

CASE STUDY - SEINE, FRANCE

LOW FLOOD RISK PERCEPTION

*With reference to the Room for the River conference with the keynote speech given by: Regis Thépot**

■ The last major flood in Paris dates back to 1910. Parisians rarely give any thought to the possibility of the Seine flooding again. This limited perception of potential risk considerably hampers the work of the Seine Grands Lacs Institution. This Institution wants to create a large overflow basin upstream from Paris, but is facing difficulties in accomplishing this as there is little support for its financing or development. Negative information regarding the threat of flooding has been ineffective. Seine Grands Lacs wants to try a new approach, with a global and positive message.

Geographical Context

■ The Seine is a river in the northern part of France with its source in the Langres Plateau. It flows through the capital city of Paris, with an average discharge of 330 m³/s at this level. The river is almost entirely navigable by ship, and is one of the most important shipping routes in France, as half of French inland navigation, a low traffic compared to Netherlands, takes place on the Seine.

The Upper Seine flows east of Paris and has three large tributaries: The Marne, the Aube, and the Yonne. Heavy rainfall can cause the tributaries, especially the Yonne, to rise quickly. If heavy discharges from the tributaries coincide, this can quickly lead to peak discharge on the Seine. On the other hand, the water levels in the Upper Seine can be extremely low during summer and autumn months. Four large reservoirs were built from the 1950s to '90s. The upstream reservoirs have two purposes. By collecting peak discharge, downstream flooding can be avoided. Their second function is to allow additional river water through when necessary, so that the freshwater supply for Paris remains adequate. In dry periods, the volume of water in the Seine obtained from the reservoirs can increase to 50%.

Flood History and Risk Perception

The last great flooding of the Seine took place in

January 1910, and large parts of Paris were submerged. Fueled by heavy rain in the upstream area of the Seine, water levels in the Seine in Paris rose to more than seven meters above normal. The most recent high water measurement was recorded in 2003, but it did not come to flooding at that time. However, 100,000 works of art were removed from the basements of the Musée d'Orsay as a precautionary measure. Various studies indicate that Paris is at risk of flooding. In the worst case, flood damage could cost 40 billion Euros, and more than 2,000,000 people could lose electrical power. These warnings have been mostly ignored by Parisians. The last great flood took place over 100 years ago, and in the years since, the perception of flood risk has increasingly diminished in the French capital.

Jurisdictional Responsibility

The institution responsible for flood protection along the Seine is the l'Etablissement public territorial de bassin (EPTB) Seine Grands Lacs. This regional partnership was established in 1969 by four departments including Paris, Hauts-de-Seine, Seine-Saint-Denis and Val-de-Marne – and it covers the entire watershed of the Upper Seine. The name refers to the four large reservoirs that were built from the 1950s to the 90s. Its two main tasks consist of securing the water supply for Paris conurbation and minimizing flood risk. They also improve water

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The Seine River in Paris (source: Cyberslayer, www.flickr.com)

quality and facilitate inland shipping.

In 2003, France created a legal framework for the establishments of these EPTBs for certain sub-catchment areas. Water management, with primary responsibility for the large French catchment areas, lies with six Agences de l'eau (water agencies) with the Seine, Loire, Rhone and Garonne as largest. These governmental agencies have always been primarily focused on water quality and the financing of communal water purification installations. The agencies themselves cannot directly implement river projects, but must rely on local governments: 26 regions, 102 departments, and 36,000 municipalities. The newly established EPTBs are a link between water management organizations and local governments, for the purpose of reaching consensus regarding the implementation and financing of river projects.

Construction Overflow Basin La Bassée

By far the largest project managed by EPTB Seine Grands Lacs is the construction of a 2,300 hectare water overflow basin at the point where the Seine and Yonne meet. The most recent design consists of ten

compartments with the potential of storing 55 million cubic meters of water. The costs are estimated at 500 million Euros, and a pilot work is expected to be completed in 2020. The construction of the overflow basin La Bassée is a long-standing idea that EPTB Seine Grands Lacs has placed high on the agenda once again as a result of the implementation of the European Flood Directive. The basin will be able to collect peak discharge, which will greatly limit flood risk for Paris. The construction of the basin is an extremely complex civil engineering project. There is no variation in altitude in the planned area, so that the compartments must be dammed, and pumps will be required to pump water from the Seine into the compartments.

National Debate

The French law mandates a preliminary national debate for every large infrastructure project. An independent institution established for that particular purpose is required to organize the debate. The debate regarding the La Bassée project took place in 2011. In local communities, hearings were held and the project

was discussed with landowners and other local invested parties. Many questions were asked about the hydraulic parameters of the compartments and the establishment of pumps. An additional hearing was organized in order to address this specific aspect with the help of hydrologists.

The national debate illustrated the difficulty of discussing hydrological details with laymen. In addition, it became clear that threatening language regarding the possibility of flooding was ineffective, especially when the matter at hand concerns the reconstruction of a certain area for the purpose of safety downstream.

Enjoying the River

Discussions regarding the overflow basin La Bassée have resulted in new relationships between local stakeholders, whereby not the threat, but new opportunities are central. Insights incurred through the European collaborative venture Freude am Fluss and “Room for the River program”. By focusing on the positive experiences people can have with the river, as well as its economic potential, an entirely new dynamic developed. River management was removed from its traditional governing framework, and has much broader public support now.

A phased approach has been determined for the realization of La Bassée, with the construction of the first compartment as a pilot program including a global approach to develop public flood awareness and ecological restoration of the river. The challenge that remains is to involve stakeholders who would also contribute to the financing of the project. This will be a win-win situation. Involvement reduces procedural resistance, and implementation can be achieved more quickly. In addition, new opportunities for financing ensue. This will be a very welcome result, because many government budgets are suffering from large cuts. ■

WATER GOVERNANCE: FRANCE VERSUS THE NETHERLANDS

In France, responsibility for river management lies with six regional water agencies (les Agences de l'Eau) which are organized around the basins of the great rivers, namely the Seine-Normandie, Rhone-Méditerranée-Corse, Loire-Bretagne, Adour-Garonne, Artois-Picardie, and Maas/Rhine. The water agencies collect water taxation, determine management plans, but do not play a role in implementation. For this aspect, they must rely on local departments, regions and municipalities.

SOURCES LISTED BY GUEST SPEAKER AND REVIEWER:

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- 2] UNESCO-WWAP (2003). Water for People, The United Nations World Water Development Report.
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- 6] http://www.driec.ile-de-france.developpement-durable.gouv.fr/IMG/pdf/PlanSeine20-12sansannexes_cle01b9fd.pdf
- 7] <http://www.seinegrandslacs.fr/centenaire-de-la-crue-191026/25-vulnerabilite-ile-de-france.html>
- 8] <http://www.seinegrandslacs.fr/la-vulnerabilite/exemples/view.html?path=comparing%20viewpoint%20of%20planning%20practionners.pdf>

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