbour. For the Netherlands it is important to keep the unique character of the estuary of the Scheldt, e.g. improvement of water quality, bird-breeding sites, sediment quality and keeping the water gradient. Recreation is also of interest. Therefore, policy of safety against flooding and calamities from ships with dangerous loads is important. Further interests include industry and keeping Rotterdam's position as international harbour (Ruijgh-van der Ploeg and Verhallen, 2002).

River Scheldt complexity and regime

The Scheldt is 355 km from St Quentin (F) to Flushing (NL), out of which the 160 km from Ghent are the tidal Scheldt. A rainfed river, extremes are large, necessitating a lot of diversion works to level flood peaks yet guarantee minimum flow for shipping. Some 60% is diverted before Ghent, most of it to the Ghent-Terneuzen channel.

The area from Ghent to around Antwerp is densely populated and industrialised, much of it also canalised. The Dutch part is much quieter, with tidal flats and saltmarshes creating a varied ecosystem. The highly complex morphology of the estuary means interventions have large and unpredictable effects

Relations on the river Scheldt focus especially on the tidal area (estuary). Belgium and the Netherlands have had a troublesome history over the shared estuary of the river Scheldt, ably described in Meijerink (1999). While navigation was the main bone of contention for centuries, the negotiation arena was widened and 'greened' with the launching of Belgian project and the downstream Netherlands resorting to linkage politics - river deepening, water quality, water allocation. Scheldt water is not treated in Belgium and the Scheldt has oscillated between hypoxia and anoxia.

The agreement first reached would put all costs and nuisance on Wallonia, where storage reservoirs were to be built. In 1993 an agreement was reached on the whole package and water quality started to improve.

The highly complex morphology of the estuary means interventions have large and unpredictable effects, inciting environmental conservationist NGOs to resist channel deepening interventions.

From 1998 on, joint efforts, both NGO and governmental, to arrive at a joint vision led to a Dutch-Belgian covenant in 2005, with plans to strengthen ecological connections between the Netherlands and Belgium, and make space for the river by depoldering as compensation for environmental damage of deepening the fareway in a site of special scenic interest (SSSI). Local Dutch (citizen and agricultural) protest, incited by the trauma of flooding in 1953, was successfully upscaled led to diplomatic incidents between the Netherlands and Flanders recently. The decentralisation of the Belgian state has given prominence and authority to regions.

This is relevant as there is a lot of practical day-to-day cooperation between the bordering regions. Now that the dispute over inundating the neighbouring Hedwige polder has for the moment been settled, the political space may open up for cooperation on ecological services.

Along the Scheldt River the research project Riparia has appointed several hotspot areas that are of environmental importance Het Verdrongen Land van Saeftinghe, the Condé-Pommeroeul canal and the Chabaud Latour site.

Saeftinghe is pronounced as a nature reserve area and includes transboundary ecosystem services. Managing these services is complex, various stakeholders play a role which makes decision making challenging. Decision making involves political, social, environmental and economic drivers which gives this case a certain complexity.

The two other case studies concern transboundary riparian services between Belgium and France. In this case, we are interested in transboundary river management. A focus on a section of the Scheldt River that runs in France and whose pollution policies may affect the Belgium part of the River has been chosen. Indeed, when national policy implement more environmental protection, then, the benefits drawn from this policy may spread far beyond the targeted area. Hence, in our approach, focusing on such a section of the River may allow to consider situations where downstream countries benefit from another's efforts to protect the environment; and hence, might think interesting to foster cooperation between the two (or more, here three with the Netherlands) countries.

Methodology

We aim at comparing the way ES are identified and represented in our two cases. In France, The focus will be more related to pollution from the industrial past of the northern region and its flow downstream (Condé-Pommeroeul canal). But not only, since this research project concentrates on ecosystem services, a focus point could relate to transport issues in northern Europe (multimodal transport systems using water ways), or recreational activities for local populations and tourism (as an entry point for civil society involvement in local environmental issues related to the River Scheldt) (Chabaud-Latour site).

The first step is to identify and represent ES. Firstly a literature review will be done about the question of identification and evaluation (Leslie and al. 2012). Secondly we will discuss the possibility to assess ES through quantification rather than evaluation.

We then aim at building a methodology which considers a stakeholders perspective rather than a service and utility centered point of view.

Our data will come from interviews with involved parties on the questions which ecosystem services the area delivers and which are considered to be of vital importance. These will be mapped using GIS, providing an overview of the various points of views, and showing the various stakeholders and interests. We will then compare the different values or assessment principles engaged about ES.