

ESTONIA AND RUSSIA: MANAGING TRANSBOUNDARY WATERS IN THE LAKE PEIPSI/CHUDSKOE BASIN CASE # 16

This case describes the actions and initiatives required to establish effective transboundary co-operation in lake management, following the break-up of the Soviet Union. The environmental quality of Lake Peipsi has been deteriorating for the past fifty years. The break-up of the Soviet Union caused problems, as there was no international mechanism for sharing the management of what became a transboundary state. But political changes (e.g. Estonia is now an Accession country to the EU) and the need for economic co-operation of the lake – a shared resource (for fishing, transport, etc) – has stimulated transboundary co-operation following IWRM principles.

ABSTRACT

Description

Lake Peipsi/Chudskoe is situated on the border between Estonia and Russia and is the fourth largest lake and the biggest transboundary lake in Europe. It forms part of the basin of the Gulf of Finland and is connected with the latter via the River Narva (77km long). The lake basin covers an area of 47,800 km² and is shared by Russia, Estonia and Latvia. There are about 240 inlets around the lake. Lake Peipsi is unique in its natural characteristics – it is shallow, eutrophic and biologically productive, with substantial fish resources and wetlands of international importance (Ramsar sites). About 1 million people live in the catchment. In 1997, five years after the border between Estonia and Russia was re-established, the riparian governments signed an *Agreement on the Protection and Sustainable Use of Transboundary Water Bodies*. An intergovernmental commission was established to co-ordinate the implementation of this agreement. Along with the existing formal framework for co-operation in the Lake Peipsi region, a network of regional and local authorities, universities, NGOs and businesses is emerging, providing a good basis for implementing IWRM principles in this region. Co-operative research and educational projects play an increasingly important role in building a water knowledge base about the lake region as well as in developing the capacity of water and development experts.

Lessons learned

The Lake Peipsi/Chudskoe case illustrates:

- Importance of riparian countries sharing transboundary waters having the political will to implement changes;
- Importance of the development of formal frameworks for co-operation to successfully implement policies relating to water resources;
- Importance of international financial and technical assistance to implement national policies dealing with water resources as well as intergovernmental transboundary water agreements;
- Research and educational projects play an increasingly important role in generating a water knowledge base about the region as well as in developing the capacity of water and development experts in the region;
- Practical issues – e.g. different working languages, different statistical and data collection norms – can hinder co-operative activities and
- Ensuring effective involvement of civil society is difficult. Even though formal mechanisms for developing co-operation with local authorities, NGOs and stakeholders were set up, only a few regional NGOs are actually involved in the work of the Transboundary Water Commission. The capacity of most local NGOs and stakeholder groups is low and external financial support is necessary to improve this situation.

Importance for IWRM

- Co-operation over Lake Peipsi demonstrates how integrated water resource management tools can be applied to transboundary waters shared by countries in transition. The case shows how a range of tools need to be used together to incorporate IWRM principles into managing the transboundary waters of the Lake Peipsi Basin. In addition, it demonstrates that developing co-operative approaches to water management enables the ecologically sustainable use of natural resources while improving the social and economic conditions and quality of life of people in the region. A network of regional and local authorities, universities, NGOs and businesses is emerging that is a good basis for implementing integrated water resource management principles in the lake basin.

Main tools used

- A1.2 Policies with relation to water resources
- B1.1 Transboundary organisations for water resource management
- B1.6 Civil society institutions and community based organisations
- B2.1 Participatory capacity and empowerment
- B2.4 Knowledge sharing
- C1.1 Water resources knowledge base
- C2.1 River basin plans
- C4.4 Communication with stakeholders
- C4.5 Water campaigns and awareness raising
- C5.2 Shared vision planning
- C8.2 Data sharing – national and international

MAIN TEXT

1 Background and problems

The environmental quality of Lake Peipsi has been deteriorating for fifty years. The break-up of the Soviet Union caused problems, as there was no international mechanism for sharing the management of what became a transboundary state. But political changes (e.g. Estonia is an Accession country to the EU) and the need for economic co-operation of the lake, a shared resource (for fishing, transport, etc), has stimulated transboundary co-operation following IWRM principles.

Socio-economic context

Lake Peipsi forms part of the Baltic Sea Basin. It is connected to the Gulf of Finland via the Narva River (77km long) and is shared by Estonia, Russia and Latvia. 38% of the basin is used for agriculture; 35% is covered by forest. The lake is surrounded by large wetland areas of international importance (Ramsar sites). The region is rich in historic and cultural heritage. Different cultural and ethnic groups live around the lake – Estonians and Russians, Setu and Russian Old-Believers. Approximately 1 million people live in the catchment. There are two major development centres in the lake basin located in its *central and southeastern* part – Tartu in Estonia (98 000 inhabitants) and Pskov in Russia (207 400 inhabitants). In the urban areas, there are food processing, service (banking, communication) and machinery industries. In the rural areas outside these two main towns, typical activities are based on dairy and cattle farming, small-scale fishing, timber enterprises and food processing factories. Commercial fishing is also an important source of income for local communities. There is a growing number of commercial companies fishing on the lake. The annual fish catch of 9,000-12,000 tons (or 25-40 kg/ha) is greater than all other large lakes in Northern Europe (Nõges *et al.*, 1996). Commercial fishing is for lake smelt, perch, ruff, roach, bream, pike, vendace and pikeperch.

The re-establishment of the border regime on Lake Peipsi between Estonia and Russia and the beginning of a transition to a market economy at the beginning of the 1990s resulted in the closure of many enterprises in the region. First to be affected were those that had received

government subsidies or had been dependent on earlier cross-border contacts for fishing, water transport or selling agricultural products. Local stakeholders in the lake area were interested in promoting transboundary co-operation that would help local development and create new jobs.

Environmental situation

Major environmental issues in the Narva River and Lake Peipsi Basin are water eutrophication, management of fish resources (overfishing) and wastewaters originating from oil-shale mines and the oil-shale processing industry.

Eutrophication due to significant nutrient loads, mainly from agriculture, into the shallow Lake Peipsi represents a major threat for lake water quality. Currently, the northern part of the lake can be classified as eutrophic, whilst the southern part is hypertrophic. Over the past 50 years, the ecological condition of Lake Peipsi has been deteriorating. The phosphorus load in the lake, at 256 kg/km², from both agricultural and point sources, is close to critical (Stalnacke, 2001). The economic decline in the late 1980s and mid-1990s caused a considerable decrease in nitrogen and phosphorus loads (Loigu & Leisk, 1996). However, with Estonia entering the European Union in 2004 and the stabilisation of the economic situation in Russia, lake water eutrophication is expected to increase as a direct result.

If there is no improvement in current agricultural practices, future increases in agricultural production could considerably affect the lake's important Baltic Sea area habitats – which support a variety of wildlife, in particular birds.

2 Decisions and actions taken

Re-establishing co-operative links in an international context

Shortly after the re-establishment of the border on Lake Peipsi, local stakeholders in the lake area, including fishermen, municipalities and researchers, tried to re-establish their co-operative links. However, co-operation at an international level required a formal framework. Therefore, in 1993, the Estonian Republic and the Russian Federation signed their first agreement on border crossing points. In 1996, an intergovernmental agreement on activities of border representatives was signed. In 1995 in Pskov, an intergovernmental *Agreement on the Protection and Regulation of the Use of Fish Resources of Lake Peipsi, Lake Lämmi and Lake Pihkva* was signed by the Estonian National Board of Fisheries and the Russian Federal Committee for Fish Resource Management. Furthermore, a Joint Commission was established to implement the fisheries agreement. The Estonian Republic and the Russian Federation signed an intergovernmental *Agreement on the Protection and Sustainable Use of Transboundary Water Bodies* in 1997 in accordance with the UN/ECE Transboundary Water Convention (Helsinki, 1992). The foci of this Agreement were the transboundary waters of the Narva River Basin, including Lake Peipsi. In 1998, an Estonian-Russian Intergovernmental Commission on Trade, Economy, Scientific, Technical, Social, Humanitarian and Cultural Co-operation was created at the highest level to address problems in all fields of bilateral relations.

Joint commission on transboundary waters

A Joint Commission on Transboundary Waters was established to implement the 1997 agreement, creating a good basis for legal and political co-operation (see Tool B1.1, Transboundary organisations for water resource management). The Joint Water Commission is an important institution that can effectively co-ordinate the implementation of integrated water management approaches by the riparian parties, Estonia and Russia. The priority tasks of the commission, as stated in the transboundary water agreement between Estonia and Russia, are:

- To organise the exchange of monitoring data between the parties in accordance with the agreed monitoring programme;
- To define areas of priority and programmes of scientific studies on the protection and sustainable use of transboundary waters;

- To facilitate co-operation between agencies holding executive power, local governments, scientific and public interest organisations, as well as other institutions in the field of sustainable use and protection of transboundary waters and
- To ensure that discussions related to the use and protection of transboundary waters are publicised.

Members of the Joint Commission include representatives from the Ministries of the Environment and Foreign Affairs, border guards and regional and local authorities to ensure that different perspectives are represented. The Commission aims to create conditions for adopting the most viable working solutions to problems. It adopts its working plans and decisions at its annual meeting and four topical expert working groups conduct joint meetings, studies and prepare background information to highlight decisions to be made by the Commission.

Other initiatives have been developed. Local and regional authorities and businesses in the Lake Peipsi region are promoting their agenda for transboundary economic co-operation. This includes:

- Investment in road construction, water transport and tourism infrastructure;
- Promotion of the region internationally and
- Re-establishment of passenger and cargo transport across the lake (due to start in summer 2002).

Engaging civil society

The role of civil society (Tool B1.6) is recognised as important. Regional NGOs, such as the Peipsi Centre for Transboundary Co-operation (Peipsi CTC) and the Council for Co-operation of Border Regions, co-operate with the local authorities and stakeholders in the Lake Peipsi Area on local and regional development, social, educational and research projects. Peipsi CTC (www.ctc.ee) was created in 1993 as an NGO, "Lake Peipsi Project", an informal organisation whose primary focus was research into environmental issues affecting the border between Estonia and Russia. Peipsi CTC now acts as a project implementation unit for transboundary environmental and regional development projects supported by the UNDP, the European Commission, and Danish and Swedish governments. Where Estonian and Russian officials operate on different levels, businesses, schools and NGOs participate.

Development of water basin management plan

At its Second Meeting in 1999, the Commission adopted a decision to start preparing a comprehensive basin management programme based on principles outlined in the draft EU Water Framework Directive. Preparation of the comprehensive Lake Peipsi Basin Management Programme started in 2001. The overall objectives include:

- Practical recommendations to reduce the pollution load in Lake Peipsi as well as to prevent pollution;
- The sustainable conservation of habitats and eco-systems in the cross-border regional context and
- Diversification of economic activities; strategies for water transport, water and environmental tourism and ecological farming will be developed.

Based on their national legislation, the two governments will implement the Programme. The Joint Commission will co-ordinate the implementation of national activities. The Global Environmental Facility, through the UNDP and EU TACIS and LIFE programmes, will provide additional funding to implement the Management Programme. Within the Global Environmental Facility, close co-operation will be developed at a regional level between national governments, regional and local authorities, NGOs, businesses, universities and schools. International and national funding is complemented by private investments, mostly in water transport and tourism. A wide range of experts, research institutions and consultancies are currently involved in preparing the Programme. They will also be involved in its

implementation within ongoing and planned projects in the region supported by the EU, UNDP, Danish, US government and other funding agencies.

Institutional strengthening and knowledge sharing

Estonian and Russian environmental research institutes resumed their research co-operation in the mid 1990s. In a joint collaboration, Estonian and Russian environmental experts published a comprehensive Lake Peipsi monograph. An Environmental Education Centre was established in Tartu, Estonia, to provide training and educational programmes to children and adults. Similar arrangements exist in Russia where Pskov's Regional Ecological and Biological Centre offers educational programmes to children and the Pskov Ecological Information Centre, established in 2002, promotes the dissemination of environmental information to adults. Tartu University initiated a "University-Community Co-operation Programme" that included training for researchers as well as NGO leaders. The programme seemed to be effective in developing the capacity of NGOs and orienting more scientists towards solving the problems of the lake communities.

An international environmental research project, "MANTRA East", supported by the European Union, develops tailor-made approaches to the utilisation of research results by governments and local stakeholders in the Lake Peipsi region. In 2001, a European Union 5th Framework Research and Technical Development Programme supported a 3-year international environmental research project "Integrated Strategies for the Management of Transboundary Waters on the European fringe – the pilot study of Lake Peipsi and its drainage basin (MANTRA-East)." Estonian, Russian, Swedish, Norwegian and Dutch research institutions are involved in the project. To promote sharing knowledge produced within the research project with end-users (decision-makers at different levels, businesses, the research community and general public), the project has developed an information dissemination and communication strategy and a Lake Peipsi Basin interactive regional website, with publications in Estonian, Russian and English, workshops, mass media and community-based events.

The Transboundary Water Commission has been instrumental in developing procedures for data exchange and joint databases. The Commission's working group on water protection, which includes both Estonian and Russian water experts, has developed a shared database on water pollution sources in the lake basin. The experience of this work showed that on transboundary waters:

- Intercalibration of water monitoring, sampling and analysis techniques and environmental data exchange are important first steps to developing joint databases with reliable and data which can be compared easily;
- Regularity in co-operation, personal contacts and co-operation between experts through joint expeditions, etc., helps to build trust and commitment to co-operation between riparian states on developing joint databases;
- Activities on data collection and sharing must follow a logical procedure: firstly, background information should be collected and secondly, on the basis of this collected and analysed information, decision making for joint actions should be carried out and
- Experts in riparian states should have reliable data and information and there should be agreement between them before issues are discussed at a political level.

The Joint Water Commission co-ordinates information on research projects and this allows more efficient use of research findings when catchment management plans are prepared and implemented. Reports on major projects concerning water management in the Lake Peipsi Basin are also available in hard copy and through the Commission website www.envir.ee/jc.

Communication and shared vision planning

Annual conferences and events, such as the Peipsi Forums, bring together state, regional and local authorities, NGOs, and business representatives. The forums and other regular events allow the region's future development prospects to be discussed. Developing a shared vision for regional development (Tool C5.2) is supported by ongoing region-wide sociological and

environmental research projects that allow regional problems (and their causes) to be re-evaluated. The projects also offer development scenarios that can be discussed further by decision-makers and stakeholders. Regional authorities, businesses and NGOs play an important role in facilitating communication and developing an agenda for the shared vision of the Basin's development. This helps to promote intersectoral co-operation and keep together economic and social development and environmental protection priorities that contribute to the sustainable development of the region.

Communication with stakeholders and awareness raising (Tools C4.4 and C4.5) are also central to the programme. In the Lake Peipsi Basin, a network/community of stakeholders is being formed as a result of regional cross-border co-operation projects and initiatives supported by the authorities, businesses and international funding agencies. Information is disseminated throughout the region through regular regional conferences and workshops. Stakeholders exchange and disseminate their information on the Internet, using, for example, multiple thematic websites and email lists.

Another example of awareness raising is the children's annual art contest "World of Water Through the Eyes of Children" organised by regional authorities and NGOs from Russia, Estonia, and Latvia, in which some 5000 children in the region participate. The contest winners are invited to participate in an award ceremony that brings together not only teachers and children but also representatives of environmental, state, regional and local authorities. Participants in this annual event discuss water protection and regional development issues in the Lake Peipsi/Chudskoe Basin.

3 Outcomes

Performance and impact of the actions

As Lake Peipsi/Chudskoe is a relatively new transboundary basin, the procedures for international co-ordination of water management had to be elaborated. This posed a particular challenge since Estonia plans to join the European Union in 2004-2005 and is adopting EU standards and norms, which differ from those in Russia. Development of co-operative integrated water management is a long process, and the situation of transition countries makes other issues – water management, economic and social development problems – more difficult to resolve.

However, while the countries are still only at the beginning of a long-term co-operative programme, this initial phase can definitely be considered successful. The aim of promoting the sustainable use of natural resources in the region has been supported at international and national levels according to Integrated Water Resource Management principles. In practice, the transboundary co-operation in the Lake Peipsi Area has developed gradually due to limited resources. However, this may have been preferable to receiving mega-projects implemented by external consultancies when there was no sound institutional framework for co-operation at an intergovernmental level.

The most important outcomes of this 10-year period of co-operation in the Lake Peipsi Basin Development have been the establishment of legal aspects and institutionalisation of transboundary co-operation at intergovernmental, regional and subregional levels. Other major expected outcomes of the co-operation were:

- Increased ability of regional authorities, NGOs, universities and schools and environmental experts to communicate across the border and
- Establishment of procedures for environmental data and information exchange between national environmental authorities in the region.

Another positive, although unexpected, outcome is the growing involvement of lake municipalities and the private commercial sector in transboundary water co-operation and the development of public-private partnerships at the regional level. This has led to more effective implementation of intergovernmental agreements in the transboundary water basin.

The co-ordinated actions taken by organisations and experts who are involved in water management issues in the Lake Peipsi Basin at different levels also developed a good basis for establishing a shared vision for ecologically sustainable and economically feasible approaches to water management and protection in the Basin. This is a prerequisite to the successful implementation of the Joint Lake Peipsi Basin Management Programme and the long-term sustainability of its results.

Problems encountered – solutions found

Although the co-operation was successful during the process of initiation and implementation of the transboundary water and other agreements, some new needs and problems emerged. For example:

- Language barriers – many younger generation Estonian specialists do not speak Russian, while many of the Russian experts cannot speak English;
- There is a lack of institutional capacity in the region for co-ordinating the preparation and implementation of a comprehensive catchment management plan in accordance with the requirements of the two governments and the EU Water Policy;
- Lack of laboratory equipment, chemicals and food were problems in the process of implementing the monitoring programme. Therefore, some equipment was delivered to and installed in the South Estonian Environmental Protection Laboratory (Estonia) and the Pskov State Committee for Environmental Protection (Russia) by Swedish specialists
- During the process of data collection and analysis, it was found that, due to financial constraints, the sampling frequency on the Russian side of the Lake Peipsi Basin was only 2-6 times per year. This is too low for accurate and precise estimation of the annual nutrient load, and is also significant since 65% of the area is in Russia and
- Differing practices in land-use classification in Estonia and Russia caused uncertainty.

Major challenges to preparing the Basin Management Plan are differences in the Estonian and Russian legislation, disparities in procedures, monitoring strategies, environmental data, information gathering and institutional organisation. There is a need to develop step-by-step guidelines in order to implement integrated water resource management principles.

Winners and losers, sustainability

This long-term co-operation may be cited as a “win-win project” as there is a “winner” in all sectors (environmental, social and economic sectors) and at all levels of management (Estonian and Russian governments and local authorities). The greatest winners are the environment of the Lake Peipsi/Chudskoe Basin and future generations of people in the area.

The long-term sustainability of transboundary water co-operation in the Lake Peipsi Basin is guaranteed by the existence of institutionalised co-operation at the intergovernmental level, the political will of the respective governments as well as an extensive and developing multilevel network of stakeholders. The capacity and competence building activities at the regional level have to be implemented within international projects that will ensure the sustainability of the co-operation, and, even more importantly, ensure the sustainable development of this transboundary water region.

However, there are insufficient financial resources for implementing environmental protection measures in the region. The governments pay the costs of the intergovernmental commission’s secretarial staff. Scientists, local authorities, schools and non-governmental organisations also receive support from international funding agencies in order to be able to participate in the implementation of the transboundary water agreement. This co-operation would not have been possible without international support from the Nordic governments, the European Union, GEF, UNDP as well as other funding agencies. The budget for preparing the joint Lake Peipsi/Chudskoe Basin Management Programme for 2002 – 2005 amounts to almost 5 million Euros.

Most of the international assistance projects have been implemented in close co-operation with local experts, which has proved efficient and beneficial to all concerned.

4 **Lessons learned**

The case illustrates the application of a number of IWRM tools, and although it is at an early stage, several lessons emerge:

- Successful co-operative management of transboundary waters after years of economic crisis and political problems is possible, if the parties involved have the political will and if they create formal mechanisms and the means for co-operation, for example, bilateral agreements, protocols, and agreed procedures, as the experience of Estonia and Russia illustrates.
- Involvement of international funding agencies and experts in the development of transboundary water management structures and instruments is very important. The Swedish Environmental Protection Agency (EPA) provided initial support to the Transboundary Water Agreement. Later on, technical, expert and financial support was also provided by the Danish EPA and Danish Ministry of Foreign Affairs, Norwegian government, Nordic Council of Ministers, the EU, USA, UNDP, as well as other funding agencies.
- Co-ordinated efforts of national governments, local stakeholders, researchers, educators and international funding agencies and organisations in the Lake Peipsi region were important factors that have contributed to the success of the Lake Peipsi Basin water management regime.
- Communication between stakeholders remains the most important factor to facilitating regional initiatives. The majority of local stakeholders in rural communities have very limited access to the Internet or they do not use Internet at all for obtaining information. In addition, as a rule, local stakeholders only use their mother tongue for communication. Therefore, at a local level, local community events and local newspapers are the main channel of communication and information exchange. Communication at a local level in a local language which is presented clearly is critically important.
- However, despite efforts to involve NGOs and local stakeholders in the region and to set up the means for them to communicate their issues and interests directly to the intergovernmental commission, only a few stronger regional NGOs are directly involved in the work of the Commission through its working groups. There is a growing number of grassroots non-profit organisations in both Estonia and Russia that deal with environmental protection and sustainable development issues in the Lake Peipsi Basin but most of the small organisations in the region are weak and do not have sufficient capacity for large-scale activities. External financial support is necessary to improve this situation and to enable local NGOs and stakeholders to get involved in the integrated water resource management of transboundary waters.

Replicability

Experience of transboundary co-operation in the Lake Peipsi/Chudskoe Basin has been used in:

- Developing the Daugava/Zapadnaya Dvina River transboundary water agreement and management system between Belarus, Latvia and Russia. Design of the SEPA Transboundary water project on the Daugava River was made using experience of the SEPA Lake Peipsi monitoring project and
- In the Lake Ohrid Basin, transboundary water co-operation between Albania and Macedonia led to the creation of the “Alliance for Co-operation on Lakes Ohrid and Prespa” – a transboundary NGO similar to Peipsi CTC.

The value of the Lake Peipsi case is in showing how effective formal institutional structures for cost-effective co-operation can be built, including the establishment of information and communication systems, development of institutional arrangements for involving stakeholders and the public in intergovernmental co-operation, and supportive intersectoral co-operation.

These first steps in the process of developing co-operation in the protection and sustainable use of transboundary waters, despite economic crisis and a politically complicated situation, is readily transferable both to countries with similar economical and political backgrounds, as well as to lakes located in similar geographical conditions.

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Table 1. Morphometric data on Lake Peipsi at the water level of 30 m above the sea level (Jaani, 2001)

	L. Peipsi s.s. (Chudskoe)	L. Lämmijärv (Teploe)	L. Pihkva (Pskovskoe)	The whole Lake Peipsi
Area, km ²	2,611	236	708	3,555
Estonia / Russia	1,387 / 1,224	118 / 118	25 / 683	1,564 / 1,991
Distribution of the waters between Estonia and Russia, %	55/44	50/50	1/99	44/56
Percentage of surface area	73	7	20	100
Volume, km ³	21.79	0.60	2.68	25.07
Percentage of total volume	87	2	11	100
Medium depth, m	8.3	2.5	3.8	7.1
Maximum depth, m	12.9	15.3	5.3	15.3
Length, km	81	30	41	152
Medium width, km	32	7.9	17	23
Maximum width, km	47	8.1	20	47
Length of shoreline, km	260	83	177	520
Percentage of total length, km	50	16	34	100

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