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**PERFORMANCE AUDIT ON ECOSYSTEM PRESERVATION
OF PRESPA NATIONAL PARK**

INTRODUCTION

There are over 100 definitions of sustainable development, but the most known and classic is that of World Commission on Environment and Development (WCED) "Our Common Future", otherwise known as the Brundtland Report¹. According to this definition, "Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Today's reality shows a dominance of the economy on the environment and society. Sustainable development recognizes the need for balance between economic, social and environmental aspects. Therefore, sustainability is not the same as environment friendliness, but a more complex concept. Sustainable development requires an effort from all sectors². The concept of sustainable development is likely to pose new methodological and analytical challenges for SAIs. A key decision for study design in the future will be how far SAIs could, or should, look at trade-offs between economic, environmental and social objectives³. Sustainable development is of critical importance for all citizens, it engages choices that will affect essential aspects of our lifestyles. It should take into consideration various conflicting interests. It also requires efforts from society as a whole and the government commitments would become useless if they were not to be paralleled by similar commitments by the businesses sector and civil society. However, the necessary broadly based involvement of citizens is very challenging and requires well defined mechanisms and management practices to associate government and stakeholders in finding solutions, in particular given the conflicting nature of many economic, environmental and social issues among various groups, and the difficulty to find "win-win-win" solutions that would reconcile economic,

¹ World Commission on Environment and Development (WCED). 1987 *Our common future*.

² National Audit Office of Estonia & University of Tartu, 2016, Introduction to Environmental Auditing in the Public Sector

³ ISSAI 5130

environmental and social objectives⁴. Even though the countries differ in their environmental, social and economic context, as well as in governance structures, traditions and political issues, they face problems with similar issues when they draw up and implement sustainable development strategies. The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities. Technology and social organization can be both managed and improved to make way for a new era of economic growth. Meeting essential needs requires not only a new era of economic growth for nations in which the majority are poor, but an assurance that those poor get their fair share of the resources required to sustain that growth. Such equity would be aided by political systems that secure effective citizen participation in decision making and by greater democracy in international decision making. Yet in the end, sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs⁵. Management Plans are developed for the protected areas such as the Prespa National Park⁶. The Prespa National Park Management Plan was approved by the Minister of Environment with the Order no. 1792 dated 09.05.2014. The main purpose of the Management Plan is to protect ecosystems and their functioning as well as to provide their services to the present and future generations. In this management plan there are described the threats which this park is faced as well as possible solutions to these threats.

AIM

The main goal of the Performance Audit on Ecosystem Preservation of Prespa National Park despite identifying and evaluating the factors that affect the ecosystem of this entire area is to make recommendations for improving the current social, economic and environmental situation.

METHODOLOGY

In this audit, three main approaches were used to analyze the information collected by the subjects: 1) Quantitative approach, 2) Quality approach, and 3) Pragmatic approach, which is the most appropriate approach to performance audits. The audit in its entirety has a statistical, observer, research, analysis and comparative character. On the other hand, the SWOT analysis used in this audit aims to identify the key internal and external factors that are important to achieve a certain objective. In addition, a cost-benefit analysis is used to evaluate and compare the existing waste management option with the proposed alternative from the audit team.

⁴ OECD, France 2002, page 11.

⁵ Report of the World Commission on Environment and Development: Our Common Future, page 17.

⁶ Law no..9868, date on 4.2.2008 "For some additions and amendments in law no.8906, date 6.6.2002 "On protected areas, Article 15.

PROBLEM STATEMENT

Prespa National Park has an area of about 27,750 ha of which about 5238 ha are water surface (Macro Prespa Lake and Micro Prespa Lake). Unlawful cutting of firewood, uncontrolled fishing and hunting, non urban waste management and urban pressure are the main issues raised in this audit. The pollution of the Prespa Lakes waters by the non-treatment of sewage that ends directly into lakes or undergroundwater, and the communication of Micro Prespa with the contaminated channel supplied by Devolli River is another major problem. Water-related issues are among the most worrying challenges many governments face, with implications for human health, economic development and environmental protection. They range from rainwater drainage to drinking water infrastructure issues and are often closely linked to agriculture⁷. All these problems have been reviewed not only from the environmental aspect but also on social and economic aspects, as these three areas are linked and directly affect one another. According to the DECISION of Council of Ministers No. 80 dated 18.02. 1999 – The area of extension of the Prespa “National Park” includes:

- Agricultural land (arable, vineyard, orchard) 2,100 ha
- Forest and forest land 13,500 ha
- Grassland and meadow 1,828 ha
- Water body 4,950 ha
- Unproductive surface, urban areas, etc. 5,372 ha

Nowadays, all around the world protected areas are facing many challenges. Administrations of protected areas are exposed to divergent interests and strong pressures dealing with ecosystems that they need to take care of. Thus, they must not only learn how to maintain biodiversity values, but also how to communicate with other decision makers, local community and other public sectors in order to guarantee long-term survival of ecosystems in their responsibilities. In this context, a number of questions can be raised such as:

- How can park visitors enjoy the beauty and "cruelty" of it without harming it?
- How can the local community benefit from these parks?
- How can a solution be found to the inevitable conflicts between nature protectors and the idea to develop within the park?

Policymakers, decision makers, administration of protected areas and staff have a crucial task: To protect nature and natural resources for today's and future generations in a world where the common language is money. This is not an easy task. The main issues that the Prespa National Park still faces are as follows:

- Recovery capability and sustainability of ecosystems;
- Exploitation of firewood and their trading;
- Overgrazing;
- Overfishing and uncontrolled fishing;

⁷ National Audit Office of Estonia & University of Tartu, 2016, Auditing Environmental Impacts of Infrastructure Development.

- Uncontrolled hunting;
- Uncontrolled urbanization;
- Environmental pollution (urban waste and discharging of wastewater into the lake)
- Inefficient inter-institutional cooperation;
- Inappropriate functioning of institutions, lack of necessary staff and their capacities;
- Lack of determination of costs and benefits for specific items;
- Lack of training and professional staff, etc.⁸

CONTENT OF THE AUDIT

All of the above-mentioned problems which have negative impacts on the PNP are widely below treated on this audit by presenting the current situation and possible recommendations for improvement. Each issue is separately dealt to better understand the responsibilities and obligations of the subjects to which the recommendations are addressed. Where it is feasible and sufficient data are provided, economic analysis are been carried out to calculate economic, social and environmental damage from non-action and/or non-compliance of legal standards or criteria.

The main question raised in the audit is: **Has Prespa National Park's ecosystem been effective?** This question is accompanied by a series of other questions. This audit addresses those issues that have a great impact on the ecosystem of Prespa Park and where the situation is very difficult.

Forests

Prespa National Park is an area of the second category of protection based on the law of protected areas. Forests in protected areas are excluded from classification as forests for exploitation⁹. Forest management located within a protected area, is done by the administration of protected areas. The Administration exercises these activities directly or through a company authorized by it. Forest Reserve Fund of Protected Areas can only be used for generating firewood for heating only for local residents¹⁰. Based on the rules foreseen for the National Park, only the forests of the sustainable development area and the forests of the traditional use area can be used as firewood. No intervention in forests is permitted in central areas. This area includes 24% of the total forest area of the Prespa National Park, where cutting or gathering of firewood is not allowed. The total forest area within the Prespa Park is 14.748,38 ha¹¹, from which about 3,600 ha of forests are designated as the central area of the Prespa National Park, where no interference is allowed¹². Consequently, the average firewood consumption per household per year should be reduced

⁸ Prespa National Park Management Plan

⁹ Law No.9868, dated 4.2.2008 "On some Amendments and Amendments to Law No.8906, dated 6.6.2002" On Protected Areas "

¹⁰ Prespa National Park Management Plan pg 75

¹¹ Prespa National Park Management Plan pg. 23.

¹² Prespa National Park Management Plan pg. 73.

from 10 m³ to 5 m³. The audit team during the on-site visits identified various groups and individuals, villagers within the Prespa Park, but also the people from village of Tren or other villages, who were transporting fresh wood. All these residents were asked whether they were controlled by the park administration determining the land or whether they have recorded the final amount of wood and the time at which they were cut. All their answers have clearly proved that on them was not exercising any control. In order to prove the best evidence, some pictures were taken and some information was received through questionnaires where 46% of respondents said that there is no control carried out, 40% answered that the control was performed on the average and 14% said that the control was very high. The audit team, wanting to provide a more sustainable solution and taking into account the aggravated socio-economic situation of park residents, has recommended that the cutting activities should be contracted by associations or private companies, which are licensed for forest work and to serve to the local population demands. This makes it easier for the park administration to control all the cutting in the park. Only members of these associations or companies will be allowed to cut wood and will have special clothing to be distinguished immediately. Each of their members will have an identification card from the park administration in order to be checked for management activity by the park administration¹³.

Hunting

Hunting in Prespa National Park is completely prohibited¹⁴. Trapped cameras located in the central area of the Prespa Park have discovered a large number of "hunters" in this area¹⁵. In all Prespa regions are registered 60 species of mammals. Almost all of these species have been recorded in Albanian part as well. Fauna of birds in Prespa is of international importance due to its natural wealth, but also due to the presence of important populations of rare species. In Prespa it can be found the only breeding colony of the great white pelican (*Pelecanus onocrotalus*) in the European Union. Illegal hunting is done in most cases at night. Hunters are equipped with hunting weapons. The State Inspectorate of Environment and Forests in Korca has not registered even a single case of performing illegal hunting. Thus, there is no penalizing measure taken against offenders who commit illegal hunting.

Fishing

Regarding the fishing situation it is found to be very problematic, having in consideration the importance of the fishing sector, which is one of the main sources of local incomes. Surface water which also includes two Prespa lakes is 5238 ha of which 4802 ha belong to the Macro Prespa and 436 ha belong to Micro Prespa. Based on the Prespa National Park Management Plan - PNPMP, the number of fishermen fishing in the Prespa Lakes has been around 150, from which 50 have been eligible and around 100 illegal. In the two Prespa lakes there are some prohibited areas for fishing which are set in the Prespa National Park Management Plan. Forbidden areas for fishing include areas of vital importance for the reproduction of fish. The audit showed that two key units of drafting fisheries policies and implementing

¹³ Prespa National Park Management Plan pg. 79.

¹⁴ Law no. 10253 date 11.03.2010 article 11 point b.

¹⁵ Prespa National Park Management Plan pg. 39.

them (Directorate of Fishery Policies and Directorate of Fishery Services and Aquaculture) are unaware that in both Prespa Lakes there are special areas for which fishing activities are prohibited as highlighted in the PNPMP. In order that the fishing to be legitimate and well-managed it is necessary that, firstly, the Prespa Lakes should be declared co-management zones by the Council of Ministers decision and secondly should be drafted the Co-management Plan¹⁶. So far none of these has been realized.

Urban waste

Urban Waste Management referred to Law no. 10463 of 22.9.2011 "For integrated waste management is under the responsibility of the LGUs. **Integrated waste management** is the collection, transport, recovery and disposal of waste, supervision of these operations, aftercare of disposal sites, as well as the actions undertaken from the trader or agent¹⁷. In the territory of the Prespa National Park responsible for urban waste management are the Municipality of Pustec and the Municipality of Devoll. The total amount of waste generation in the territory of the Prespa National Park is around 1,200 tonnes of waste per year. The largest amount is given by the Municipality of Pustec with about 1,000 tons and about 200 tons from the villages of Prespa Park that are part of the Municipality of Devoll. From field observation that the audit team has accomplished regarding this issue, the situation appears more problematic in the Municipality of Pustec, perhaps due to the fact that the Municipality of Devoll has a small area that is part of the Prespa Park. On the territory of the Municipality of Pustec there are some urban waste sites, where wastes are burned in open environment by polluting the air.



Photo 1: View of waste burning in open environment, (A.Guri, 2017)

Besides describing the situation, the audit team was focused on finding a sustainable waste management solution, comparing the current situation with another variant, which can be

¹⁶ Law 64/2012 "On Fishing", Article 55.

¹⁷ Law. Nr. 10463, dated 22.9.2011 "For integrated waste management" article 3, point 32

applied to the Municipality of Pustec. The comparison of the two variants is done using Cost-Benefit Analysis (CBA). The economic analysis in general and the CBA in particular can give policy makers valuable information to make the right decisions. CBA finds, evaluates, and calculates all positive factors, which are the benefits. Then it identifies, evaluates and deducts all costs. The difference between benefits and costs indicates whether a planned project or work is advisable. Currently, all the waste created in the Municipality of Pustec are thrown into two dumps. Open dump is an uncontrolled landfill in which solid waste is thrown without being disposed (fig 1), where no processing is carried out, and they are burned in an open environment. Open dumps have a negative effect on air, surface and underground water as well as on the ground, posing a risk to the environment and human health.

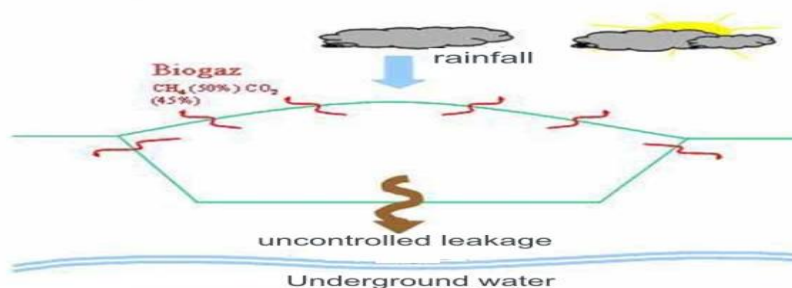


Figure 1: Schematic figure of the current dumps of Pustec Municipality

This risk is threatening to the lives of residents of these areas. The open dump, in no one case has protective clothing at the bottom and side pages. Also the filtration system of leakage is missing. Waters deriving from open dump easily flow into dual channels and watersheds as well as at nearby rivers. The "open dump" releases methane gas and heavy metal dust particles as well as other inorganic and organic compounds such as dioxins, furans (UNEP 2000). The Cost-Benefit Analysis was performed only for 2016 to calculate the total waste management in a year in the current state and to compare it with the proposed alternative. To assess the current situation, it was initially identified the costs and benefits of a current waste management situation. The costs of the current waste management situation consist of Financial Costs (2016 budget of the Municipality Pustec and cleaning fee revenues), Social Costs (Disamenity costs¹⁸, damage Costs from leakage¹⁹ and damp

¹⁸ By "disamenity" we understand the disadvantages or concerns that give a certain activity at the location where he exercises this activity, which are expressed in monetary value. The term "disamenity" includes such influences that come from noise, dust, waste, unpleasant smell, the presence of parasites, visual appearance and perception of human health risk due to the proximity to the landfill.

¹⁹ Leakages are polluted waters with a high pollution complexity. The composition of leakage is closely related to the conduction of chemical-physical-biological processes occurring within the waste dumpsite.

rehabilitation cost) and Environmental Costs (Costs of damage from CO₂ and CH₄ emissions.) In this situation we do not have social and environmental benefits. These calculations are dealt more detailed in the "Preservation of Ecosystem of Prespa National Park" Audit Report. As a conclusion we can say that the Municipality of Pustec every year creates an economic, social and environmental damage of 10,325,885 ALL.

Variant II or the variant proposed by the audit team also recommends that the waste should have for final destination the landfill of Maliq. In order the total cost to be as low as possible, it is recommended that organic waste be processed into the garden of each family. Being a rural area and since each home has space and opportunity to do so, it would reduce the amount of waste that would go to the landfill of Maliq. By knowing that the total amount of waste is 955 tons per year, we can say that the total amount of organic waste is 513 tons. From this result the difference of 442 tons / year will go and will be deposited at the Maliq landfill. In Variant II, we have only financial costs because the waste will not be deposited in Pustec Municipality and will have no negative effects on environment and health which are then converted into socio-environmental costs. Unlike from Variant I, Variant II will have social and environmental benefits by avoiding negative effects that are more widely calculated in the audit report. Calculating the financial, social and environmental costs and benefits for the alternative proposed by the audit team results that the total value of this variant is 13.628.485 ALL. So, it is clear that the difference between the two variants is about 23,000,000 ALL. As a conclusion, we can say that Variant II, despite respecting Law 10463 of Integrated Waste Management and contemporary standards, also has higher financial profitability, increases the economy of this service as well provides a sustainable solution to waste management.

Water pollution:

Urban water pollution must be seen in two aspects: Polluted waters generated by the local population and those generated by economic activities operating in the Prespa Park. In the territory of Prespa National Park, there are around 13 Bar - Restaurants and 3 Hotels. All these activities, like almost all villages, discharge the sewage into septic tanks. Treni village is another important factor in the deterioration of the water quality of Micro Prespa Lake. All the wastewater of this village flows into the canal supplied by the Devolli River and communicates with Micro Prespa Lake. The Law no. 9115, dated 24.07.2003 "On Environmental Treatment of Wastewater" aims to protect the environment and human health from the negative impacts of polluted waters, defining the rules of their environmental treatment as well as the obligations of wastewater discharges. Based on this law, all the activities which discharge polluted waters are obliged to take measures for the environmental treatment of urban wastewater. In cases where the sewage network can not be built, other systems are placed in order to treat them prior to discharge into surface waters that guarantee environmental protection.



Foto: Local resident cleaning sewage channel (A.Guri, 2017)

Preservation of water resources

The Prespa Lakes are among the main lakes of the Balkan Peninsula. They are made up by Macro Prespa and Micro Prespa. The Macro Prespa has an area of 285 km², while Micro Prespa is 44 km². Only 49.5 km² of these are located within the borders of the Republic of Albania. An important element of the hydrographic network of Prespa Lake is the underground discharge system of its excessive water, which is consisted from a large number of cracks, hinkashes, cavities and karstic caves. The most important is the cave of Zaveri, which is located on the south-west shore of Prespa Lake, near Gorica village. The excess water of this lake with an overall flow around $Q_0 = 12-15 \text{ m}^3 / \text{s}$ is discharged through underground, mainly to Ohrid Lake, which is 157 m below Prespa Lake²⁰. Water quality in Prespa lakes is affected by agriculture and non treatment of polluted waters. Extensive agriculture has a less harmful impact on the lake compared with the impact of non-treatment of contaminated waters. During the audit it was discovered that communication with the channel which is supplied by the Devolli River is still ongoing. This channel, supplied by Devolli River is known for the high level of turbulent water. Near to the village of Tren, all the sewage of this village with 1200 inhabitants are attached to this channel. Further, this channel continues its course towards the Micro Prespa Lake and communicates with it through two tubes of approximately 50-70 cm diameter which are located beneath the bridge. These pipes, not only enable the communication between Micro Prespa Lake and the abovementioned channel, but certain species of fish that tend to move against the current, "migrate" from Micro Prespa Lake toward this channel. Ministry of Agriculture, Rural Development and Water Administration (MARDWA) has no concrete plan / strategy for improving the waters of Prespa National Park and protecting their ecological quality. It does not have any inventory for the number of water wells owned by Prespa Park residents.

Cooperation

²⁰ Pasuritë ujore të Shqipërisë, Pano. N., 2015, pg 314

Another important addressed issue on this audit was the level of cooperation between the central and local institutions to which the law provides competencies for the administration of the Prespa National Park. Generally, this cooperation has been insufficient (with the exception of several cases) for the normal performance of institutions' work. Thus, relations between Municipality of Pustec and the Ministry of Environment and NAPA (National Agency of Protected Areas) have continued to be non-cooperative even after the drafting and approval of the Management Plan. It is worth mentioning the fact that until today Municipality of Pustec, as well as the Municipality of Devoll, do not yet possess a physical copy of MPPNP (Management Plan of Prespa National Park), while this plan charges these municipalities with serious duties and responsibilities. Local-central cooperation is essential as regards uncontrolled forest cutting, uncontrolled hunting and fishing, water resources conservation, urbanization, urban waste management and water discharge.

CONCLUSIONS

The present situation of the Prespa National Park is the result of constant pressure from the last few decades by citizens and inadequate management of responsible institutions. It's been 17 years since the creation of this park, but the problems are almost the same. Unsustainable exploitation of forests, uncontrolled cutting of firewood and in some cases for illegal trading, illegal hunting and fishing, non-management of urban waste and sewage, and the non-cooperation between institutions are the main identified problems. However, some of the threatening factors of ecosystem deteriorating have been reduced and forests have the opportunity to recover if it will be taken into account the recommendations left by this audit. The institutions involved in the management of the NPP have not implemented all the objectives of the Management Plan, starting with firewood management, fishing management, illegal hunting, etc. Concretely:

- Administration of Protected Areas (APA) in Korça has not fully implemented the objectives of the MPPNP regarding forest management.
- MARDWA has not declared the co-management zone in Prespa lakes and as a result all fishermen from 2013 until today have functioned as illegal.
- The performance of Municipality Pustec and Devoll regarding waste management has been affected by its three principles (economy, efficiency and effectiveness). Municipality of Pustec and Devoll for several years do not perform waste management in accordance with law no. 10463 “For Integrated Waste Management”, by throwing and burning them or by letting themselves burned in open space. The same happens with the discharge of sewage into the Prespa lakes and their filtration into groundwater which subsequently pollutes the agricultural lands and end up in the watershed of Prespa Lakes.
- The use of water resources through water wells is totally out of control and monitoring by the Directorate Water Resources Policy and the Water State Inspectorate. They have no data on the amount of water used by local residents or businesses, the exact number and location of these water wells.

RECOMMENDATIONS

- NAPA through APA in Korça, in cooperation with all subjects under this audit, should establish a better approach to the strict implementation of the MPPNP objectives. The implementation of these objectives will increase and will further affect the conservation of Prespa National Park ecosystem as well as improve environmental parameters. According to the responsibilities and competences given by the laws of Albania, the main task and challenge remain the treatment of urban wastewater, integrated management of urban waste, and sustainable forest management by increasing the control of firewood cutting by residents. Last but not least, more should be done on residents' awareness for the importance of Prespa National Park and the unique values it represents.

REFERENCES

- Indikatorë të Performancës, Leskaj B. & Muça R., KLSH, 2015.
- Udhëzues i Auditimit të Performancës ISSAI 3000 dhe 3100, KLSH, 2015.
- World Commission on Environment and Development (WCED). 1987 *Our common future*
- National Audit Office of Estonia & University of Tartu, 2016, Introduction to Environmental Auditing in the Public Sector
- Plani i Menaxhimit të Parkut Kombëtar të Prespës 2014-2024
- Compedium of the Management Plan of the Prespa National Park, 2013.
- Plani Kombëtar i Menaxhimit të Mbetjeve të Ngurta Urbane, CO Plan 2010.
- Plani i Mbledhjes së Mbetjeve, Bashkia Pustec, KFW KRWM, 2016.
- Pasuritë ujore të Shqipërisë, Pano. N., 2015.
- An inventory of biodiversity indicators in Europe, European Centre for Nature Conservation, European Environment Agency, 2002.
- Cost-Benefit Analysis and the Environment, OECD, 2006.
- Cost Benefit Analyses of the introduction of the weight-based charges for domestic waste – West Corks Experience, Sue Scott & Dorotty Watson, 2009.
- A Study on the Economic Valuation of Environmental Externalities from Landfill Disposal and Incineration of Waste, European Commission, 2000.
- Solid Waste Managment Baling Scheme Economics Methodology, Jan Steinis, William Hogland Mars 2011.
- Environmental and Natural Resources Economics, Tom Teitenberg, 2012
- A study on quantity and quality of leachate of Matuail sanitary landfill, S. Bhuyan, 2010.
- Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997.
- DEFRA – Department of Environment, Food and Rural Affairs.
- IPCC - International Panel Climate Change 2006.
- IPCC Good Practice Guidance and Uncertainty Management National Greenhouses gas Inventaries.