

ADVANCES TOWARDS TRANSBOUNDARY WATER MANAGEMENT IN THE PRESPA PARK

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The Prespa Park (PP) was established by a Declaration of the Prime Ministers of Greece, Albania and the FYR of Macedonia on 2 February 2000, aiming at the preservation of the unique natural and cultural values of the region, as well as the promotion of peace, friendship and cooperation between the three peoples. The Prime Ministerial Declaration instructed the parties to explore appropriate management methods for the sustainable use of the Prespa Lakes water. In 2001-2002 a Strategic Action Plan (SAP) for the Sustainable Development of the Prespa Park was prepared and then endorsed by the Prespa Park Coordination Committee in May 2004. *The first objective was detailed in the SAP as follows: Conservation of ecological values and functions and of the biological diversity in the Prespa Park area.* In order to achieve this objective, the following (among others) policy principles concerning waters were adopted:

- Promotion of the concept of unity of the Prespa catchment basin.
- Wise water management in the basin.
- Promotion of measures to resolve the Devoll problem.
- Mitigation of the special pollution problems the Macro Prespa Lake is faced with.
- Sustainable utilisation of natural resources in and around the Prespa Lakes.
- Adoption of a joint monitoring system.

Based on the aforementioned principles the preservation of Prespa water resources was defined as one of the specific operational targets and stated that all relative implemented measures should secure: (a) the fluctuation of the water level of the lakes will stay within a desired amplitude, so as to serve the conservation of the values depending on water level, (b) the meeting of drinking water and irrigation needs in each country; (c) the prevention of pollution from point sources and the minimisation of pollution from non-point sources; (d) the preservation of acceptable water quality levels for the various agreed uses; (e) the monitoring of quantitative and qualitative parameters of the waters. Activities suggested were as follows:

In *all three countries*:

Accomplishment of a hydrogeological study for the whole catchment basin aiming at: (a) the mitigation of the problems of siltation of Micro Prespa, pollution of Macro Prespa and decrease of its water level; (b) the establishment of a reliable, on line and open to public monitoring system run by an appropriate management body; (c) the development of a Basin Water Management Plan coordinated between the three countries.

In *Albania*:

(a) Limitation of diversion of Devoll river flow in Micro Prespa and direct abstractions for irrigation of the Korcha plain (Fig.1) and estimation of its impact to the water balance of Micro Prespa Lake; (b) Promotion of reforestation activities in both lakes to restore critical micro-watersheds and springs.

In Greece:

- (a) Implementation of the optimum water level ($+850.60 \div +851.00$ m asl during spring) of Micro Prespa, (according to a recent and approved by the competent authorities study); (b) Analysis of the water characteristics, the impact of activities on the quantity of water and an economic analysis of water use, according to the requirements of the Water Framework Directive (2000/60/EC - WFD); (c) Rational use of fertilisers according to the real needs of the crops. Promotion of environment-friendly cultivation methods and provision of information to the farmers on the use of pesticides. Control and cessation of the washing of spraying equipment in the streams and in the lakes; (d) Organisation of an effective waste collection system and cessation of uncontrolled dumping of solid waste; (e) Connection of all settlements and villages to sewage networks. Establishment of small (preferably constructed wetlands) wastewater treatment plants (WWTP).

In the FYR of Macedonia:

- (a) Implementation of a programme to restore the water quality of Golema Reka River. (b) Control of the excessive use of fertilisers in the fruit yards. (c) Control of the dumping of pesticide packaging in the Golema Reka River. (d) Connection of all settlements and villages to sewage networks and establishment of small WWTP.

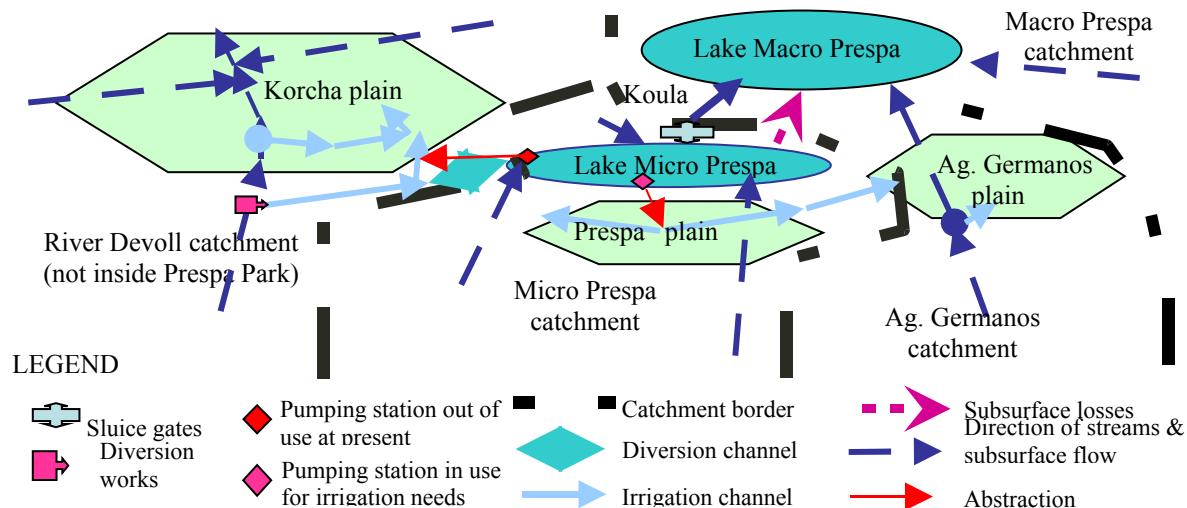


Fig. 1. River Devoll and Korcha irrigation scheme interactions with the Micro Prespa hydro-system

With respect to above suggested activities the progress made can be summarised as follows:

In all three countries:

The much-needed hydrogeological study for the whole catchment has not been carried out due to its excessively high cost. However, a KfW-funded preliminary hydrological study in 2004-2005 has contributed to increased knowledge in this field. Moreover, a study of the complex hydrogeology of the region has been going on for the past few years by a team of scientists from the three countries. Research was in the past funded by the IAEA and currently by NATO. The main problems which this study was to be aimed at according to the SAP, namely siltation of Micro Prespa, pollution of Macro Prespa and decrease of its water level are being partly addressed by other actions (see below).

A transboundary monitoring system is currently being set up in the Prespa Park area (2007-2011). The system is being designed by a team of international and national experts led by the institute Tour-du-Valat (France). Funds are provided by the NGO Society for the Protection of Prespa (SPP) and WWF Greece. This activity is developed in synergy with the GEF-funded regional project for Prespa (hereinafter GEF

project), which supports an extensive consultative process, through the operation of a trilateral Working Group on Monitoring and Conservation.

The GEF project (2007-2011) supports the coordination of Water Management Plans that will be developed in the three littoral countries, mainly through the operation of a trilateral Working Group on Water Management.

In Albania:

- a) In 2005-6 SPP and Albanian NGO “Protection and Preservation of Natural Environment in Albania” (PPNEA) carried out a study on the interaction between Lake Micro Prespa and River Devoll. It was confirmed that excessive inflows (late winter to early spring) for 25 years from the Devoll river and massive abstractions ($20-30 \text{ } 10^6 \text{ m}^3$) in summer for irrigation of the Korcha plain was proved harmful for the lake since they caused extensive siltation of the south shallow parts and strong water level fluctuations which disturb fish spawning (Figs 2, 3). Since 2002 diversion of the river flow, as well as abstractions have been ceased but still there are requests for rebound.
- b) On the Albanian side of the Prespa catchment basin there have been in the past several efforts for reforestation as this is one of the most pressing problems of the area. Currently a large project is under implementation in this direction by the German Bank of Reconstruction (KfW).

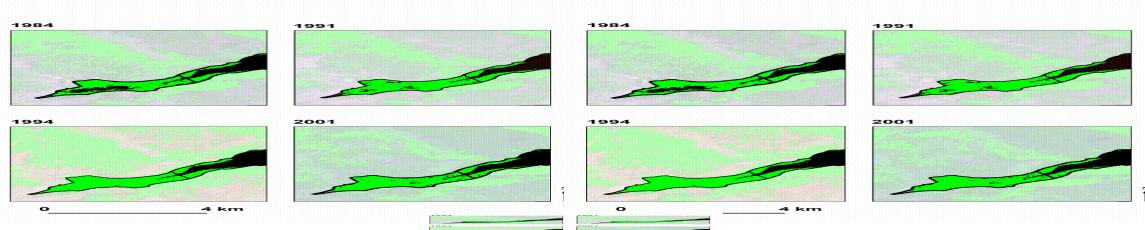


Fig. 2. Evolution of emergent vegetation in the south part of Micro Prespa due to siltation.

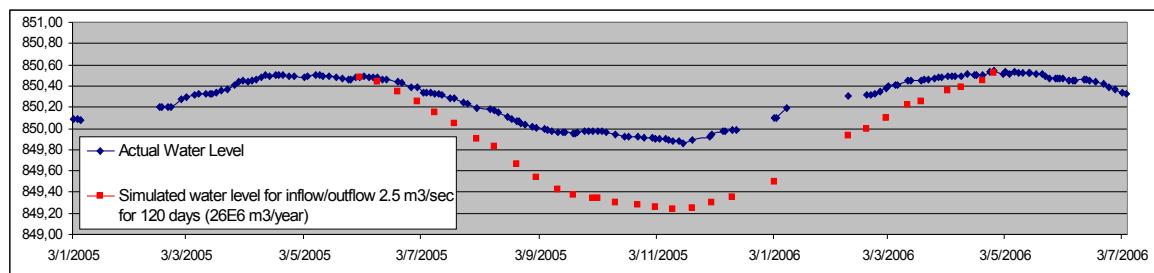


Fig. 3. Impact of Devoll flow diversion and Korha abstractions on Micro Prespa water level in the years 2005 and 2006.

In Greece:

- a) Since 2005 the water level is controlled successfully by appropriate operations of sluice gates at Koula (Fig.1). The optimum lake level is the upper level limit with min. perturbations. The upper limit satisfies farmers' demand to avoid flooding or poor drainage of their land. The lower limit safeguards sufficient wet meadows, successful fish spawning and protection of bird nests from predators.
- b) Efforts at implementation of the WFD in Greece have been ongoing for the past few years. A comprehensive analysis of the water characteristics, the impact of activities on the quantity of water and an economic analysis of water use for the Prespa basin has not been carried out so far.

c) Rationalisation of the use of fertilisers and agrochemicals on the Greek side has been tried through the application of a system of Integrated Protection and Production involving bean farmers organised in a producers' group. A more comprehensive scheme for environment-friendly cultivation methods is in its second year of implementation and run by the Management Body of the Prespa National Forest. The scheme is aiming at bestowing a "Prespa Park Product" label to the participating farmers and has the potential of extending to other products and countries of the basin. The target of control and cessation of the washing of spraying equipment in the streams and the lakes and of uncontrolled disposal of agrochemicals' packaging has not been pursued yet. Funding for the change of irrigation system from surface to drip, which would have a considerable positive impact on Micro Prespa lake, has been recently pledged at Ministerial level.

d) Solid waste is collected and disposed by the Municipality but uncontrolled dumping is still present.

e) Two decentralised Wastewater Treatment Plants (constructed wetlands) are under construction covering 85% of the Greek Prespa population, with funding by the Regional Operation Programme (PEP – EU and national funds).

In the FYR of Macedonia

a) The water quality of Golema Reka River, the largest river in the watershed, is a major issue in the FYR of Macedonia side. A project has been carried out for the past two years for the "ecological restoration" of Golema Reka, implemented by UNDP with Swiss Development Assistance funds. A comprehensive study has been produced but the actual works under way are related to some anti-flooding measures and a rehabilitation of the regulated urban part of river. Water quality of the river is addressed under (b) and (d) below.

b) Control of the excessive use of fertilisers and agrochemicals in general in the cultivations of the extended plain of the FYR of Macedonia part of the basin is the objective of a GEF project activity. This is organised through capacity-building and training of the local farmers on Good Agricultural Practices. An already completed UNDP project with the same objective has also established an agrochemical laboratory and an agro-meteorological station in the area.

c) Control of the dumping of pesticide packaging in the Golema Reka River and the whole of the agricultural area is one of the objectives of the GEF project under implementation but no specific action has been undertaken yet.

d) The Resen urban centre and some neighbouring villages (approx. 55% of the population) are already connected to a sewage network that ends up in the Ezerani WWTP operating since May 2005 (built with KfW funds). The Prespa GEF project is planned to demonstrate the feasibility of small-scale wastewater units by establishing one pilot facility to serve some of the remaining villages.

Despite the significant progress that has been made in almost every single issue included in the SAP of the PP still actual transboundary water management has not been achieved as there is not yet a collaborative structure of the water management authorities from the three states that will organise and lead such a process. In this context, major problems such as the water level drop of Macro Prespa and the issue of Devoll diversion and abstractions to cover needs outside the PP catchment remain unsolved. In any case, involved countries continue collaboration efforts despite difficulties and it is expected that in the following years notable institutional as well as technocratic progress will be achieved for sustainable water management in the Prespa Park basin.