



DRIMON Policy Brief # 2 -2008

## Stakeholder perceptions of the Lake Shkodra/Skadar: Current status and future scenarios

*DRIMON: Interdisciplinary assessment of water resource management in two transboundary lakes in South Eastern Europe*

Udaya Sekhar Nagothu (Bioforsk, Norway), Eva Skarbøvik (Bioforsk, Norway), Spase Shumka (Agricultural University of Tirana, Albania); Andrej Perovich (University of Montenegro).

*This policy brief is a short summary of the stakeholder perceptions of the Lake Shkodra/Skadar, as expressed during a stakeholder workshop organised by DRIMON Project partners in Shiroka village, Albania. The purpose of this brief is to share information with managers on the current state of the lake ecosystem, the main drivers, pressures and impacts on the lake, the various policy and management responses necessary to improve integrated transboundary water management, as perceived by the stakeholders. The main drivers causing pressure on the lake ecosystem were identified as agriculture, tourism and urban expansion. In addition to information obtained at the workshop, information gathered from secondary sources, field visits and interviews with local stakeholders are also included in this brief.*

An important aim of the DRIMON project ([www.drimon.no](http://www.drimon.no)) is to contribute towards an increased knowledge base and dialogue between stakeholders for the transboundary management of water resources in the two Balkan lakes - the Macro Prespa and the Shkodra/Skadar. In this policy brief, the case of Lake Shkodra/Skadar is discussed based on the information and data collected by the project participants to date. Data collection will continue until the project ends in 2009.

Attempts have been made so far in the DRIMON project to integrate natural and social science perspectives, and at the same time to identify environmental goals and provide guidelines as to how these goals may be met, through an understanding of institutional structures across borders and enhancement of the dialogue between decision-makers, stakeholders and scientists.



*Lake Shkodra (Montenegrin part) March 2008*

The sustainable use of Lake Skadar/Shkodra is highly important for the large number of users dependent on the lake for their livelihoods. The stakeholders identified agriculture, tourism and urban expansion as the major drivers impacting the Shkodra/Skadar lake ecosystem. The main pressures identified were the unregulated discharge of untreated sewage from growing urban settlements, followed by the increased transport of nutrients from agricultural farms into the adjoining rivers and the lake.

### Fact sheet on Lake Skadar/Shkodra

- Shared between Albania and Montenegro,
- Largest lake on the Balkan Peninsula, with a surface area varying between 353 km<sup>2</sup> in dry periods and 500 km<sup>2</sup> in wet periods.
- The drainage area is about 5,500 km<sup>2</sup>, and the lake is a part of the larger Drim/Drini Catchment system through the confluence of its outlet River, Buna/Bojana.
- Huge biodiversity, with 271 species of birds and 60 species of fish, of which 15 are endemic.
- The unique ecosystem has resulted in the classification of the lake as a RAMSAR site.
- The Montenegrin Part of the lake was declared a National Park in 1982 and the Albanian part as a Nature Management Reserve in 2006.

### Stakeholder workshop

The stakeholder workshop organised in Shiroka village (located in Shkodra municipality), Albania, on 11 September, 2008 brought together representatives from Montenegro and Albania that have a direct or indirect interest in the water resources of the Shkodra/Skadar lake. The participants included managers, policy makers, researchers and end-users from several agencies in both Albania and Montenegro. In the workshop, the participants discussed possible scenarios, identified the main drivers, the pressures and impacts and type of responses in terms of management and policy measures related to Lake Shkodra/Skadar, the institutional constraints for transboundary management, and their suggestions for improved management of the water resources.

The stakeholders present at the workshop represented a fairly wide spectrum of agencies, including the Department of Water Resources, Tourism, Agriculture, National park management, research institutes and NGOs from both countries. The discussions led to a good overview of the current challenges and management status on the Montenegrin and Albanian part of the lake Shkodra/Skadar. Overall, the stakeholders expressed that it was a good exercise and more such workshops should be organized in the future to promote dialogue between the stakeholders from the two countries.



*Participants at the workshop, Shiroka, Sept 2008*

### Main Pressures and Impacts on the Lake Shkodra/Skadar

#### Agriculture

The stakeholders identified agricultural intensification in the areas of Kopliku, Vraca (Kopliku district) and Shosi (Shkodra district) on the Albanian side; and the Zeta valley on the Montenegrin side as one of the main

drivers impacting the lake environment. According to them, vegetable production and vineyards are increasing, the latter presently amounting to about 2400 hectares on the Montenegrin side and 1400 hectares on the Albanian side. Deforestation and clearing of land for agriculture along the lake shores by migrants moving down from mountaneous areas was reported to be a serious problem on the Albanian side, and the stakeholders expressed a serious need to regulate the agricultural development in order to reduce the negative pressures and impacts.



*Local fishermen in Lake Shkodra/Skadar whose livelihood is based on lake fisheries*

Agricultural impacts on the ecosystem include:

- Increased loads of nutrients and pesticides from agricultural areas, especially vineyards. An example was given from the Kopliku area, where 600 kg of phosphorus and 400 kg of nitrogen is added per hectare vineyard;
- Increased eutrophication and algal blooms due to the increased loads of nutrients;
- Increasing aquatic weeds (macrophytes) along the shores of the lake.

#### Tourism and Urban expansion

The expansion of the tourist industry and urban areas in the lake's catchment area constitute a pressure on the environment, mainly due to sewage and solid waste. It is however, important to keep in mind that the tourism industry is important for the stakeholders, as it gives

- increase in employment potential for locals and therefore improved economy;
- spin-off effects since more investments in the tourism development also brings growth in other sectors.

However, with an increased number of people to the region the pressures also increase, as follows:

- Constructions of hotels, restaurants and houses along the lake shore disturb the natural habitats;
- Unsatisfactory sewage treatment systems from urban settlements, hotels and restaurants cause sewage to be discharged directly in the rivers or lake systems;
- Increased number of people giving increased solid waste problems, but also

The resulting impacts may include

- Increased eutrophication and algae blooms affecting fisheries and biodiversity as well as reducing the suitability of the lake for swimming and recreation;
- Toxic seepage from solid waste dumps, resulting in increased risks for toxins in fish;
- Noise pollution from boats and other touristic activities will disturb birds and may reduce nesting in the area.



*Tourism development may cause habitat disturbances (Skadar lake near Virpazhar, 2007)*

### How may the situation can be mitigated?

The main suggestions by the stakeholders for an improved sustainable use and management of the lake include;

#### Agriculture

- Plant trees and/or grassland on steep slopes not suitable for agriculture;
- Improve the land registration system by e.g. using GIS tools;
- Improve the regional advice and supervision system for farmers in order to increase awareness;

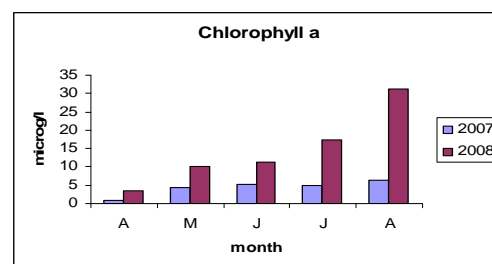
- Provide services for soil analyses in order to help control the use of fertilizers and pesticides;
- Increase scientific cooperation between institutions, particularly Podgorica University and Skodra University (the DRIMON Project was seen as a good example of scientific co-operation);
- Develop common monitoring systems between the two countries, including both water quality, hydrology and monitoring of agricultural practices.
- The above recommendations will require more funds from the governments to the sectors of agriculture, environment and water.

#### Tourism:

- Local communities should participate in planning and environmental campaigns in the Shkodra/Skadar (this was also stated by 50% respondents in the DRIMON Stakeholder survey);
- Sewage treatment plants should be set up, especially in Shkodra city and the Kopliku area (Albania), and in Niksic, Danilovgrad and Podgorica (Montenegro);
- Introduce ecological tax on tourists and public (the DRIMON Stakeholder survey showed that 77% of the respondents supported the introduction of eco-tax on tourists);
- Encourage private investments to improve tourism infrastructure, including roads, better sewage treatment and clean environment.

#### **DRIMON water monitoring programme**

One of the recommendations from the Stakeholder workshop was to establish a common monitoring network in the catchment area. The DRIMON project has set up such a transboundary monitoring program in order to investigate the impacts of amongst others agriculture, tourism and urban expansion on water quality.



*Chlorophyll a levels indicate algae growth. The levels vary significantly from year to year (Montenegro)*



*sampling site 2007 and 2008).*

In order to cover yearly variations samples from the lake and tributaries have been collected both in 2007 and 2008. The data show, e.g., marked increase in algae levels in 2008, again indicating increased nutrient inputs.

#### **Institutional and transboundary cooperation**

There was a general agreement among the participants that priority should be given to implementation of existing laws for protection of water resources rather than creating new ones. In both countries, the new water laws have been developed in line with the EU Water Framework Directive, but the stakeholders felt that more focus should be put on both implementation and integration of management measures nationally. The reconstitution of the relevant Ministries in both the countries shows that the governments are interested to integrate the water management with other relevant sectors, like land, forests and tourism. For example, in Montenegro, the Shkodra National Park has the overall authority to make decisions in the lake management.

On the transboundary cooperation front, some meetings have been held and declarations signed. An example is the Shkodra Forum, constituted by the Regional Environmental Centre (REC) in 2006 and involving NGOs, universities and the National Park. An MoU between the National Park in Montenegro and the Velipoja protected area in Albania exists. However, the outcome and follow up of such agreements and declarations has been poor. The stakeholders expressed that even though the Lake Shkoder area is a common resource to both Albania and Montenegro, there is not much co-operation between the two

countries. The dialogue between the two governments on issues related to the lake environment began in 1995, but it was only in May 2003 that the Memorandum of Understanding (MoU) for the Protection and Sustainable Development of Lake Shkodra was formally signed by the Ministers of Environment in Albania and Montenegro. By doing so, the two countries committed themselves to conserve the natural resources of Lake Shkoder in a coordinated and integrated manner; to establish a bilateral Lake Management Commission; and to improve regulatory and institutional capacities. However, relatively little has allegedly been done since this MoU was signed.



*Group work during Shiroka workshop*

#### **Way forward**

Stakeholders expressed a strong need for integrated management and co-operation at the local level between land, agriculture, fishery, water and environment sectors. They felt that education and scientific co-operation and sharing of knowledge and information should be prioritized in the future. One suggestion was joint monitoring of the lake. Funding was seen as an important factor for implementation of transboundary activities.

#### **The DRIMON Project (2006-2009)**

Through the integration of natural and social sciences the DRIMON Project will identify environmental goals and provide guidelines as to how these goals may be met, through an understanding of institutional structures across borders and enhancement of the dialogue between decision-makers, stakeholders and scientists. The partners are:

- Bioforsk - Norwegian Institute for Agricultural and Environmental Research (Project leader)
- The Agricultural Institute, University of St. Cyril and Methodius, Macedonia.
- The Agricultural University of Tirana, Albania.
- Faculty of Natural Sciences and Mathematics, University of Montenegro
- NIVA, the Norwegian Institute for Water Research

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Read more: [www.drimon.no](http://www.drimon.no)