



Republic of Montenegro
Ministry of Tourism and Environment

Ministry of Tourism and Environment, Montenegro
Ministry of Environment, Forest and Water Administration,
Albania



ENVIRONMENTAL IMPACT ASSESSMENT
OF
LAKE SKADAR/SHKODRA INTEGRATED ECOSYSTEM
MANAGEMENT PROJECT

Final Report

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LIST OF ABBREVIATIONS

Albania	Al
APAWA	Association for Protection of the Aquatic Wildlife of Albania
BESAP	Biodiversity Strategy and Action Plan
COOPI	Cooperazione Internazionale
COSPE	Cooperation for the Development of Emergent Countries
CSDC	Civil Society Development Centre
CTR	Council of Territorial Regulation
EA	Environmental Assessment
ECENA	The Environmental Compliance and Enforcement Network for Accession
EMP	Environmental Management Plan
EU	European Union
FMO	Fishing Management Organization
GEF	Global Environment Facility
GoA	Government of Albania
GoMN	Government of Montenegro
GTZ	German Technical Cooperation
IMPEL	Implementation and Enforcement of Environmental Law
IPPC	Integrated Prevention and Pollution Control
LEAP	Local Environmental Action Plan
LG	Local Government
LSIEMP	Lake Skadar/Shkodra Integrated Ecosystem Management Project
MAFPC	Ministry of Agriculture, Food and Protection of Consumer
MEFWA	Ministry of Environment, Forests and Water Administration
MN	Montenegro
MoU	Memorandum of Understanding
MoTE	Ministry of Tourism and Environment (Montenegro)
NCW	National Council of Water
NEAP	National Environment Action Plan
NES	National Environmental Strategy
NGO	Non-Governmental Organization
NPO	Non-profit organization
NSSD	National Strategy for Sustainable Development (Montenegro)
OG	Operational goal
REA	Regional Environment Agency
REC	Regional Environmental Center
RM	Republic of Montenegro
SA	Social assessment
SAP	Strategic Action Plan
SDC	Swiss Agency for Development and Cooperation
SEA	Strategic Environmental Assessment
SME	Small and Medium size Enterprises
TDA	Transboundary Diagnostic Analysis
TOR	Terms of Reference
UNDP	United Nations Development Program
WB	World Bank
WFD	Water Framework Directive

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EXECUTIVE SUMMARY

This is the Environmental Impact Assessment of the Lake Skadar/Shkodra Integrated Ecosystem Management Project. The EA has been prepared in compliance with the World Bank EA requirements on projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus improve decision making (OP 4.01, January 1999).

The project as such has been defined and described, and an input to the final design has been given in the joint Strategic Action Plan for Skadar/Shkodra Lake, Albania & Montenegro, where jointly agreed activities of each component have been described. However, the assessment of the subcomponents has not been completed, and for this reason the EA/EMP will be a framework EA/EMP, providing procedures to follow, when the project is ready for implementation.

The policy, legal, and administrative framework in Albania and Montenegro has been described, and proper EIA legislation is in place in both countries. When comparing the WB guidelines with the EIA legislation of the respective countries, only two specific differences have been identified. Projects in category “A” according to the Bank guidelines will need two public hearings/consultations, while they only need one according to the legislation of Albania and Montenegro. This specific requirement should be taken care of by the respective ministries, or whom they have delegated it to, by arranging an extra hearing/consultation, if any of the activities of the project will be categorized as Category “A”. Furthermore, projects categorized as Category “B” according to the WB guidelines do not require any public hearings according to the national legislation in Albania and Montenegro, as they do according to the WB guidelines, where they also require preparation of an Environmental Management Plan. Also this will have to be taken care of by the respective ministries, or whom they have delegated it to, by preparing an EMP and arranging a hearing/consultation for subprojects categorized as Category “B”.

The *overall objective* of the Lake Skadar/Shkodra Integrated Ecosystem Management Project is to assist the Governments of Albania and Montenegro in achieving more sustainable use of the natural resources of Lake Shkodra and its watershed. The *global environmental objective* of the project is to reduce pollution and conserve the lake and its biodiversity as an internationally important natural habitat, especially for water birds. The project will achieve its objectives through three pillars: (i) establishing and strengthening national and transboundary institutions, systems and capacity for effective ecological management; (ii) creating an enabling environment for local and national authorities to improve environmental regulation by building public awareness and support, and by helping local residents and businesses comply with the requirements; and (iii) helping to eliminate or reduce some of the most urgent existing threats to the Lake’s ecosystem.

The Project consists of four components, A, B, C, and D: Component A: Coordinating Lake Management. This component will help to put in place an institutional structure for coordinating protection and management of Lake Skadar-Shkoder and its natural resources. Component B: Monitoring and Research: This component will support Technical Assistance, training, the purchase of equipment and incremental operating costs (on a declining basis) needed to put in place a permanent joint monitoring system, guided by management requirements and by the parameters outlined in the EU Water Framework Directive and the Ramsar Convention. Component C: Protected Area and Natural Resources Management. Ensuring that natural resources are used sustainably and limiting their ecological impact is an essential and challenging part of PA management and is an important long term strategic goal for Lake Skader-Shkoder in both countries. Component D: Urgent Environmental Investments . The project will provide financing to help remediate some hotspots which are identified as high priority in the joint SAP.

Environmental impacts and mitigative actions

Component A:

Taking into account that there are no physical activities in Component A, just strengthening of legal and institutional framework, establishment of working groups, etc. no negative environmental impacts have been identified.

Component B:

Component B will deal with monitoring and research, and no negative impacts have been identified. As the monitoring and research activities will be designed by environmental scientists, it must be a prerequisite that these activities will not be harmful to the environment. Monitoring stations are supposed to be chosen with proper concern for the environment and disturbing as little as possible any nesting or spawning sites for birds and fish. The positive environmental impact of the more systematic monitoring of the lake is that detection of sudden higher levels of certain chemicals or detrimental effects will be discovered, and be brought to the attention of decision-makers in the two countries at an early stage. Another positive impact is that the scientist can report on the environmental health of the lake on a regular basis, creating awareness of the importance of protecting its fragile ecosystem.

Component C:

Component C entails activities that could potentially be harmful to the environment. Some of the proposed activities are classified as Category B according to the World Bank Classification system. These are the following: 1) Creation of well-marked bicycle and hiking trails, 2) Construction of bird observation platforms, and 3) creation of two visitor centers.

The potential Environmental impacts of making bicycle and hiking trails and their mitigating measures in national parks and nature parks are the following:

Creation of well marked bicycle and hiking trails	
Potential environmental impact	Mitigation measures
Vegetation clearance, including possible removal of trees and shrubs	<i>Construction phase:</i> Clearing the vegetative cover will be necessary in some locations. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before forming the trails.
Destruction of habitats for endemic plants and animals.	<i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for trails should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The trails should be placed, where any impact is minimized, without destroying the purpose of the trail.
Elevated noise level and disturbance of nesting birds	<i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with trail development. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons. <i>Operation phase:</i> Once the initial trail development is over, the level of noise should be barely noticeable as hikers disperse and use the system.
Potential problems with litter from tourists using the bicycle and hiking trails	<i>Operation phase:</i> Litter bins can be placed at regular intervals along the trails and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.
Providing easier access to prohibition zones of the lake	<i>Operation phase:</i> In some cases it might be necessary to fence the prohibition zones on land, as well as putting warning signs and mark the prohibition zones with signs. Furthermore, the rangers should control the trails with regular intervals and maps in the park regulations should indicate placements of prohibition zones.
Soil instability or changes in geologic substructure, disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility	<i>Operation phase:</i> A minor amount of soil displacement will occur due to the trail construction. Soil disturbance should be minimal and mitigated by erosion control devices and the inclusion of switchbacks and meanders on steep slopes. The trail could result in some compacted, less-productive soil where it is being used. If further damage occurred during construction, that area could be reseeded with e.g. a native grass mix.
Introduction and spread of noxious weeds	<i>Operation phase:</i> The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed trail areas, trail completion could actually assist park employees in their control by allowing easier access into the affected areas.
Fecal contamination of surrounding areas	<i>Operation phase:</i> Latrines should be constructed at suitable places along the trails and a system for cleaning at regular intervals should be set up.

Concerning construction of well-marked bicycle and hiking trails, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the bicycle and hiking trails are planned and designed. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). Hiking and bicycle trails are not mentioned specifically in the Albanian and Montenegrin laws on national parks, but have to be treated as “construction”. The proposed construction of bicycle and hiking trails also has to be consistent with PA management plans and spatial plans in Montenegro.

The potential Environmental impacts of constructing bird observation platforms in national parks and nature parks are the following:

Construction of bird observation platforms	
Potential environmental impact	Mitigation measures
Potential destruction of habitats for endemic plants and animals.	<i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for bird observation platforms should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the platforms should be chosen with care, minimizing the potential negative impacts, without destroying the purpose of the observation platforms.
Elevated noise level and disturbance of nesting birds	<i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with platform construction. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons. <i>Operation phase:</i> There will be an elevated noise level in the operation phase as well, which makes the choice of location of the observation even more important. When maintained, colours matching the background, without light reflecting surfaces should be used for the construction.
Vegetation clearance, including possible removal of trees and shrubs	<i>Construction phase:</i> Clearing the vegetative cover will be necessary at the chosen locations for the platforms. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before constructing the platforms.
Potential problems with litter from tourists using the bird observation platforms	<i>Operation phase:</i> Litter bins should be placed at the bird observation platforms, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.
Providing easier access to prohibition zones at the banks of the lake	<i>Operation phase:</i> In some cases it might be necessary to fence the prohibition zones on land, as well as marking the prohibition zones with signs. Furthermore, the rangers should control the bird observation platforms with regular intervals and maps in the park regulations should indicate placements of prohibition zones.
Risk of contamination of soil during maintenance of platform (cleaning and painting) and leakage of impregnation substances from wooden building materials	<i>Operation phase:</i> During maintenance of the platform, spills of the impregnating substances should be collected by plastic covers on the ground or foundation of the platform. If made of wood, not freshly impregnated wood should be used, but reused or reutilized wood where leakage of impregnation substances is minimal, as some substances in impregnation are toxic to the environment.
Establishment or spread of noxious weeds	<i>Operation phase:</i> The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed placement of the platform, platform completion could actually assist park employees in their control by allowing easier access into the affected areas.
Fecal contamination of surrounding areas	<i>Operation phase:</i> Latrines could be constructed at each bird observation platform and a system for cleaning at regular intervals should be set up.

Concerning construction of bird observation platforms, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the construction of bird observation platforms is planned. This means that prior to any

implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environmental Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). The proposed construction of bird observation platforms also has to be consistent with PA management plans.

- ③ As mentioned, the Skadar Lake National Park in Montenegro has already four bird observation towers and one platform constructed with assistance from GTZ, and experiences gained might be useful in Montenegro in this context.

The potential Environmental impacts of constructing visitor centers in national parks and nature parks and their corresponding mitigation measures are among others the following:

Construction of visitor centers	
Potential environmental impact	Mitigation measures
Contamination of surroundings during construction with all types of construction waste (building materials, packaging, solvents, paints, plastic, etc.)	<p><i>Construction phase:</i> A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.</p>
Destruction of habitats for endemic plants and animals	<p><i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for visitor centers should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the centers should be chosen with care, minimizing the potential negative impacts. The visitor centers do not have to be placed close to prohibition areas but should be placed near access roads, as parking should be available for visitors.</p>
Elevated noise levels and general disturbance, depending on site	<p><i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with center construction. Construction should occur during non-peak visitor use or on weekdays when visitors are fewer. Other mitigation measures are not necessary.</p> <p><i>Operation phase:</i> There will be an elevated noise level in the operational phase as well, which makes the choice of location of the visitor center important. No mitigation measures are necessary, but it could be mentioned in the park regulations that noisy behaviour is generally not accepted inside the park and destroys the chances for observing wildlife at close range.</p>
Potential problems with litter from tourists using the visitor centers	<p><i>Operation phase:</i> Litter bins should be placed at the visitor center, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined</p>
Problems with domestic waste water from toilets at the centers, if no proper sanitation solutions have been installed, providing bad examples for local inhabitants and restaurants.	<p><i>Operation phase:</i> The visitor centers should be equipped with proper sanitation facilities, taking care of domestic waste water. It can either be in the form of a mini waste water treatment plant, as installed in the existing visitor center in Skadar Lake National Park in Montenegro, or a modern septic tank. If a septic tank solution is chosen, a system for emptying the tank should be set up, transporting the sludge to a proper disposal site outside the park.</p>

Concerning construction/extension of two visitor centers, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the construction of bird observation platforms is planned. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). Construction is mentioned in both Albanian and Montenegrin laws on national parks. The proposed construction of visitor centers also has to be consistent with PA management plans. The details are mentioned under the respective descriptions of the environmental legislation in Albania and Montenegro.
- ③ As mentioned, the Skadar Lake National Park in Montenegro has already four bird observation towers and one platform constructed with assistance from GTZ, and experiences gained might be useful in Montenegro in this context.

Component D:

Component D entails activities that could potentially be harmful to the environment. One of the proposed activities is classified as Category “A” according to the World Bank Classification system, namely the one regarding clean-up at KAP. The other is classified as Category “B”. The activities are the following: 1) Removal or containment of hazardous waste at the KAP aluminium plant site, and 2) Support to wastewater treatment facilities for small lakeside villages and isolated restaurants. Each of these activities will be addressed below.

The potential Environmental impacts and environmental issues of removing or contain hazardous waste at the KAP aluminum plant site are among others the following:

Remediation of hazardous waste at KAP	
Potential environmental issue and impact	Mitigation measures
Determination of content and amounts of waste	<i>Preparation phase:</i> Pre-investigation or technical feasibility study, determining content and amount of waste, including options for removal and design of hazardous waste landfill. Any placement of the landfill will have to be consistent with the Spatial Plan for Podgorica Municipality
Movement of hazardous waste will create dust and spread the contaminated soil to adjacent land.	During the movement of the contaminated soil, modest spraying with water can be done, if dust is a problem. The waste is not considered a serious health hazard, but the proposed pre-investigation will determine the type of mitigation necessary.
In case of movement in a season with increased precipitation, increased leakage of contaminants to groundwater and subsequently to the river and from there to the lake	<i>Construction/preparation phase:</i> It is proposed to do the movement in the months with lesser precipitation, e.g. during the spring and summer. If water is still a problem, water leaking to the bottom of the excavation can be pumped to a tanker, which should be emptied at a place, where the water will not go to the lake
In case of capping with impermeable membrane, risk for spreading to adjacent land and the river in case of flooding or landslide	According to information from Montenegro, the risk for flooding is very modest. It should be possible to avoid landslides by proper placement of the landfill.
Contamination of groundwater resulting from leachate that can leak through the liner system.	<i>Operation phase:</i> A leachate control system should be put in place, with regular monitoring of leachate
Consistency with the overall land-use planning in the area.	The Municipality of Podgorica should be part of the preparations for the pre-investigation, and they should ensure that the placement of the landfill will be consistent with the spatial plan for Podgorica.
Landfill not large enough to accommodate the hazardous waste from KAP for a reasonable time (10 to 30 years).	Allocation of sufficient land for landfill. Depends on reliable production figures from KAP and whether others than KAP will be allowed to use the landfill for hazardous waste disposal.

Based on the above mentioned potential environmental impacts, the following is recommended:

- ③ Terms of Reference for a pre-investigation should be prepared by the involved authorities in Montenegro or the Project Secretariat, or a consultant hired by it. The outcome of the pre-investigation should be a project document or technical feasibility study living up the requirements for project description under

the EIA Law of Montenegro, which will be in force from January 2008, concerning documentation. Any existing documentation concerning the hazardous waste should be collected and analyzed and if necessary translated to English, before or during the pre-investigation, constituting a so called zero state study. Furthermore, this technical feasibility study should live up to the requirement of the World Bank, as their approval is equally important.

- ③ The developed project description should be used for an application of approval to the Ministry of Tourism and Environment and follow the normal EIA procedures, and likewise be submitted to the World Bank. Movement of hazardous waste and construction of a landfill for hazardous waste is on the list for preparation of a mandatory EIA study according to the Law on EIA in Montenegro. An extra hearing/consultation apart from the obligatory one according to the Montenegrin EIA Law should be initiated by the implementing ministry or somebody whom it has been delegated to, as soon the project description is ready in order to live up the WB requirements for Category “A” projects.
- ③ Most likely, expertise for this kind of remediation and construction of landfills for hazardous waste is not present in the Ministry, as no landfills for hazardous waste to date has been constructed in Montenegro or Serbia. It is therefore recommended that international expertise should be used for that part of the pre-investigation.
- ③ If the EIA study is approved, implementation should be initiated according to the conditions given by the Ministry of Tourism and Environment, including monitoring requirements. Furthermore, the EIA study should be approved by the World Bank, and an Environmental Management Plan should be prepared. The Ministry will be responsible for monitoring the implementation.

The potential environmental impacts of discharging untreated wastewater from small lakeside villages and isolated restaurants and their respective mitigation measures are among others the following:

Treatment of wastewater from small lakeside villages and isolated restaurants

Potential environmental issue and impact	Mitigation measures
Contamination of surroundings during construction with all types of construction waste (packaging, solvents, paints, plastic, etc.)	A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.
Contamination of the lake with domestic waste water, containing fecalia, pathogens and contaminants (e.g. detergents, disinfectants, chlorine, etc.)	Different solutions for treating wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks. If septic tank solutions are used, a system for emptying the tanks should be put in place.
Destruction of recreational values because of odours, tainting of the water at outlets, etc.	First of all, an environmental awareness campaign is necessary in order to stop new construction projects on primarily the Albanian side of the lake. Secondly, the local environmental authorities on both sides of the lake prepare a prioritization list of possible projects, pinpointing hotspots
Health risks near outlets	The local environmental authorities on both sides of the lake should see to it that the future monitoring programmes analyse water samples for E. coli and coliforme bacteria in order to be able to give the public information on health risks in the lake
Oxygen depletion because of high organic content in waste water	Oxygen content should as part of the future monitoring programmes be measured on a regular basis
Eutrophication because of high phosphorus content of waste water	As mentioned above, different solutions for treating the wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks.

Concerning construction of treatment facilities for wastewater from small lakeside villages and isolated restaurants, the following can be recommended, taking into account the mentioned potential environmental impacts and proposed mitigation measures:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the feasibility studies for small lakeside villages and isolated restaurants are prepared and prioritized. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6).

Wastewater treatment is not mentioned specifically in the Albanian and Montenegrin laws on national parks, but has to be treated as “construction”. The proposed construction of smaller wastewater treatment facilities also has to be consistent with PA management plans and spatial plans in Montenegro.

- ③ Terms of Reference for feasibility studies are prepared by the project secretariat, which goes through the different options for wastewater treatment for small lakeside villages and isolated restaurants, living up to both national legislation and EU legislation (The EU Directive concerning Urban Wastewater (91/271/EC) and EU Water Framework Directive). Based on that, a number of subprojects with proper documentation should be designed by the Project Secretariat or consultants recruited by it taking into account the economic frames set, using the recommended options. Criteria for selection, including e.g. possibilities for owners to co-finance, should be prepared.
- ③ For the selected projects, the EIA procedures for the respective countries should be followed, taking into account the proposed mitigation measures. As the projects might have a potential for Transboundary pollution, a common procedure based on the MoU between the two countries and following Espoo principles should be established. As usual, the selected projects should also be assessed according to the WB classification system, and apart from the EIA study, an EMP should be prepared, if they are classified as belonging to category “B”.

Analysis of alternatives

No alternatives were identified for Component A. The ‘without project’ scenario would not improve transboundary cooperation concerning protection and exploitation of natural resources of the lake, and it is not considered a good alternative.

No alternatives were identified for Component B. The ‘without project’ scenario will not bring any benefits, as an overall monitoring programme will not be brought in place and it will not be possible to describe the ecological and environmental situation of the lake properly and take actions accordingly.

There are several alternatives for Component C regarding placements of bicycle and hiking trails, bird observation platforms and visitor centers.

It can always be discussed how massive the interventions should be, and how close to nesting sites of the birds, the observation platforms and bicycle and hiking trails should be placed. It will probably not bring a lot of visitors, if all observation platforms and towers are far away from the nesting sites, and only professional ornithologist with strong binoculars will be able to see the birds. Furthermore, it can be considered to camouflage some of the platforms colourwise, and even coat their interior with noise dampening material and put roofs on. It is therefore suggested that some of the platforms should be relatively near to some of the nesting sites of some of the birds, and that restrictions should be made at certain times of the year, if negative effects are discovered. The placement of the visitor centers on the other hand, does not have to be close to nesting birds. Rather they should be placed at the edge of the park, close to access roads, and with parking possibilities. Here it is considered more important that the pollution resulting from the center is minimal (that wastewater is treated, and waste collected), and that options for refreshments and parking are available.

The ‘without project’ alternative will not meet the objective of developing tourism, as it probably will stay at the same level, as it is now or even lower, if the public gets the impression that the parks on either side have nothing to offer. It will not create awareness of the value of protecting the lake and might in the long term be negative for the development of activities around the lake.

There are several alternatives for Component D, and a few will be mentioned here. The component aims at providing financing to help remediate some hotspots which are identified as high priority in the joint SAP.

Concerning the concrete activities proposed under Component D, they are still rudimentarily described, but it is mentioned that the hazardous waste at KAP aluminium plant could either be contained or removed. What will be the best solution depends on the result of the proposed pre-investigation. It is possible that by far the cheapest solution might be to contain the waste at its location, but it might not take into consideration that

the factory continuously needs a storage place for its hazardous waste, and a new landfill will have to be constructed anyway.

Concerning alternatives to the proposed activities, there might e.g. be other environmental problems at KAP, besides the hazardous waste. One of the obvious aspects to consider is the huge energy consumption, and subsequent consumption of fossil fuels. An energy audit of the factory might possibly reveal that it is possible to reduce the energy consumption substantially. Another option is to investigate if any cleaner technology solutions might be available, as well as looking at the content of the emissions to air through the chimneys and the discharges to the river from the wastewater treatment plant. Another hotspot to consider is the discharge of untreated wastewater from Shkodra directly to the lake, whenever the pumping station pumping the the wastewater to the Boyana/Buna River due to power failure does not work. That is a serious and very visible environmental problem for the lake that could be addressed under this component as well.

The 'without project' alternative is not environmentally sound, as it will deteriorate the environmental situation of the lake, because 1) Contaminants from KAP will continue to leak to the river and ultimately to the lake, and 2) The small lakeside villages and already established restaurants will continue to contaminate the lake.

Procedures for environmental screening of component interventions

The procedures to be followed during project implementation by the respective ministries, who will have the overall responsibility for implementation of the project, have been described. The underlying principle of the development of these procedures would be that environmental issues are best addressed when they are made an integral part of the project cycle - in this particular case, it would be early in the project cycle for all activities to be funded under the project.

Environmental plan and monitoring

An Environmental Management Plan (EMP) must be kept as simple as possible, clearly describing adverse impacts and mitigation actions that are straight forward to implement. It is suggested that the following information be included:

- (a) **Responsible Party:** The authors who prepared the EMP along with the date of preparation.
- (b) **Project Description:** Present a brief description of the subproject. Include the nature of the investment, the location, and any characteristics of the area that are of particular interest (e.g. near a protected area, area of cultural or historical interest, sensitivity of the area).
- (c) **Mitigation Plan:** This should include a description of the steps to be taken to identify all anticipated significant effects, to mitigate the major potential impacts on land, water, air and other media during the planning, design, construction and operation phases.
- (d) **Monitoring Plan:** This should include a description of the key parameters to be monitored (including monitoring locations, schedules and responsible entities) and reporting procedures to ensure that the construction and operation of the project is in conformance with either Albanian or Montenegrin law and other relevant norms and standards, and conditions set by the WB. If such details are covered by permits or construction or monitoring contracts these can be referenced as attachments.
- (e) **Institutional Arrangements:** There should be a narrative discussion that provide a brief presentation on how the monitoring data is going to be used for sound environmental performance - who collects the data, who analyzes it, who prepares reports, who are the reports sent to and how often, what is done by the responsible authorities after they receive the information; and how is non-compliance with the EMP treated. This should also include (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.
- (f) **Implementation Schedule and Cost Estimates:** For all three aspects (mitigation, monitoring, and capacity development), the EMP provides (a) an implementation schedule for measures that must be carried

out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the EMP. These figures are also integrated into the total project cost tables.

(g) Consultations with affected groups and non-governmental organizations. The following should be included: Date(s) of consultation(s); Location of consultation(s); Details on attendees (as appropriate); Meeting Program/Schedule: What is to be presented and by whom; Summary Meeting Minutes (Comments, Questions and Response by Presenters) Agreed actions.

The EMP for the activities under the four components potentially affecting the environment in a negative way can be found as Annex 3. The EMP should be part of the Project Implementation Manual. If further activities are designed, they should be addressed and added to the EMP as appropriate.

Institutional strengthening Nature Park Administration, Shkodra.

At present, the nature park administration consists of 10 rangers. None of them have managerial experience, and according to information obtained in Shkodra the inspection level is low, and job descriptions for their tasks probably do not exist. A director for the park has not been appointed yet. The park administration is supposed to be in charge of the daily operation of the park, and enforcement of the regulations for the park, when prepared. Furthermore, it is foreseen that part of the inspection of on-going activities in the park will be done by the park administration.

It is recommended that:

- ③ A manager is appointed as soon as possible and that regulations for the park are prepared accordingly.
- ③ The employed rangers will get training courses matching their tasks, including training in enforcement of regulations in force in the nature park, such as actions against illegal fishery, illegal construction, illegal disposal of waste etc. The training should be conducted in cooperation with the Regional Environment Agency Shkodra.

Regional Environmental Agency Shkodra

The agency has an important role in issuing and monitoring permits for construction within the nature park and screening EIA projects in the region, before submitting them to the Ministry in Tirana. Other approved EIA projects in the region are also inspected by the REA. It is the perception that the agency is not very visible in Shkodra, and the project could enhance this, by providing training in environmental auditing and inspection.

It is recommended that:

- ③ The project should support training for staff of the agency in environmental auditing and inspection.

University of Shkodra

The university has got the specialists necessary for doing most of the monitoring of flora and fauna in the lake. Concerning measurements of physico-chemical parameters, which might have to be measured quite often, it is not considered a good idea to involve the University of Shkodra, as they because of their lectures generally have difficulties in finding much time for such activities. Anyhow, they should be part of the working group designing the overall monitoring programme, which should be in accordance with the preparation of surface water status for lakes in the EU Water Framework Directive (2000/60/EC, Annex V).

It is recommended that:

- ③ The University of Shkodra should be involved in the monitoring of the flora and fauna of the lake and the design of the overall monitoring programme for the lake, in accordance with the EU Water Framework Directive (2000/60/EC, Annex V).

University of Tirana, Faculty of Natural Sciences

The university should assist the University of Shkodra in some of the disciplines required for monitoring of the freshwater invertebrate fauna of the lake, as they have a broader range of expertise and has more staff than the corresponding faculty in Shkodra. Furthermore, the university could be involved in the measurements of heavy metals and organic chemicals, if the monitoring programme is ready, before the Hydrometeorological Institute has the necessary expertise.

It is recommended that:

- ③ The University of Tirana assists the University of Shkodra in monitoring the fauna of the lake, e.g. on monitoring of freshwater invertebrates and fish
- ③ The University of Tirana assists in monitoring organic chemicals and heavy metals, if the Hydrometeorological Institute is not having the necessary expertise in place, when the monitoring starts.

Hydrometeorological Institute of Academy of Sciences, Tirana

The Hydrometeorological Institute has been assessed to be the institution best positioned to do the monitoring of heavy metals and organic compounds on the Albanian side of the lake. The institute is at the time receiving support by an EU project (**Strengthening of the Environmental Monitoring System in Albania, StEMA**), providing them with all necessary equipment as well as training, and they have environmental monitoring as a core task for the institution.

It is recommended that:

- ③ The Hydrometeorological Institute should be involved in the design of the overall monitoring programme for the lake, and they should in the future be the main institution responsible for monitoring of heavy metals and organic compounds. Until they are ready to take up the task, technical assistance should be given to the institute by the University of Tirana, Faculty of Natural Sciences.
- ③ It is recommended that the institute participates in intercalibration with other laboratories in the region, as soon as they master their new equipment. Furthermore, it is recommended that they get accreditations for analysis of heavy metals and a number of relevant organic pollutants.

Public Enterprise National Parks of Montenegro

This institution under the Ministry of Tourism and Environmental Protection is in charge of the four national parks in Montenegro, and also the competent authority regarding environmental protection in the parks. The management of the Skadar Lake National seems to be performing very well, and is the only national park in Montenegro that has been able to create a financial surplus on their activities. The park administration has the role of inspecting all on-going activities in the park, including construction activities.

Nature Protection Institute

This institute has relevant expertise regarding monitoring of flora and fauna in the Montenegrin part of the lake. It is not under the Ministry of Tourism and Environment, but under the Ministry of Culture. It has a very low budget for monitoring of flora and fauna in the whole of Montenegro, only around EUR 12,000 per year. It has relevant experience from the lake and has been cooperating with University of Shkodra on the monitoring of biota.

It is recommended that:

- ③ The Nature Protection should be participating in the process of designing the overall monitoring programme of flora and fauna for the lake, and also be an active partner in the future monitoring, along with staff of the Skadar Lake National Park staff.
- ③ It is recommended that the project finances the participation of the institute in the monitoring of the lake, at least for the first two years.

Public Institution “Center for ecotoxicological research”

The center has high expertise in analysing pollutants in different media and is considered an asset for Montenegro in environmental monitoring. The center has accreditations for several analyses and participates

on a regular basis in intercalibrations with other European laboratories. It has been doing analyses on samples from the lake and has also been training other institutions in the region. Furthermore, the center is working for KAP Aluminium Plant on a commercial basis, and has a good knowledge of the environmental problems in the country.

It is recommended that:

- ③ The center should be involved in the design and implementation of the overall monitoring programme for the lake of physico-chemical parameters, heavy metals, and organic chemicals.
- ③ The center is probably the only one in the region that will be able to do the pre-investigation of the hazardous waste land fill at KAP and should be used for that purpose.
- ③ The analyses of samples to be done at KAP should be done by the center.
- ③ The staff of the center may be used as trainers for the other monitoring institutions in Montenegro

Hydrometeorological Institute

The institute has relevant expertise in environmental monitoring, but still needs more equipment for heavy metals and organic chemicals and training in using it. The economy of the institute is very modest, and they have only funding for monitoring the lake in the summer months of the year. The institute should be involved in the preparation of the design of the overall monitoring programme, and should be responsible for measurements of physico-chemical parameters. In the future they could be seen as the responsible institution for measurements of all physico-chemical parameters.

It is recommended that:

- ③ The institute should be involved in designing the overall monitoring programme for physico-chemical parameters for the lake, and at this point be involved in the measurements of basic physico-chemical parameters in the Montenegrin part of the lake. In the longer term, when capacity building has been made and proper equipment purchased, the institute might also be responsible for measurements of heavy metals and organic chemicals.

Management arrangements

A possible management arrangement for the project is suggested, including staffing of the project secretariat, the establishment of a project steering committee, composition and basic tasks.

1. INTRODUCTION

1.1 Background

Lake Shkodra/Skadar is a karstic lake of Neolithic origin. It is the largest lake in Balkans with a surface area that varies from about 370 to 540 km². Its watershed area is estimated to about 5,490 km², with about 80 % of this area in Montenegro and 20% in Albania. The lake is shallow, with an average depth of about 3 meters. The Moraca River in Montenegro is the largest tributary to the lake. Its average discharge is about 200 m³/s. Significant additional flows come from groundwater flows and springs that discharge in the northern part of the lake. The lake drains to the Adriatic Sea through the Boyana/Buna River. The estimated outflow is about 330 m³/s. In an 1846 storm, the River Drini diverted its primary channel into the Boyana/Buna River a few kilometres South to its origin in Skadar/Shkodra Lake. The massive amounts of sediment this catastrophic change brought to the Boyana/Buna River raised the channel bed substantially and increased the water residence time in Skadar/Shkodra Lake. The resulting increase in water level in the lake flooded the surrounding lowlands and has maintained a higher lake level since that time. Currently water residence time is about 120 days.

The lake is a wetland site of international importance. It has a unique and rich flora and diverse fauna that includes numerous endemic species. It is one of the most significant wintering sites for water birds in Europe, including many species that are globally threatened. Ninety percent of the bird species are migratory. The lake has a diverse fish community with high productivity. Fishing is an important source of income for the local population in both countries. The Albanian side of Lake Shkoder/Skadar is proclaimed “Managed Natural Reserve” and is classified within the fourth category of protection, according to the IUCN classification system. In Montenegro the lake is proclaimed “National Park” and belongs to the second category of protection, according to the IUCN classification system. The lake has been declared as a Ramsar site by both countries (Ramsar Convention).

The proposed project area consists of the lake itself and immediately surrounding areas. The total population of the project area in Albania is about 170,000, living in seven municipalities and rural communes, within three Regions of the Shkodra District. In Montenegro, the lake and immediate surroundings fall entirely within the Lake Skadar National Park, which includes parts of the territories of three municipalities, with a population of about 250,000 in the watershed area. The population living within the park itself is about 12,500 people, distributed in 17 small settlements. The recent economic history in the project area reflects that of the two countries as a whole, with severe economic decline during the 1990s accompanied by the collapse of many industries and large agricultural enterprises within the watershed. While creating hardships for the population, this has had a positive impact on the lake ecology through decreased industrial pollution. Both governments are now seeking to revive the economic base in the area, with tourism proposed as a major economic driver.

There is at present an important window of opportunity to put in place a strategic, coordinated planning for the Lake Skadar-Shkodra basin. Both governments are striving to harmonize their policies, legislation and practices with European Union instruments, such as the Water Framework Directive which sets standards for water quality and calls for integrated watershed management and Transboundary cooperation. A Memorandum of Understanding (MoU) between the two Ministries of Environment was signed in 2003¹. The MoU calls for joint

¹ Memorandum of Understanding for Cooperation in the Field of Environment Protection and Sustainable Development Principle Between the Ministry of Environment of the Republic of Albania and the Ministry of Environment and Physical Planning of the Republic of Montenegro

monitoring of air, water and soil quality and pollution, cooperation in environmental impact assessment, common strategies for clean industrial and energy development, cooperation for protection of the natural environment, creation of joint regulation for controlling international commerce of industrial and toxic wastes, other dangerous substances and endangered flora and fauna, joint educational and training activities, and creation of working groups and an Action Plan for implementation of the MoU. Apart from activities as part of the preparations of this project, no concrete measures have yet been taken to implement this MoU aside from some collaboration between scientific institutions. The fact that both sides of the lake fall within legally protected areas, although not with the same status in both countries, is a positive factor in that it establishes environmental protection, sustainable natural resource use and ecotourism development as central management objectives for the entire area. However, capacity for protection and management of both protected areas needs to be strengthened considerably if they are to achieve these objectives. In Albania in particular, this must be done in close coordination with the local governments, which have significant responsibilities for environmental and natural resource management.

With respect to tourism, the Montenegro Master Plan for Tourism Development designates Lake Skadar/Shkodra as a tourism development zone, with cultural tourism and sailing, walking and fishing as the main potential attractions. Spatial and development plans in Albania are setting similar objectives for the area. Such tourism could be a positive force by forging an important linkage between nature and cultural protection and local and national economic interests. However, the current trend of uncontrolled construction of residences, restaurants and other facilities along the lake shore will have to be replaced by careful planning and effective regulation of tourism development.

1.2 Approach of the Environmental Assessment (EA)

The EA will be done according to the guidelines of the World Bank (WB's Operational Policy 4.01) and will cover the topics listed in the TOR, such as policy, legal and administrative frameworks in the two countries, project description, environmental impacts, analysis of alternatives, options to mitigate potential environmental impacts, procedures for environmental screening of environmental investments, the environmental management plan and monitoring. Under the environmental management plan, mitigation of potential negative impacts, institutional strengthening, and monitoring of project interventions will be described.

The project as such has been defined and described, and an input to the final design has been given in the joint Strategic Action Plan for Skadar/Shkodra Lake, Albania & Montenegro, where jointly agreed activities of each component have been described. However, the assessment of the subcomponents has not been completed, and for this reason the EA/EMP will be a framework EA/EMP, providing procedures to follow, when the project is ready for implementation. It is possible though that the final version of the project description will differ slightly, depending of the outcome of the appraisal of the project and the final agreement between the two countries and the WB.

As part of finalizing the preparations for the project, the EA of the project was initiated in the middle of February, and an international consultant was recruited. As part of the EA a field trip was made to Albania and Montenegro from the 15th of February to the 1st of March 2007. During his stay in Albania and Montenegro, the consultant consulted a number of stakeholders, in order to get a broad view of opinions on the proposed project, but not necessarily all. In Albania, the consultant met representatives from the Ministry of Environment, Forestry, and Water Administration, the Municipality of Shkodra, the LSIEMP Secretariat, the Regional

Environmental Center, University of Shkodra, the Regional Environmental Agency, the Shkodra Fishery Inspection, the Faculty of Science of the University of Tirana, the Institute of Hydrometeorology, and the EU financed project StEMA. They were all positive towards the project and offered their cooperation. No environmental NGOs were met in Albania. In Montenegro, the consultant met representatives from the Ministry of Tourism and Environment, the Municipality of Podgorica, the Center for Ecotoxicological Research, the Hydrometeorological Institute of Montenegro, the Institute for Nature Protection, the Ministry of Agriculture, Forestry and Water Management, the Kombinat Aluminijska Podgorica (KAP), the National Park Skadar Lake, and four NGOs (Green Home, Greens of Montenegro, Center for the Protection and Research of Birds, and “Nvo Godinje”). All representatives met in Montenegro were also positive towards the project, and the NGOs mentioned that it was important that the project would follow the new EIA legislation in Montenegro. A list of the people met can be found as Annex 2.

2. Policy, legal, and administrative framework (Albania and Montenegro)

This section describes the respective policy, legal, and administrative framework in the two countries. At the end of the section it is assessed whether the Albanian and Montenegrin legislations has legal instruments relating to EA, and to what extent they are in harmony with the WB’s EA procedures, or if gaps exists. Furthermore, Transboundary agreements and conventions to which the two countries are signatories will be looked at.

2.1 Policy, legal, and administrative framework in the environmental sector in Albania

The Ministry of Environment (MoE), established in 2001, is the main environmental policy-making public institution in the country. Until recently, the Ministry of Agriculture and Food, Forests and Waters had some responsibilities for environmental protection and biodiversity conservation. The General Directorates of Fishery, Forest and Pastures under this Ministry were responsible for fishing (a.o. in Lake Shkodra), national parks and protected areas. The MoE has been given the additional responsibilities of forest and water administration sectors and is now the Ministry of Environment, Forests and Water Administration.

Albania began in 1992 to develop a framework for addressing the environmental problems that have arisen during decades of industrialization and neglect. The country's Constitution provides that the republic must maintain a 'healthy and ecologically suitable environment for the present and future generations. Natural resources are to be 'rationally exploited' consistent with 'the sustainable development principle.'

Several positive developments have resulted from this constitutional directive. In 1993, the Government published its first National Environmental Action Plan (NEAP). The NEAP set Albania's environmental goals and recommended an action plan. It also identified several short-term priorities, including:

- monitoring industrial and urban pollution, including air and water pollution;
- establishing admissible pollution standards;

- halting illegal tree cutting and investing in soil erosion prevention measures;
- assessing the environmental needs of the Albanian coastline;
- regenerating severely polluted zones; and
- implementing European level environmental mechanisms.

The Law on Environmental Protection, a key framework statute, was enacted in 1993 and amended in 1998. It addresses the full spectrum of environmental policy issues. It also requires the publication of a State of the Environment (SOE) Report. The first official SOE report was published in 1995, the second in 1999.

In 1998, the Government of Albania created the National Environment Agency (NEA), which reports directly to the Prime Minister. The NEA's mission is to develop and implement Government environmental initiatives, set pollution limits, and coordinate policies with other authorities responsible for environmental protection. The NEA consists of six directorates: Directorate of Environmental Protection, Directorate of Air and Water Quality and Waste Management, Directorate of Project Implementation, Directorate of Human Resources and Services, Directorate of Environmental Impact Assessment, and Directorate of Law and Foreign Cooperation. The Agency also has twelve regional offices responsible for environmental protection, one in each prefecture and one in Tirana. The regional offices conduct inspections, review environmental permit applications, enforce regulations, and provide limited technical assistance.

The updated National Environment Action Plan (NEAP) of 2002 updated the environmental policies of the country. The NEAP was approved by the Council of Ministers January 2002 and published in the official gazette no. 3/1 of February 2002. This updated plan envisages measures to be taken for the protection of different environmental media, and normative acts to be approved. In 2003 an intersectorial committee was established for the implementation of the NEAP. This committee is chaired by the Prime Minister, and comprises 12 members, at the level of minister or deputy-minister, of the concerned ministries.

Several other Government entities have significant environmental policy roles: the Ministry of Agriculture and Food, Ministry of Transport, Ministry of Public Economy and Privatization, Ministry of Public Works, Ministry of Health, National Council on Water, Public Health Institute, Hydrometeorological Institute, Council on Territorial Adjustment and the Institute of Soils. Much greater cooperation and coordination is needed among these organizations in order to make the most efficient use of available resources, increase environmental awareness within Government, and improve environmental management efforts. Environment is still not a real priority, and environmental principles and concerns largely fail to be integrated into other sectoral policies in Albania.

The NGOs in Albania are getting momentum at the time being and are e.g. stakeholders in the EIA process, where they according the Law on EIA should be invited to the public debate. There are several in the area around Skadar/Shkodra Lake, as mentioned in the publication by REC Albania

2.1.1 Environmental legislation in Albania

Albania has made efforts during the last years in preparing a comprehensive legislative framework. The laws regarding environmental protection take into consideration requirements of international conventions and treaties and cover a whole range of protective measures. However, the challenge is not so much in the legislation, which seems to be in place, but in its

implementation and enforcement. This is due to insufficient work in producing by-laws (regulations, decisions and other normative acts), inadequate and poorly qualified and equipped local environmental structures and inspections (Regional Environmental Agencies), low environmental awareness and performance of public administration, general public and decision makers.

Activities to be carried out under the Montenegro/Albania Lake Shkodra/Skadar Integrated Ecosystem Management Project and the implementation of the Environmental Management Plan will have to conform to current laws in Albania and will be in compliance with relevant environmental laws, including the following:

- Law on “the Land” (1991)
- Law “On Seeds and Seedlings” (1992)
- Law on “Forestry and Forestry Police” (1992)
- Law on “The Service and Plants’ Protection” (1993)
- Law on “Protection of Natural Medical, Ether Oil and Tanifer Plants” (1993)
- Law on “Environmental Protection” (1993, amended in 1998 and 2002)
- Law on “Wildlife Protection and Hunting” (1994)
- Law on “Protection of Horticulture Trees” (1995)
- Law on “Fishing and Aquatic Life” (1995)
- Law on “Pastures and Meadows” (1995)
- Law on “The Regulatory Framework of the Water Supply Sector and of Disposal and Treatment of Waste Water” (1996)
- Law on “Water Resources” (1996, amended in 1998 and 2000)
- Law on “Protection of Transboundary Lakes” (2003)
- Law on “Protected Areas” (2002)
- Law on “Environmental Impact Assessment” (2003)

The Law on Environmental Protection (1993, amended in 1998 and 2002) forms the basis for environmental management in Albania. The law addresses the prevention and reduction of pollution, sustainable management of natural resources, monitoring, how to define pollution levels. It provides binding provisions for environmental impact assessment and the implementation of the polluter pays principle.

The Law on Protected areas was approved in June 2002. The purpose of the law is the declaration, preservation, administrations, management and usage of protected areas and their natural and biological resources, and regulating conditions for the development of environmental tourism, information and education of the general public and for economic activities by the local population, by the state or the private sector. The law regulates the protection of six (6) categories of protected areas, applied in the territory of the Republic of Albania. The categorization of areas, status and level of protection for each area is based on the criteria of IUCN. Lake Shkodra is in the category IV, according to the classification, and e. g. construction is allowed, if a permit is given by the competent authority, which in this case is the Regional Environmental Agency. Furthermore, any construction in national parks will have to be approved by the National and Regional Council for Territorial Readjustment, which is in charge of issuing a construction ground permit. If a management plan exists for the protected area, any permits given will have to comply with it. No management plan has been made for the Albanian side of the lake yet.

The Law on Environmental Impact Assessment was approved in January, 2003. This law defines the rules and procedures for identifying and assessing the direct and indirect impacts of projects and activities on the environment. The law establishes provisions for all of the steps necessary to implement EIA procedures: Presentation of the application, preliminary review, selection and classification criteria, public consultations, access to information, and duties and rights of other bodies. The law provides a list of activities that should be subject to an extended EIA process, such as oil and gas refinery plants, thermal power stations, smelters, exploration of oil and minerals, incinerators, with a certain capacity, etc. The other list of activities includes e. g. agricultural projects, forestry projects, aquaculture, quarries, food industries, and other activities not included in the first list. Activities listed in this annex are subject to a shortened EIA procedure. The law seems to be close to the EU Directive on the assessment of the effects of certain public and private projects on the environment (85/337/EC with amendments), and contains also provisions regarding the application of Strategic Environmental Assessment, and application of licensed specialist for preparing the EIA report. The law on EIA is considered to be a state of the art EIA law with similar requirements regarding project description, public consultations, etc. as in the mentioned EU Directive.

The law on Protection of Transboundary Lakes was approved in July 2003. The law aims at protecting transboundary lakes, by guaranteeing the appropriate conditions for the development of life and ecosystems in these lakes, and stopping activities that threaten them. The scope of the law is to protect the transboundary waters and the watersheds of the Albanian part of Shkodra Lake, the Albanian part of Ohrid Lake, and the Albanian part of the Prespa Lakes.

Albania is furthermore a signatory to the Espoo Convention since 1991. The convention stipulates the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.

Albania is also a signatory to the Ramsar Convention, and the Albanian part of Skadar/Shkodra Lake and Bojana/Buna River wetland complex have since 2005 been approved as a Ramsar site (included in the list of internationally important wetlands, especially as a waterfowl habitat).

2.2 Policy, legal, and administrative framework in the environmental sector in Montenegro

The major competence regarding environmental policy in the Republic of Montenegro is within the Ministry of Tourism and Environment, which is the body responsible for most activities concerning environmental protection. The Ministry currently has 81 employees, divided into 3 sectors: Sector for environmental protection; Sector for tourism; Sector for legal and inspection affairs. Furthermore, there are two units, responsible for European Integration and Financial matters. The Ministry has oversight over the following institutions within the environmental area: Hydrometeorological Institute, Public Enterprise "National Parks of Montenegro", and Centre for Ecotoxicological Research of Montenegro.

In 1991 the Parliament of the Republic of Montenegro adopted the "Declaration on the Ecological State of Montenegro", a commitment which is repeated in Article 1 of the Constitution of 1992: "Montenegro is a democratic, social and ecological state".

Montenegro is moving fast towards European integration and has initiated activities required for the process of stabilisation and association to the EU. The former Ministry of Environmental Protection and Spatial Planning (today Ministry of Tourism and Environment) participated in the preparation of various documents required for establishing the EU partnership, such as realization of the Action plan for Implementation of European Partnership Recommendations, participation in the Permanent Enhanced Dialogue Meetings, and preparation of quarterly and annual progress reports.

After the Johannesburg Summit in 2002, the National Council for Sustainable Development has been founded. It is headed by the Prime minister, and consists of representatives from different Ministries, business sector and NGOs. Its role of the Council is the preparation and implementation of the National Strategy for Sustainable Development (NSSD) and tasks defined in the document “The Developmental Directions of Montenegro as an Ecological State”, as well as reviewing of strategic documents on development policy, investment programs, support to public participation, and establishment of international cooperation. For purposes of implementing concrete activities, the Office for Sustainable Development was opened in 2005.

Presently, the Environmental Protection Agency (EPA) of Montenegro is in the process of establishment, and it is expected to become operational during 2007.

The EPA mandate will include:

- Environmental permitting and EIA, SEA and IPPC procedures;
- Inspection and enforcement of activities under environmental legislation;
- Collecting and processing environmental monitoring data delivered by authorized institutions, establishing environmental databases, and organizing dissemination of information and public access to it;
- Reporting related to the EU environmental *acquis*, national requirements in environmental law, and environmental agreements; and
- Publishing State of Environment reports after governmental approval and communicating all relevant environmental information to interested stakeholders, including relevant international organizations.

Furthermore, it will include communication activities, like raising public awareness, maintenance of stakeholder networks (like IMPEL and ECENA), and cooperation with the European Environment Agency in Copenhagen. In addition, establishment of the Agency will mean a strict division between the policy-making and legislative tasks that will be the responsibility of the Ministry, and the executive tasks that will be the responsibility of the Agency.

In the past period, the Montenegrin Government has endorsed several important strategic documents that define its future development in a sustainable manner. The then Ministry of Environmental Protection and Spatial Planning initiated the preparation of the NSSD. This is one of the most important strategic documents of Montenegro, as it allows compliance with and enforcement of the UN and EU directives and strategies, such as the Millennium Development Goals, Agenda 21, Johannesburg Plan of Implementation, Mediterranean strategy for Sustainable Development and European Strategy for Sustainable Development. NSSD includes an action plan that defines priority activities, measures for their implementation, timeframe and implementing bodies/partners.

The former Ministry also prepared and adopted a national policy for waste management and strategic documents for waste water management: Master Plan for Water Supply for Coastal Regions of Montenegro and Cetinje, Wastewater Feasibility Study – Coastal Region, Strategic

Master Plan for Sewage and Waste Waters for Central and North Regions, as well as the Strategic Master Plan for Waste Management on the Republic Level. Capacity strengthening of the local public utility companies is ongoing, and activities have been undertaken for the construction of regional sanitary landfills and recycling stations, and the sanitation of the water supply, sewage, and water treatment systems in several towns.

Environmental issues have been increasingly incorporated into the developmental policies of sectors other than the environmental. E.g. the Strategy of energy efficiency (2005-2006) defines activities that relevant institutions have to undertake in order to create a system of efficient energy use through promotion of renewable energy sources, minimization of environmental impacts, and promotion of energy saving schemes.

Finally, in the past few years, the capacities of the NGO sector have been increased, so the public involvement in environmental issues has risen. Through various activities and campaigns, such as the one for protection of Tara River against the construction of a hydropower plant, the NGO sector established itself as an important environmental stakeholder. Consequently, it has been included in the preparation of many strategic documents, including the NSSD.

2.2.1 Environmental legislation in Montenegro

As stated above, one of the main priorities of the Republic of Montenegro is European integrations, so it has started the process of harmonising the national legislative with that of the EU. During 2005, the Montenegrin Assembly has adopted five legal acts: Law on Environmental Impact Assessment (EIA), Law on Strategic Environmental Assessment (SEA), Law on Integrated Pollution Prevention Control (IPPC), Law on Waste Management, and Law on Environmental Noise, which are harmonized with the relevant EU directives, including those regarding public access to environmental information, public participation in decision-making and access to justice. In 2007 it is planned to adopt the Law on Air Quality, the Law on Establishment of the Environmental Fund, the Law on Protection from Ionizing Radiation and Radiation Safety, and to do the revision of the Law on Environment.

Activities to be carried out in Montenegro under the Montenegro/Albania Lake Skadar/Shkodra Integrated Ecosystem Management Project and the implementation of the Environmental Management Plan will have to conform to current laws in Montenegro and will be in compliance with relevant environmental laws, including the following:

- Law on National Parks (Official Gazette of the RM, No.47/91, 27/94)
- Environmental Law (Official Gazette of the RM, No. 12/96, 55/00)
- Environmental Impact Assessment Decree (Official Gazette of the RM, No. 14/97)
- Law on Nature Protection (Official Gazette of the RM, No. 36/77,2/89)
- Decree on Protection of Rare, Scarce, Endemic and Endangered Plant and Animal Species (Official Gazette of the RM, No.36/82)
- Law on Freshwater Fishery, (Official Gazette of the RM, No. 39/76,51/76,34/88,29/89,39/89,48/91, 4/92, 17/92, 27/94)
- Law on Waters (Official Gazette of the RM, No. 16/95)
- Decree to Prohibit the Use of Vessels with Engine Power more than 4.5 KS by Physical Persons On Skadar Lake (Official Gazette of the RM, No.9/86)
- Decision on the Level and the Method of Payment of Charges for the Use of National Parks Assets, for Conducting Economic Activities and Providing Services (Official Gazette of the RM, No.31/02)
- Law on the Protection of Cultural Monuments (Official Gazette of the RM, No.47/91)

- Law on Agricultural Land (Official Gazette of the RM, No.27/94)
- Law on Construction (Official Gazette of the RM, No.55/00)
- Law on Local Self-Government (Official Gazette of the RM, No.75/05)
- Law on Inspection (Official Gazette RCG, No.50/92).

Furthermore, the following laws will be in force from January 2008:

- Law on Environmental Impact Assessment (Official Gazette of the RM, No. 80/05)
- Law on Strategic Impact Assessment (Official Gazette of the RM, No.80/05)
- Law on Integrated Prevention and Pollution Control (Official Gazette of the RM, No.80/05).

The Law on National Parks was passed for the first time in 1991 and amended in 1994. The law defines the borders and the level of protection and allowed development measures, exploitation of resources and how the national parks should be managed. There are four national parks in Montenegro, being Bogradaska Gora, Durmitor, Lovcen, and Skadar Lake. A spatial plan has been developed for the lake, defining status, development directions, borders, exploitation regime, environmental measures, and requirements regarding construction in the parks. The Public Enterprise “National Park” is in charge of preparation and implementation of the spatial plans for the parks. Construction of tourist and health facilities and infrastructure is allowed in the national parks, if prior approval has been given by Public Enterprise “National Park”, and they are consistent with the spatial plan. Normally, construction licenses in Montenegro are issued by Ministry of Finance.

The Environment Law was passed by the Montenegrin Parliament in 1996. The Law describes the objectives and sets up the basic principles of environmental protection in Montenegro. In short, the principles are the following: 1) Conservation of natural resources, 2) Preservation of biological diversity, 3) Reduction of environmental risks, 4) Environmental Impact Assessment, 5) Alternative solutions, 6) Substitution of chemicals, 7) Re-use and re-cycling, 8) Polluter pays, 9) User/consumer pays, 10) Mandatory pollution insurance, 11) Public access and involvement, and 12) Public information on the state of the environment. The Law also sets up the general guidelines for environmental protection measures, monitoring, an environmental information system, liability of environmental pollution, environmental financing, the rights of non-governmental organisations, supervision of the law and the derived regulations, and describes penalties.

The first law on Environmental Impact Assessment was approved in 1997, but was revised in August 2005. Until the law comes into force by January 2008, the first law is still valid. The new law describes all the procedures necessary for preparing an EIA report, and also mentions that the study should be elaborated by legal persons or entrepreneurs inscribed in the appropriate registers for execution of planning and engineering activities and elaboration of studies and analyses. The law describes the type of projects subject to EIA as being projects that may have significant impact on the environment or human health, and projects in the field of industry, mining, energy production, transport, tourism, agriculture, forestry, water management and utilities. The law takes into account the EU Directive on the assessment of the effects of certain public and private projects on the environment (85/337/EC with amendments), and even uses the same definitions as the EU Directive. The GoMN has also approved the annexes describing lists of projects, for which the impact assessment is mandatory, and lists of projects for which the impact assessment may be required, in line with the EU Directive. Other regulations under this law are supposed to be finalized during 2007. All in all, the law is considered to be state of the art EIA legislation, and

basically a transposition of the mentioned EU Directive into national legislation, even though it on certain aspects is considered more stringent.

Montenegro is not a signatory to the Espoo Convention, and the status in this regard is not known. However, the issue is catered for, as Art. 30 of the EIA Law has provisions for providing all relevant information to other states whose environment could be significantly threatened by the planned project in advance, as well as any decisions taken on it. Objections raised by the other states have according to the law to be taken into account, when decisions are taken.

Montenegro is not a signatory to the Ramsar Convention, but the State Union was, and in 1995 the Skadar Lake National Park was included in the Ramsar list (wetland area of international significance) as a lake in the State Union. However, Montenegro is at the time being in the process of re-ratification and is expected to be a signatory soon.

2.3 Comparison of WB guidelines on EA with EIA guidelines in Albania and Montenegro

Above the EIA legislation in Albania and Montenegro has been examined. In order to make a comparison it is considered relevant to mention a minimum of the bank's operational policy regarding EA.

The World Bank has developed a number of Safeguard Operational Policies to ensure that all possible negative impacts are considered and mitigation measures are spelled out prior to the implementation of any proposed project. These policies ensure that the quality of operations is uniform across different settings worldwide. If the decision is taken that a Safeguard Policy should be applied, mitigation measures and plans must be developed and in place before the implementation of a proposed project. In this section the description of the system of the bank is very short. A longer description can be found in Chapter 6 regarding procedures for environmental screening of project interventions.

An EA according to the Bank's Operational Policy 4.01 evaluates a project's potential environmental risks and impacts in its area of influence, examines project alternatives, identifies ways of improving project selection, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts, and includes the process of mitigating and managing adverse environmental impacts throughout project (or subproject) implementation. During project implementation, the following need to be reported to the Bank:

- a) Compliance with measures agreed with the Bank on the basis of the findings and results of the EA, including implementation of the Environmental Management Plan (EMP), as set out in the project documents,
- b) The status of mitigatory measures, and
- c) The findings of monitoring programmes.

When comparing the WB guidelines with the EIA legislation of the respective countries, only two specific differences have been identified. Projects in category "B" according to the Bank guidelines do not require any environmental actions by the national regulations (i.e. biking paths under Component C) in Albania and Montenegro, but by the banks procedure it will require preparation of an EMP and a public hearing. Projects in category "A" according to the Bank guidelines will need two public hearings/consultations, while they only need one according to the

legislation of Albania and Montenegro. This specific requirement should be taken care of by the respective ministries, or whom they have delegated it to, implementing the project, by arranging an extra hearing/consultation, if any of the activities of the project will be categorized as Category “A”. Similarly, activities categorized as category “B”, will need the preparation of an EMP and a public hearing, if they should be financed under this project. The activity under Component D regarding the clean-up of hazardous waste at the KAP Aluminium Plant has been classified as a Category “A” activity, and the Ministry of Tourism and Environment in Montenegro will then have the responsibility of arranging and extra hearing. The timing of these consultations is proposed in Chapter 6. Apart from that, no major differences have been observed. The EIA legislation in both countries is built upon the EU legislation on EIA, which is considered an advantage because of the ambitions of both countries to be future members of the EU.

3. project description

This section will briefly present the project outline and its components. Furthermore, the strategic goals for each component agreed in the process of finalizing the Joint Strategic Action Plan prepared by Albania and Montenegro with their corresponding operational objectives and program targets will to some extent be considered.

3.1 Short Project Description

The *overall objective* of the Lake Shkoder Integrated Ecosystem Management Project is to assist the Governments of Albania and Montenegro in achieving more sustainable use of the natural resources of Lake Shkodra and its watershed. *The global environmental objective* of the project is to reduce pollution and conserve the lake and its biodiversity as an internationally important natural habitat, especially for water birds. Because of the complex nature of the lake’s problems, the project pursues an integrated approach to land and water issues, by promoting cross-sectoral cooperation throughout the watershed. The project will achieve its objectives by implementing priority measures as identified in the Lake Skadar/Shkodra Joint Strategic Action Plan prepared jointly by both countries.

The project will achieve its objectives through three pillars: (i) establishing and strengthening national and transboundary institutions, systems and capacity for effective ecological management; (ii) creating an enabling environment for local and national authorities to improve environmental regulation by building public awareness and support, and by helping local residents and businesses comply with the requirements; and (iii) helping to eliminate or reduce some of the most urgent existing threats to the Lake’s ecosystem. The project includes both joint activities and “unilateral” activities

The Project consists of four components:

Component A. Coordinating Lake Management. This component will help to put in place an institutional structure for coordinating protection and management of Lake Skadar-Shkoder and its natural resources. The establishment of a transboundary River Basin Authority as called for by the EU Water Framework Directive is likely to take years, and a phased approach should be used. The project will support the creation of several bilateral Working Groups to coordinate implementation of key actions called for in the 2003 Memorandum of Understanding and the joint Strategic Action Plan. Working Groups will be set up for: (i) design and establishment of a

permanent transboundary institutional structure (including harmonization of policies, procedures and legislation as required); (ii) development of a lake-wide zoning and management plan (complimentary to the individual management plans which are legally required for both of the Protected Areas); (iii) designing and launching a lake-wide ecological monitoring program; (iii) developing and launching a public awareness-raising and education program; and (iv) preparing a coordinated strategy and plan to promote sustainable tourism development.

Component B. Monitoring and Research: This component will support Technical Assistance, training, the purchase of equipment and incremental operating costs (on a declining basis) needed to put in place a permanent joint monitoring system, guided by management requirements and by the parameters outlined in the EU Water Framework Directive and the Ramsar Convention. Monitoring for specific purposes such as Avian Flu prevention and detailed ornithological surveys will also be included. The types and amounts of support provided will differ somewhat between the two countries, based on their existing capacity. An important part of the monitoring program will be establishing a common data base and networks for information exchange. The monitoring program and protocols will be designed and overseen by a transboundary Working Group, supported by the Secretariat, and implemented on the ground by the appropriate national institutions. The project will also finance a limited amount of “on-demand” research relating to specific management issues identified through the monitoring program, such as seeking the causes for declines of particular species or testing different approaches to habitat restoration. In the first year, the targeted research program will include a detailed socio-economic study and stakeholder consultations associated with developing a Process Framework relating to possible increased restrictions on fishing. The research will be contracted to capable research institutions by the Secretariat on behalf of the Working Group, through a competitive process.

Component C. Protected Area and Natural Resources Management. Ensuring that natural resources are used sustainably and limiting their ecological impact is an essential and challenging part of PA management and is an important long term strategic goal for Lake Skader-Shkoder in both countries. The project will support development of sustainable tourism by helping to create an attractive and ecologically appropriate environment for nature-based tourism such as well-marked bicycle and hiking trails, bird observation platforms, informational signs and materials, restoration of cultural heritage sites and creation of two visitor centers (preferably through rehabilitation of existing historic buildings). Other types of local economic development will be supported through partnership initiatives of the PA administrations such as providing technical assistance for organic agriculture and development of locally branded “Lake Skadar” specialty food products and handicrafts based on environmentally friendly and sustainable resource use. The project will support Technical Assistance, training, equipment and materials, and some incremental operating costs to strengthen the capacity of the PA Administrations and enable them to practice effective, integrated management of the PAs and their natural resources. This management will be carried out in coordination with one another (Transboundary) and in cooperation with local governments and communities and other stakeholders. Specific activities will include: TA for assessment and revision of policies and regulations (Albania); the development of zoning and management plans for the PAs (to be incorporated into lake-wide zoning and management plans) and demarcation of zones; communications and other equipment to enhance management effectiveness on the ground; small scale infrastructure for PA management and tourism (including small visitor centers); and TA and incremental operating costs to establish and improve programs in areas such as tourism promotion/marketing, community outreach and livelihoods support activities, and education.

Component D. Urgent Environmental Investments . The project will provide financing to help remediate some hotspots which are identified as high priority in the joint SAP. GEF funding will

either form part of a larger financing package (e.g. to remove or contain hazardous waste at the KAP aluminum plant site) or compliment, extend and broaden the benefits of activities being funded by others (e.g. wastewater treatment facilities for small lakeside villages and isolated restaurants, complimenting large projects to improve wastewater treatment for large cities and towns. In addition to addressing existing problems, the project will finance a pilot program to promote low input/organic agriculture in surrounding areas, as a means of preventing a resurgence of agrochemical inputs to the lake.

4. Environmental Impacts and mitigative actions

In this section the different components will be assessed for their potential environmental impacts, taking into account that the project has not been finally designed yet.

4.1 Component A

Taking into account that there are no physical activities in Component A, just strengthening of legal and institutional framework, establishment of working groups, etc. no negative environmental impacts have been identified.

4.2 Component B

Component B will deal with monitoring and research, and no negative impacts have been identified.

Basically, boats that can be used all year round are needed, and equipment for taking samples at various predetermined locations in the lake. The equipment for taking water samples to be analyzed for basic physical-chemical parameters may be quite simple and consisting of different kinds of glassware, but can also be more sophisticated and automated monitoring units, with built-in transmitting equipment, taking samples and analyzing it automatically and transmitting results to the responsible laboratory. Equipment for flora and fauna can be different types of nets, and for benthos (bottom- and sediment living animals), different types of sediment core-samplers may be used. For water samples to be analyzed for heavy metals and organic chemicals there are different methods, and the kind of glassware and lids are usually more expensive, as e.g. organic chemicals in the water samples might adhere to lids, if there are made of silicone in stead of Teflon, giving dubious analysis results. Furthermore, stainless steel equipment is preferred for other types of sampling, and thermal boxes are needed for storing the samples on their way back to the laboratory.

As the monitoring and research activities will be designed by environmental scientists, it must be a prerequisite that these activities will not be harmful to the environment. Monitoring stations are supposed to be chosen with proper concern for the environment and disturbing as little as possible any nesting or spawning sites for birds and fish. The positive environmental impact of the more systematic monitoring of the lake is that detection of sudden higher levels of certain chemicals or detrimental effects will be discovered, and be brought to the attention of decision-makers in the two countries at an early stage. Another positive impact is that the scientist can report on the

environmental health of the lake on a regular basis, creating awareness of the importance of protecting its fragile ecosystem.

4.3 Component C

Component C entails activities that could potentially be harmful to the environment. Some of the proposed activities are classified as Category B according to the World Bank Classification system. These are the following: 1) Creation of well-marked bicycle and hiking trails, 2) Construction of bird observation platforms, and 3) creation of two visitor centers. Each of these activities will be addressed below.

4.3.1 Creation of well marked bicycle and hiking trails

Most national parks have procedures in place for creating bicycle and hiking trails taking into account the possible environmental impacts, and disturbing the environment as little as possible. In Skadar Lake National Park in Montenegro, some walking paths have been created with support from GTZ, and the experience gained in creating the walking paths may be useful in this context. In Albania similar steps might have been taken in other national parks, but no information was obtained from the Albanian authorities.

In Albania, the law “on protected areas” is relevant, and it gives the authority to the Regional Environment Agency to issue permits for construction activities, which afterwards will have to be approved the Council for Territory Adjustment. In Montenegro it is the “Law on National Parks”, giving the authority to issue a permit to State Enterprise National Parks. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, as well as from the World Bank.

The potential Environmental impacts of making bicycle and hiking trails and their mitigating measures in national parks and nature parks are the following:

Creation of well marked bicycle and hiking trails	
Potential environmental impact	Mitigation measures
Vegetation clearance, including possible removal of trees and shrubs	<p><i>Construction phase:</i> Clearing the vegetative cover will be necessary in some locations. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before forming the trails.</p>
Destruction of habitats for endemic plants and animals.	<p><i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for trails should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The trails should be placed, where any impact is minimized, without destroying the purpose of the trail.</p>
Elevated noise level and disturbance of nesting birds	<p><i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with trail development. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons.</p>
Potential problems with litter from tourists using the bicycle and hiking trails	<p><i>Operation phase:</i> Once the initial trail development is over, the level of noise should be barely noticeable as hikers disperse and use the system.</p> <p><i>Operation phase:</i> Litter bins can be placed at regular intervals along the trails and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.</p>

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Providing easier access to prohibition zones of the lake	<i>Operation phase:</i> In some cases it might be necessary to fence the prohibition zones on land, as well as putting warning signs and mark the prohibition zones with signs. Furthermore, the rangers should control the trails with regular intervals and maps in the park regulations should indicate placements of prohibition zones.
Soil instability or changes in geologic substructure, disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility	<i>Operation phase:</i> A minor amount of soil displacement will occur due to the trail construction. Soil disturbance should be minimal and mitigated by erosion control devices and the inclusion of switchbacks and meanders on steep slopes. The trail could result in some compacted, less-productive soil where it is being used. If further damage occurred during construction, that area could be reseeded with e.g. a native grass mix.
Introduction and spread of noxious weeds	<i>Operation phase:</i> The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed trail areas, trail completion could actually assist park employees in their control by allowing easier access into the affected areas.
Fecal contamination of surrounding areas	<i>Operation phase:</i> Latrines should be constructed at suitable places along the trails and a system for cleaning at regular intervals should be set up.

These potential impacts and their mitigation measures should be addressed by the competent authorities in the two countries, when giving their permit. At this point, the information regarding these “subprojects” will have to be improved, before the permit can be given, including planned location, equipment for doing clearance of vegetation, materials to be used for “path coating”, maintenance, duration of work etc.

Concerning construction of well-marked bicycle and hiking trails, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the bicycle and hiking trails are planned and designed. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). Hiking and bicycle trails are not mentioned specifically in the Albanian and Montenegrin laws on national parks, but have to be treated as “construction”. The proposed construction of bicycle and hiking trails also has to be consistent with PA management plans and spatial plans in Montenegro.
- ③ If camping sites should be constructed in connection with the hiking trails, permits or licenses should be obtained from the respective authorities in the two countries, being Regional Environment Agency and the Council for Territorial Adjustment in Albania, and State Enterprise National Parks in Montenegro. It could furthermore be considered to let any camping site live up to the EU criteria for eco-labelling of campsite service (2005/338/EC). Furthermore, as mentioned above the camping sites should be assessed according to the WB classification system and be subject to the relevant procedures.

4.3.2 Construction of bird observation platforms

Many national parks have procedures in place for construction of bird observation platforms taking into account the possible environmental impacts, and disturbing the environment as little

as possible. In Skadar Lake National Park in Montenegro, four observation towers and one observation platforms have been constructed with support from GTZ, and the experience gained in constructing the platform and the four observation towers may be useful in this context. In Albania similar things might have been done in other national parks, but no information was obtained in this regard from the Albanian authorities.

In Albania, the law “on protected areas” is the one regulating this issue, and it gives the authority to the Regional Environment Agency to issue permits for such activities, which also has to be approved by the Council for Territorial Readjustment. In Montenegro it is the “Law on National Parks” regulating this issue, giving the authority to issue a permit to the State Enterprise National Parks.

This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries. Furthermore, the activities have to be subject to WB guidelines concerning this, and procedures by the WB will have to be followed as well, if financing will be provided by this project.

The potential Environmental impacts of constructing bird observation platforms in national parks and nature parks are the following:

Construction of bird observation platforms	
Potential environmental impact	Mitigation measures
Potential destruction of habitats for endemic plants and animals.	<i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for bird observation platforms should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the platforms should be chosen with care, minimizing the potential negative impacts, without destroying the purpose of the observation platforms.
Elevated noise level and disturbance of nesting birds	<i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with platform construction. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons. <i>Operation phase:</i> There will be an elevated noise level in the operation phase as well, which makes the choice of location of the observation even more important. When maintained, colours matching the background, without light reflecting surfaces should be used for the construction.
Vegetation clearance, including possible removal of trees and shrubs	<i>Construction phase:</i> Clearing the vegetative cover will be necessary at the chosen locations for the platforms. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before constructing the platforms.
Potential problems with litter from tourists using the bird observation platforms	<i>Operation phase:</i> Litter bins should be placed at the bird observation platforms, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.
Providing easier access to prohibition zones at the banks of the lake	<i>Operation phase:</i> In some cases it might be necessary to fence the prohibition zones on land, as well as marking the prohibition zones with signs. Furthermore, the rangers should control the bird observation platforms with regular intervals and maps in the park regulations should indicate placements of prohibition zones.
Risk of contamination of soil during maintenance of platform (cleaning and painting) and leakage of impregnation substances from wooden building materials	<i>Operation phase:</i> During maintenance of the platform, spills of the impregnating substances should be collected by plastic covers on the ground or foundation of the platform. If made of wood, not freshly

Establishment or spread of noxious weeds

impregnated wood should be used, but reused or reutilized wood where leakage of impregnation substances is minimal, as some substances in impregnation are toxic to the environment.

Operation phase:

The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed placement of the platform, platform completion could actually assist park employees in their control by allowing easier access into the affected areas.

Fecal contamination of surrounding areas

Operation phase:

Latrines could be constructed at each bird observation platform and a system for cleaning at regular intervals should be set up.

These potential impacts and their mitigation measures should be addressed by the competent authorities in the two countries, when giving their permit. At this point, the information regarding these “subprojects” will have to be improved, before the permit can be given, including planned location, equipment for doing clearance of vegetation, materials to be used for construction, maintenance, duration of work etc.

Concerning construction of bird observation platforms, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the construction of bird observation platforms is planned. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). The proposed construction of bird observation platforms also has to be consistent with PA management plans.
- ③ As mentioned, the Skadar Lake National Park in Montenegro has already four bird observation towers and one platform constructed with assistance from GTZ, and experiences gained might be useful in Montenegro in this context.

4.3.3 Construction of visitor centers

A visitor center is already present in Montenegro, and it is for all 4 national parks in Montenegro, even though it is placed next to the lake. It is placed close to a highway going through the park and also houses the park administration, and is new and modern. Together with it is placed a shop for local wine from the area, and a parking area has also been created. The center in Montenegro has proper waste water treatment facilities in form of a mini wastewater treatment plant close to the center. The exhibition in the center presents as mentioned also information regarding the three other national parks in Montenegro, and it gives a good impression.

It should also be taken into account that a visitor center has been built in Shirog in Albania, very close to the Lake, financed by the national budget. The center has not been taken in use yet, and detailed information concerning the construction could not be obtained in English. A quick inspection of the center did not indicate the presence of a septic tank or other collection or treatment of waste water. The visitor center appeared small and not really suited for the purpose, and its placement did not allow for parking of more than a few vehicles.

Therefore, it has to be considered, whether more centers are needed, or investment from the project should be used for improving the existing centers.

The potential Environmental impacts of constructing visitor centers in national parks and nature parks and their corresponding mitigation measures are among others the following:

Construction of visitor centers	
Potential environmental impact	Mitigation measures
Contamination of surroundings during construction with all types of construction waste (building materials, packaging, solvents, paints, plastic, etc.)	<i>Construction phase:</i> A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.
Destruction of habitats for endemic plants and animals	<i>Construction phase:</i> The risk of destroying habitats is very small, but the area to be used for visitor centers should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the centers should be chosen with care, minimizing the potential negative impacts. The visitor centers do not have to be placed close to prohibition areas but should be placed near access roads, as parking should be available for visitors.
Elevated noise levels and general disturbance, depending on site	<i>Construction phase:</i> A minor and temporary increase in noise level will occur as a result of normal construction activities associated with center construction. Construction should occur during non-peak visitor use or on weekdays when visitors are fewer. Other mitigation measures are not necessary. <i>Operation phase:</i> There will be an elevated noise level in the operational phase as well, which makes the choice of location of the visitor center important. No mitigation measures are necessary, but it could be mentioned in the park regulations that noisy behaviour is generally not accepted inside the park and destroys the chances for observing wildlife at close range.
Potential problems with litter from tourists using the visitor centers	<i>Operation phase:</i> Litter bins should be placed at the visitor center, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined
Problems with domestic waste water from toilets at the centers, if no proper sanitation solutions have been installed, providing bad examples for local inhabitants and restaurants.	<i>Operation phase:</i> The visitor centers should be equipped with proper sanitation facilities, taking care of domestic waste water. It can either be in the form of a mini waste water treatment plant, as installed in the existing visitor center in Skadar Lake National Park in Montenegro, or a modern septic tank. If a septic tank solution is chosen, a system for emptying the tank should be set up, transporting the sludge to a safe disposal site outside the park.

These potential impacts and their mitigation measures will among other things be relevant for the competent authorities in the two countries, if it is decided to include construction of visitor centers in the final project description. At this point, the information regarding these “subprojects” will have to be improved, before the permit can be given, including planned location, equipment for doing clearance of vegetation, materials to be used for construction, maintenance, duration of work etc. In this case the centers already exist, but the same kind of information is needed, if improvements/extensions are planned.

Concerning construction/extension of two visitor centers, the following can be recommended, taking into account the mentioned potential environmental impacts:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the construction of bird observation platforms is planned. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). Construction is mentioned in both Albanian and Montenegrin laws on national parks. The proposed construction of visitor centers also has to be consistent with PA management plans. The details are mentioned under the respective descriptions of the environmental legislation in Albania and Montenegro.
- ③ As mentioned, the Skadar Lake National Park in Montenegro has already four bird observation towers and one platform constructed with assistance from GTZ, and experiences gained might be useful in Montenegro in this context.

4.3.4 Establishment of an effective protected area management and zoning system

The establishment of an effective protected area management and zoning system of the lake, mentioned as operational objective in the Joint Strategic Plan, will have positive environmental impacts, as it will restrict the access to vulnerable areas of the lake, such as spawning sites for certain fish species and nesting places for birds. It was mentioned in Montenegro that one enterprise had permission to exploit sand and gravel from the lake sediments, and that they often came to close to such vulnerable areas. In the absence of zoning, it is difficult to enforce protection of these areas. In the lake it could e. g. be done with buoys, marking the prohibition zones.

It is therefore recommended:

- ③ The positive environmental impact of the establishment of an effective protected area management and zoning system of the lake should be used in promotion of the project to the public, as one of the positive impacts.

4.4 Component D

Component D entails activities that could potentially be harmful to the environment. One of the proposed activities is classified as Category A according to the World Bank Classification system, namely the one regarding clean-up at KAP. The others are classified as Category B. The activities are the following: 1) Removal or containment of hazardous waste at the KAP

aluminium plant site, and 2) Support to wastewater treatment facilities for small lakeside villages and isolated restaurants. Each of these activities will be addressed below.

4.4.1 Removal or containment of hazardous waste at the KAP aluminum plant site

Whenever a clean-up of a contaminated site such as the hazardous waste dump at KAP, should be initiated, a thorough pre-investigation should be carried out. The pre-investigation will determine the amounts of contaminated soil, the type of contaminants, and the options to remediate the threat. Furthermore, it will specify the equipment, the duration, the pollution during the clean-up, occupation health issues, etc. When this has been done, the different options to remediate the threats should be considered, taking into account that the plant is still producing aluminium and therefore also waste, meaning that any solution should cater for waste solutions for the coming years. The next step is to finalize the EIA study and forward it to the competent authority.

A rough estimate from the Center for Ecotoxicological Research concerning the hazardous waste dump indicates an amount of 300,000 tonnes of hazardous waste, covering an area of app. 3 acres, and in a layer of app. 7 metres². According to current knowledge of waste from aluminium factories, the main waste product is red mud with high pH, containing oxides of alumina, silicon, iron, titanium, sodium, calcium and other elements. This red mud is currently being stored in two big basins within the premises of the plant. Furthermore, hazardous waste from alumina plants normally include spent sulphuric acid from descaling in tanks and pipes. Information concerning handling of this waste was not given during the site visit at KAP, and attempts to get information in English through the Center for Ecotoxicological Research have not been successful, but it should be obtained as part of the pre-investigation. From the smelter an amount from 40-60 kg of mixed solid waste per ton of product is produced, with spent cathodes being the major fraction. Such waste contains normally aluminium and silicon oxides, fluorides, and cyanide compounds (about 400 ppm of the latter).

There are three options for the hazardous waste dump site after the pre-investigation has been carried out. Either a new landfill is constructed at another location within the premises of KAP, a lining is put in place, and the hazardous waste is moved to the new place, where there should be place for land filling of waste for the coming e.g. 10 years. The second option is capping the present landfill with an impermeable cover, preventing rain water from penetrating it and transporting contaminants to the groundwater and eventually to the river. This solution still requires the construction of a new landfill for new waste, but the movement of the 'old' waste from its present location is not necessary. The movement itself will increase the air pollution in the form of dust. The third option is to construct a landfill outside the premises of KAP, move the hazardous waste there, and use the landfill for waste from other factories as well. The construction of the landfill in all three options is supposed to be according to regulations stipulated in the EU directive on the landfill of waste (1999/31/EC).

The potential Environmental impacts and environmental issues of removing or contain hazardous waste at the KAP aluminum plant site are among others the following:

Remediation of hazardous waste at KAP	
Potential environmental issue and impact	Mitigation measures
Determination of content and amounts of waste	<i>Preparation phase:</i> Pre-investigation or technical feasibility study, determining

² A report is under preparation by Center for Ecotoxicological Research, but not in English.

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Movement of hazardous waste will create dust and spread the contaminated soil to adjacent land.	content and amount of waste, including options for removal and design of hazardous waste landfill. Any placement of the landfill will have to be consistent with the Spatial Plan for Podgorica Municipality
In case of movement in a season with increased precipitation, increased leakage of contaminants to groundwater and subsequently to the river and from there to the lake	During the movement of the contaminated soil, modest spraying with water can be done, if dust is a problem. The waste is not considered a serious health hazard, but the proposed pre-investigation will determine the type of mitigation necessary. <i>Construction/preparation phase:</i> It is proposed to do the movement in the months with lesser precipitation, e.g. during the spring and summer. If water is still a problem, water leaking to the bottom of the excavation can be pumped to a tanker, which should be emptied at a place, where the water will not go to the lake
In case of capping with impermeable membrane, risk for spreading to adjacent land and the river in case of flooding or landslide	According to information from Montenegro, the risk for flooding is very modest. It should be possible to avoid landslides by proper placement of the landfill.
Contamination of groundwater resulting from leachate that can leak through the liner system.	A leachate control system should be put in place, with regular monitoring of leachate
Consistency with the overall land-use planning in the area.	The Municipality of Podgorica should be part of the preparations for the pre-investigation, and they should ensure that the placement of the landfill will be consistent with the spatial plan for Podgorica.
Landfill not large enough to accommodate the hazardous waste from KAP for a reasonable time (10 to 30 years).	Allocation of sufficient land for landfill. Depends on reliable production figures from KAP and whether others than KAP will be allowed to use the landfill for hazardous waste disposal.

These issues should among others be addressed by the competent authority in Montenegro, when considering their approval of the EIA study. Furthermore, these issues should be taken account by the separate approval by the World Bank. At this point, the information regarding this “subproject” will have to be improved, before the approval can be given, including all the results of the pre-investigation, the planned location of the landfill, equipment to be used for moving the hazardous waste, materials to used for membrane, durability of membrane, duration of work etc. The competent authority for this kind of projects in Montenegro is the Ministry of Tourism and Environment.

Based on the above mentioned potential environmental impacts, the following is recommended:

- ③ Terms of Reference for a pre-investigation should be prepared by the involved authorities in Montenegro or the Project Secretariat, or a consultant hired by it. The outcome of the pre-investigation should be a project document or technical feasibility study living up the requirements for project description under the EIA Law of Montenegro, which will be in force from January 2008, concerning documentation. Any existing documentation concerning the hazardous waste should be collected and analyzed and if necessary translated to English, before or during the pre-investigation, constituting a so called zero state study. Furthermore, this technical feasibility study should live up to the requirement of the World Bank, as their approval is equally important.
- ③ The developed project description should be used for an application of approval to the Ministry of Tourism and Environment and follow the normal EIA procedures, and likewise be submitted to the World Bank. Movement of hazardous waste and construction of a landfill for hazardous waste will be on the list for preparation of a mandatory EIA study according to the Law on EIA in Montenegro. An extra hearing/consultation apart from the obligatory one according to the Montenegrin EIA Law should be initiated by the implementing ministry or somebody whom it has been delegated to, as soon the project description is ready in order to live up the WB requirements for Category “A” projects.

- ③ Most likely, expertise for this kind of remediation and construction of landfills for hazardous waste is not present in the Ministry, as no landfills for hazardous waste to date has been constructed in Montenegro or Serbia. It is therefore recommended that international expertise should be used for that part of the pre-investigation.
- ③ If the EIA study is approved, implementation should be initiated according to the conditions given by the Ministry of Tourism and Environment, including monitoring requirements. Furthermore, the EIA study should be approved by the World Bank, and an Environmental Management Plan should be prepared. The Ministry will be responsible for monitoring the implementation.

4.4.2 Treatment of wastewater from small lakeside villages and isolated restaurants

As already documented in the TDA, the joint SAP, and other documents, small lakeside villages exist in both countries without proper wastewater treatment. In Albania there are furthermore quite a few small restaurants at lakeside, without proper wastewater treatment. According to the environmental legislation in both countries, such activities should be approved by the competent authorities, if they are within national or nature parks. As mentioned earlier, the competent authorities are State Enterprise National Parks, and Regional Environment Authority, in Montenegro and Albania, respectively.

The potential environmental impacts of discharging untreated wastewater from small lakeside villages and isolated restaurants and their respective mitigation measures are among others the following:

Treatment of wastewater from small lakeside villages and isolated restaurants	
Potential environmental issue and impact	Mitigation measures
Contamination of surroundings during construction with all types of construction waste (packaging, solvents, paints, plastic, etc.)	A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.
Contamination of the lake with domestic waste water, containing fecalia, pathogens and contaminants (e.g. detergents, disinfectants, chlorine, etc.)	Different solutions for treating wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks. If septic tank solutions are used, a system for emptying the tanks should be put in place.
Destruction of recreational values because of odours, tainting of the water at outlets, etc.	First of all, an environmental awareness campaign is necessary in order to stop new construction projects on primarily the Albanian side of the lake. Secondly, the local environmental authorities on both sides of the lake prepare a prioritization list of possible projects, pinpointing hotspots
Health risks near outlets	The local environmental authorities on both sides of the lake should see to it that the future monitoring programmes analyse water samples for E. coli and coliforme bacteria in order to be able to give the public information on health risks in the lake
Oxygen depletion because of high organic content in waste water	Oxygen content should as part of the future monitoring programmes be measured on a regular basis
Eutrophication because of high phosphorus content of waste water	As mentioned above, different solutions for treating the wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks.

These issues should be addressed by the competent authorities in the two countries, when assessing the environmental impact of the subprojects. At this point, the information regarding these “subprojects” does not exist, and all kind of details, including location, equipment to use, materials, duration of work, etc. In fact, what is needed are small feasibility studies for selected

projects, and criteria for selection should be developed as well. The feasibility studies should as well address the needs for documentation needed by the World Bank.

Concerning construction of treatment facilities for wastewater from small lakeside villages and isolated restaurants, the following can be recommended, taking into account the mentioned potential environmental impacts and proposed mitigation measures:

- ③ The respective laws “on protected areas” in Albania and “National Parks” in Montenegro should be followed when the feasibility studies for small lakeside villages and isolated restaurants are prepared and prioritized. This means that prior to any implementation, permits or licenses should be obtained from the respective authorities in the two countries, being the Regional Environment Agency and approved by the Council for Territorial Readjustment in Albania, and State Enterprise National Parks in Montenegro. In addition, the subproject might be categorized as Category “B” according to the WB system, involving the preparation of an Environmental Management Plan, and a public consultation (see Section 6). Wastewater treatment is not mentioned specifically in the Albanian and Montenegrin laws on national parks, but has to be treated as “construction”. The proposed construction of smaller wastewater treatment facilities also has to be consistent with PA management plans and spatial plans in Montenegro.
- ③ Terms of Reference for feasibility studies are prepared by the project secretariat, which goes through the different options for wastewater treatment for small lakeside villages and isolated restaurants, living up to both national legislation and EU legislation (The EU Directive concerning Urban Wastewater (91/271/EC) and EU Water Framework Directive). Based on that, a number of subprojects with proper documentation should be designed by the Project Secretariat or consultants recruited by it taking into account the economic frames set, using the recommended options. Criteria for selection, including e.g. possibilities for owners to co-finance, should be prepared.
- ③ For the selected projects, the EIA procedures for the respective countries should be followed, taking into account the proposed mitigation measures. As the projects might have a potential for Transboundary pollution, a common procedure based on the MoU between the two countries and following Espoo principles should be established. As usual, the selected projects should also be assessed according to the WB classification system, and apart from the EIA study, an EMP should be prepared, if they are classified as belonging to category “B”.

5. analysis of alternatives

The following is a short discussion of the alternatives to the proposed project. Concerning the two components with potential environmental impacts, it will not address specific solutions at this point, because of the lack of precisely described activities. For all components the 'without project' scenario will be considered.

5.1 Alternatives to Component A

Component A has no potential negative impacts of any of the described activities. However, the proposed outline of objectives will improve the coordination of activities around the lake, and possibly avoid conflicting approaches from the two countries. The ‘without project’ scenario

would not improve transboundary cooperation concerning protection and exploitation of natural resources of the lake, and it not considered a good alternative.

5.2 Alternatives to Component B

Component B has no potential negative impact of any of the described activities either, and will through the monitoring give a good picture of the environmental situation of the lake, and also provide basis for decisions of reducing sources of pollution by the respective governments, as part of the monitoring programme will assist in identifying sources of pollution. In this context it is important to mention that the monitoring institutions on both sides should as soon as possible be brought up to the same technical level, as the assessment of the ecological status of the lake will be very difficult, if expertise, equipment, frequency differ too much between the two countries.

The ‘without project’ scenario will not bring any benefits, as an overall monitoring programme will not be brought in place and it will not be possible to describe the ecological and environmental situation of the lake and take actions accordingly.

5.3 Alternatives to Component C

Component C has some potential negative impacts of some activities, but they are not considered to belong to Category “A”, but “B”. There are different ways of increasing tourism activities, but the approach here is to cautiously assess possible impacts, before activities are initiated, and implement the necessary precautionary and mitigative actions along any implementation. The suggested activities regarding formation of well-marked bicycle and hiking trails, construction of bird observation platforms, creation of two visitor centers are normal activities in national parks and serving a purpose.

However, it can always be discussed how massive the interventions should be, and how close to nesting sites of the birds, the observation platforms and bicycle and hiking trails should be placed. It is here important to strike a balance between the wish of not disturbing the birds and the wish to bring the visitors to the parks close to the wildlife in order to show them the birds properly. It will probably not bring a lot of visitors, if all observation platforms and towers are far away from the nesting sites, and only professional ornithologist with strong binoculars will be able to see the birds. An option is to restrict the access to some of the platforms and towers at specific times of the year, if it can be felt that the birds are too disturbed. Furthermore, it can be considered to camouflage some of the platforms, and even coat their interior with noise dampening material and put roofs on. It is therefore suggested that some of the platforms should be relatively near to some of the nesting sites of some of the birds, and that restrictions should be made at certain times of the year, if negative effects are discovered.

It is also important to take into account that it should be possible to evacuate visitors in case of wildfires or accidents. This put some extra demands on the cover of the trails, but on the other hand, there should also be access for pick-ups emptying the wastebins, and renovation teams for cleaning the latrines.

The placement of the visitor centers on the other hand, does not have to be close to nesting birds. Rather they should be placed at the edge of the park, close to access roads, and with parking possibilities. Here it is considered more important that the pollution resulting from the center is minimal (that wastewater is treated, and waste collected), and that options for refreshments and parking are available.

The ‘without project’ alternative will not meet the objective of developing tourism, as it probably will stay at the same level, as it is now or even lower, if the public gets the impression that the parks on either side have nothing to offer. It will not create awareness of the value of protecting the lake and might in the long term be negative for the development of activities around the lake.

5.4 Alternatives to Component D

This component aims at providing financing to help remediate some hotspots which are identified as high priority in the joint SAP. There are several alternatives for Component D, and a few will be mentioned here.

Concerning the more concrete activities, they are still rudimentarily described, but it is mentioned that the hazardous waste at KAP aluminium plant could either be contained or removed. What will be the best solution depends on the result of the proposed pre-investigation. It is possible that by far the cheapest solution might be to contain the waste at its location, but it might not take into consideration that the factory continuously needs a storage place for its hazardous waste, and a new landfill will have to be constructed anyway. The placement of the landfill is another aspect that has to be investigated. However, these activities will improve the environmental situation of the present landfill and of the lake.

However, there might also be other environmental problems at KAP, besides the hazardous waste. One of the obvious aspects to consider is the huge energy consumption, and subsequent consumption of fossil fuels. An energy audit of the factory might possible reveal that it is possible to reduce the energy consumption substantially. Another option is to investigate if any cleaner technology solutions might be available, as well as looking at the content of the emissions to air from the chimneys and the discharges to the river from the wastewater treatment plant.

Another hotspot to consider is the discharge of untreated wastewater from Shkodra directly to the lake, whenever the pumping station pumping the the wastewater to the Boyana/Buna River due to power failure does not work. That is a serious and very visible environmental problem for the lake that could be addressed under this component as well.

Concerning wastewater treatment facilities for small lakeside villages and isolated restaurants there is also no closer description of the activities, but the implementation will lead to environmental improvements in the form of less problematic discharges to the lake. The alternative of removing the isolated restaurants or demand by force that treatment facilities should be provided will not bring any benefits, and is probably not feasible.

The ‘without project’ alternative is environmentally not sound, as it will deteriorate the environmental situation of the lake, because 1) Contaminants from KAP will continue to leak to the river and ultimately to the lake, and 2) The small lakeside villages and already established restaurants will continue to contaminate the lake.

6. Procedures for environmental screening of component interventions

6.1 Procedures for Environmental Assessments

Below are described the procedures to be followed during project implementation by the Albanian Ministry of Environment, Forests and Water Administration (MEFWA) and the Montenegrin Ministry of Tourism and Environment, who will have the overall responsibility for implementation of the project. The underlying principle of the development of these procedures would be that environmental issues are best addressed when they are made an integral part of the project cycle - in this particular case, it would be early in the project cycle for all activities to be funded under the project. The process to be put in place would consist of the steps described below.

6.2 Environmental Screening

For any subproject, the respective ministry or who this authority has been delegated to will carry out an appropriate Environmental Assessment (EA) for activities under the main project. Before approving a subproject, the Project Secretariat verifies (through its own staff, outside experts, or existing environmental institutions) that the subproject meets the environmental requirements of appropriate national and local authorities and is consistent with the OP 4.01 and other applicable environmental policies of the Bank. The Project Secretariat will submit the EA to the Bank for the final approval the results of the EA review.

An environmental screening will be undertaken to determine the appropriate extent and type of EA. The proposed subprojects will be classified according on the type, location, sensitivity and scale of the project and the nature and magnitude of its potential environmental impacts. The highest rating given to individual sub-project will determine the category of the EA.

(a) *Category A*: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance.

(b) *Category B*: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance.

(c) *Category C*: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

Table 6. 1 on the next page shows, how the screening can be done, and differences between the systems in the two countries and the World Bank:

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Table 6.1: Criteria for Albanian or Montenegrin and World Bank EA procedures under the Project

WB Category	Category As Per Albanian Legislation Law on Environmental Impact Assessment, No.8990, dated 23.1.2003	Procedure To Be Followed (Meeting either Albanian or Montenegrin and World Bank standards)	Category As Per Montenegrin Legislation Law on Environmental Impact Assessment (Official Gazette of the RM, No. 80/05)
A	<ul style="list-style-type: none"> An EIA study should be prepared by the Project Secretariat or consultant hired by it and forwarded to the Regional Environmental Agency (REA). After review of the category, REA will send it to the Ministry for decision-making, with their remarks. All projects and activities described in Appendix 1 of the law should undergo a profound process of EIA. If in a protected area and in appendix 2, a profound EIA process should also be made, if assessed as having significant impact on the environment The local authorities shall within a month organize a public debate/consultation upon request by the Ministry of Environment A committee will be assessing the EIA and if approved, the Ministry will issue the permit 	<ul style="list-style-type: none"> An EIA study will be prepared by the Project Secretariat or consultant hired by it to meet either Albanian or Montenegrin legislation on EIA and World Bank requirements Extensive Executive Summary (ES) and Environmental Management Plan (EMP) will be prepared in English Two Public consultations will be held Approval of EIA will be obtained from either the Albanian or the Montenegrin ministry, and the relevant Environmental Approval with specified mitigation, prevention measures and monitoring issued. The World Bank will review (ES and EMP) and provide no-objection to the consultation result and final EIA 	<ul style="list-style-type: none"> An EIA study should be prepared by the Project Secretariat or consultant hired by it and submitted to local environmental authorities (municipalities) or to the Ministry of Tourism and Environment (at the time being the competent authority, until the new EPA is created). The GoMN will pass regulations prescribing a list of projects for which the EIA is mandatory, meaning the ones with potential strongest negative impact on the environment. Until passed, old EIA regulations are still valid. The impact assessment procedure shall include: 1) decision on the need for the EIA study, 2) definition of the content and scope of the EIA study. Within a month the competent authority shall organize a public debate/consultation on the EIA application. A committee will be assessing the EIA study and if approved, the Ministry will issue the permit.
	<ul style="list-style-type: none"> There are no obligations to prepare an Environmental Management Plan (EMP) as part of the Albanian EIA legislation 	<ul style="list-style-type: none"> An EIA/EMP will be prepared by the Project Secretariat or consultant hired by it (to meet World Bank requirements). Two public consultation will be held Approval of EIA/EMP by the ministry in which the project takes place, will be obtained, and the relevant environmental approval issued. The World Bank will review and provide no-objection to the consultation result and final EIA/EMP. 	<ul style="list-style-type: none"> There are no obligations to prepare an Environmental Management Plan (EMP) as part of the Montenegrin EIA legislation
B	<ul style="list-style-type: none"> A summary EIA should be prepared by the Project Secretariat or consultant hired by it. All projects and activities described in Appendix 2 of the law should undergo a summary process of EIA. 	<ul style="list-style-type: none"> An EIA will be prepared by the Project Secretariat or a consultant hired by it to meet either the Albanian or the Montenegrin legislation on Environmental Impact Assessment) Environmental Management Plan (EMP) will be prepared in English One public consultation will be held. MEPPPC approval of EIA/EMP will be obtained, and the relevant environmental approval issued. The World Bank will review and provide no-objection to the consultation result and final EIA/EMP. 	<ul style="list-style-type: none"> The second list of projects of the law are for projects for which the impact assessment may be required. The competent authority shall decide on the need of the impact assessment in each individual case of projects

WB Category	Category As Per Albanian Legislation Law on Environmental Impact Assessment, No.8990, dated 23.1.2003	Procedure To Be Followed (Meeting either Albanian or Montenegrin and World Bank standards)	Category As Per Montenegrin Legislation Law on Environmental Impact Assessment (Official Gazette of the RM, No. 80/05)
		<ul style="list-style-type: none"> • EMP only prepared as required by WB. • Relevant Ministry approval of EMP will be obtained, and the relevant environmental approval issued. 	
C	<ul style="list-style-type: none"> • There is not a third category in the Albanian EIA law. 	<ul style="list-style-type: none"> • For this category no EIA is required. 	<ul style="list-style-type: none"> • There is not a third category in the Montenegrin EIA law.

Public Consultation and Disclosure

For all Category “A” and “B” subprojects, during the EA process, the respective ministry will consult project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and take their views into account. For Category “A” projects, the respective ministry or whom they have delegated it to consults these groups at least twice: (i) shortly after environmental screening; and (ii) once a draft EA report is prepared. In addition, the respective ministry consults with beneficiaries on a continuous basis during project implementation through public relations campaigns. The respective ministry will provide relevant material in a timely manner prior to consultation with project-affected groups and local NGOs and in a form and language that are understandable and accessible to the group being consulted.

For a Category “A” project, the respective ministry provides for the initial consultation a summary of the proposed project's objectives, description and potential impacts. In addition, the respective ministry ensures that EA reports for Category A subproject are made available in a public place accessible to affected groups and local NGOs. Any separate Category B project report is made available to project-affected groups and local NGOs. Only one subproject has been categorised as Category A, namely the removal or containment of the hazardous waste at KAP Aluminium Plant in Montenegro, and only for that subproject two consultations will be necessary.

7. environmental management plan and monitoring

As mentioned above, some of the activities have explicit negative impact on the environment and thus require a specific plan to institute and monitor mitigation measures and take desired actions as timely as possible.

The following content is developed based on WB OP 4.01 Annex C, and adapted to the Lake Skadar/Shkodra Integrated Ecosystem Management Project. An Environmental Management Plan (EMP) must be kept as simple as possible, clearly describing adverse impacts and mitigation actions that are straight forward to implement. The scale of the subproject will determine the length of the EMP. A small scale subproject's EMP can be elaborated in a few paragraphs or in a tabular format, keeping it as possible with concrete mitigation actions, timelines and responsible persons.

As noted in the earlier section, EMPs will be required for projects that fall in World Bank Category A and B. It is suggested that the following information be included:

- (a) **Responsible Party:** The authors who prepared the EMP along with the date of preparation.
- (b) **Project Description:** Present a brief description of the subproject. Include the nature of the investment, the location, and any characteristics of the area that are of particular interest (e.g. near a protected area, area of cultural or historical interest, sensitivity of the area).
- (c) **Mitigation Plan:** This should include a description of the steps to be taken to identify all anticipated significant effects, to mitigate the major potential impacts on land, water, air and other media during the planning, design, construction and operation phases.
- (d) **Monitoring Plan:** This should include a description of the key parameters to be monitored (including monitoring locations, schedules and responsible entities) and reporting procedures to ensure that the construction and operation of the project is in conformance with either Albanian or Montenegrin law and other relevant norms and standards, and conditions set by the WB. If such details are covered by permits or construction or monitoring contracts these can be referenced as attachments.
- (e) **Institutional Arrangements:** There should be a narrative discussion that provide a brief presentation on how the monitoring data is going to be used for sound environmental performance - who collects the data, who analyzes it, who prepares reports, who are the reports sent to and how often, what is done by the responsible authorities after they receive the information; and how is non-compliance with the EMP treated. This should also include (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.
- (f) **Implementation Schedule and Cost Estimates:** For all three aspects (mitigation, monitoring, and capacity development), the EMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the EMP. These figures are also integrated into the total project cost tables.
- (g) **Consultations with affected groups and non-governmental organizations.** The following should be included: Date(s) of consultation(s); Location of consultation(s); Details on attendees (as appropriate); Meeting Program/Schedule: What is to be presented and by whom; Summary Meeting Minutes (Comments, Questions and Response by Presenters) Agreed actions.

The involved stakeholders in Montenegro or Albania (e.g. the respective ministries and the municipalities of Podgorica and Shkodra) must participate in the development of the EMP, since local knowledge is important in identifying, designing and planning the implementation. In addition, the success of the implementation of the EMP will depend on community support and action; ownership is essential. The EMP for the activities under the four components potentially affecting the environment in a negative way can be found as Annex 3. Details as mentioned under The EMP should be part of the Project Implementation Manual. If further activities are designed, they should be addressed and added to the EMP if relevant.

7.1 Institutional Strengthening

In order for the project to be successful, it is important to touch upon possible institutional strengthening of the involved institutions in Albania and Montenegro. Below the proposed roles of the mentioned institutions will be described as well as necessary strengthening.

7.1.1 Institutions in Albania

Nature Park Administration, Shkodra.

According to the joint SAP, the administration of the managed natural reserve of Skadar/Shkodra Lake in Albania is composed by ten employees (Rangers), who depend on the Ministry of Environment, Forests and Water Administration. This Ministry is charged with drafting the administration regulations, the management plan and the monitoring programme of the managed natural reserve of Skadar/Shkodra Lake in cooperation with local government, non profitable organizations, community representatives and scientific institutions.

At present, the nature park administration consists of 10 rangers. None of them have managerial experience, and according to information obtained in Shkodra the inspection level is low, and job descriptions for their tasks probably do not exist. A director for the park has not been appointed yet. The park administration is supposed to be in charge of the daily operation of the park, and enforcement of the regulations for the park, when prepared. Furthermore, it is foreseen that part of the inspection of on-going activities in the park will be done by the park administration.

It is recommended that:

- ③ A manager is appointed as soon as possible and that regulations for the park are prepared accordingly.
- ③ The employed rangers will get training courses matching their tasks, including training in enforcement of regulations in force in the nature park, such as actions against illegal fishery, illegal construction, illegal disposal of waste etc. The training should be conducted in cooperation with the Regional Environment Agency Shkodra.

Regional Environmental Agency Shkodra

The agency has an important role in issuing and monitoring permits for construction within the nature park and screening EIA projects in the region, before submitting them to the Ministry in Tirana. Other approved EIA projects in the region are also inspected by the REA. The Project Secretariat will have to cooperate closely with the agency, and all activities of the project on the Albanian side should be coordinated with the agency, including awareness activities. It is the perception that the agency is not very visible in Shkodra, and the project could enhance this, by providing training in environmental auditing and inspection.

It is recommended that:

- ③ The project should support training for staff of the agency in environmental auditing and inspection.

University of Shkodra

The university has got the specialists necessary for doing most of the monitoring of flora and fauna in the lake. It seems though that they will have to be supplemented in some of the disciplines by the Faculty of Natural Sciences, University of Tirana, e.g. freshwater invertebrates and fish. Concerning measurements of physico-chemical parameters, which might have to be measured quite often, it is not considered a good idea to involve the University of Shkodra, as

they because of their lectures generally have difficulties in finding much time for such activities. Anyhow, they should be part of the working group designing the overall monitoring programme, which should be in accordance with the preparation of surface water status for lakes in the EU Water Framework Directive (2000/60/EC, Annex V).

It is recommended that:

- ③ The University of Shkodra should be involved in the monitoring of the flora and fauna of the lake and the design of the overall monitoring programme for the lake, in accordance with the EU Water Framework Directive (2000/60/EC, Annex V).

University of Tirana, Faculty of Natural Sciences

As mentioned above, the university should assist the University in some of the disciplines required for monitoring of the freshwater invertebrate fauna of the lake, as they have a broader range of expertise and has more staff than the corresponding faculty in Shkodra. Furthermore, the university could be involved in the measurements of heavy metals and organic chemicals, if the monitoring programme is ready, before the Hydrometeorological Institute has the necessary expertise.

It is recommended that:

- ③ The University of Tirana assists the University of Shkodra in monitoring the fauna of the lake, e.g. on monitoring of freshwater invertebrates and fish
- ③ The University of Tirana assists in monitoring organic chemicals and heavy metals, if the Hydrometeorological Institute is not having the necessary expertise in place, when the monitoring starts.

Hydrometeorological Institute of Academy of Sciences, Tirana

The Hydrometeorological Institute has been assessed to be the institution best positioned to do the monitoring of heavy metals and organic compounds on the Albanian side of the lake. The institute is at the time receiving support by an EU project (Strengthening of the Environmental Monitoring System in Albania, StEMA), providing them with all necessary equipment as well as training, and they have environmental monitoring as a core task for the institution.

It is recommended that:

- ③ The Hydrometeorological Institute should be involved in the design of the overall monitoring programme for the lake, and they should in the future be the main institution responsible for monitoring of heavy metals and organic compounds. Until they are ready to take up the task, technical assistance should be given to the institute by the University of Tirana, Faculty of Natural Sciences.
- ③ It is recommended that the institute participates in intercalibration with other laboratories in the region, as soon as they master their new equipment. Furthermore, it is recommended that they get accreditations for analysis of heavy metals and a number of relevant organic pollutants.

7.1.2 Institutions in Montenegro

Public Enterprise National Parks of Montenegro

This institution under the Ministry of Tourism and Environmental Protection is in charge of the four national parks in Montenegro, and also the competent authority regarding environmental protection in the parks. The management of the Skadar Lake National Park seems to be performing very well, and is the only national park in Montenegro that has been able to create a financial surplus on their activities. The park administration has the role of inspecting all on-going activities in the park, including construction activities.

Nature Protection Institute

This institute has relevant expertise regarding monitoring of flora and fauna in the Montenegrin part of the lake. It is not under the Ministry of Tourism and Environment, but under the Ministry of Culture. It has a very low budget for monitoring of flora and fauna in the whole of Montenegro, only around EUR 12,000 per year. It has relevant experience from the lake and has been cooperating with University of Shkodra on the monitoring of biota.

It is recommended that:

- ③ The Nature Protection should be participating in the process of designing the overall monitoring programme of flora and fauna for the lake, and also be an active partner in the future monitoring, along with staff of the Skadar Lake National Park staff.
- ③ It is recommended that the project finances the participation of the institute in the monitoring of the lake, at least for the first two years.

Public Institution “Center for ecotoxicological research”

The center has high expertise in analysing pollutants in different media and is considered an asset for Montenegro in environmental monitoring. The center has accreditations for several analyses and participates on a regular basis in intercalibrations with other European laboratories. It has been doing analyses on samples from the lake and has also been training other institutions in the region. Furthermore, the center is working for KAP Aluminium Plant on a commercial basis, and has a good knowledge of the environmental problems in the country.

It is recommended that:

- ③ The center should be involved in the design and implementation of the overall monitoring programme for the lake of physico-chemical parameters, heavy metals, and organic chemicals.
- ③ The center is probably the only one in the region that will be able to do the pre-investigation of the hazardous waste land fill at KAP and should be used for that purpose.
- ③ The analyses of samples to be done at KAP should be done by the center.
- ③ The staff of the center may be used as trainers for the other monitoring institutions in Montenegro

Hydrometeorological Institute

The institute has relevant expertise in environmental monitoring, but still needs more equipment for heavy metals and organic chemicals and training in using it. The institute has no accreditations and is not participating in any intercalibration exercises with other laboratories. The economy of the institute is very modest, and they have only funding for monitoring the lake in the summer months of the year. The institute should be involved in the preparation of the design of the overall monitoring programme, and should be responsible for measurements of physico-chemical parameters. In the future they could be seen as the responsible institution for measurements of all physico-chemical parameters.

It is recommended that:

- ③ The institute should be involved in designing the overall monitoring programme for physico-chemical parameters for the lake, and at this point be involved in the measurements of basic physico-chemical parameters in the Montenegrin part of the lake. In the longer term, when capacity building has been made and proper equipment purchased, the institute might also be responsible for measurements of heavy metals and organic chemicals.

7.2 Management arrangements

The management arrangements of the project are touched upon briefly below. Before the project is commenced, these issues should be agreed between the respective ministries and the Bank.

7.2.1 Project Secretariat

Normally when such projects are established, a project secretariat or project support unit is put in place in order to have a smooth implementation and a daily management of the project. At this point two Project Implementation Units are established in Albania and Montenegro, but when the project starts a secretariat should be in place, or recruited shortly after initiation.

The placement of the secretariat will also have to be decided, but it is not seen as something very important regarding the secretariat and its functions. Below can be seen of the basic tasks of the project secretariat:

- ③ The secretariat should be the daily management of the project, in contact with both implementing ministries on a regular basis.
- ③ The secretariat should prepare annual work plans and budgets
- ③ The secretariat should be able to draft terms of reference for consultants, negotiate rates and contract them.
- ③ The secretariat should be able to do procurement, according to both WB guidelines and procurement acts in the respective countries
- ③ The secretariat should be reporting on progress on the project on a regular basis (e.g. quarterly), both technically and financially
- ③ The secretariat act as secretariat for the Steering Committee, including sending invitations and writing the minutes the meetings. The agenda should be agreed between the two ministries even though a standard agenda would normally be used, reporting on progress etc.
- ③ The secretariat could set up a website for the project, enabling the public to be informed about progress and initiatives.

The staffing of the secretariat should as a minimum include the following:

- ③ Executive secretary, with at least 10 years of experience, including managerial and administrative experience from the private or public sector. It does not necessarily have to be a person with a background in engineering, chemistry, biology or environmental science, because more than just technical skills are needed. The executive secretary should be fluent in English.

- ③ Two environmental specialists, one from each country, with at least 6-8 years of experience in environmental management, and/or conservation issues. Both should be fluent in English.
- ③ An experienced accountant, familiar with procurement, in at least one of the countries. Should also be fluent in English.
- ③ An office manager/secretary, also fluent in English. Should be able to arrange workshops and basic logistics.

7.2.2 Project Steering Committee

As seen above, it is also proposed to have a Project Steering Committee (PSC) for the project.

The PSC could e. g. comprise representatives from the two ministries, the Regional Environment Agency Shkodra, Skadar Lake National Park, the municipality of Shkodra, the municipality of Podgorica, and the World Bank. When a proper management of the nature park on the Albanian side has been set up, the representative from the Regional Environment Agency could be replaced by a representative from the park.

The PSC approves annual work plans and budgets as well as progress reports. The Project Steering Committee meets quarterly or as needs arise. The chairman of the PSC should be a representative from one of the ministries, and it could be agreed that it would change every year between the two countries. The decisions should be taken by consensus and Terms of Reference/Rules of Procedure of the PSC should be agreed on at its first meeting.

8. References

Joint SAP, 2006. The strategic Action Plan for Skadar/Shkodra Lake – Albania & Montenegro. APAWA, SNV – Montenegro, CETI.

REC, 2004. Roles and Responsibilities of Skadar/Shkodra Stakeholders in Albania and Montenegro. REC project.

REC, 2005. Local Environmental Action Plan (LEAP) for Shkodra.

TDA, 2005. Lake Shkoder Transboundary Diagnostic Analysis – Albania & Montenegro. Royal Haskoning, Netherlands.

World Bank Group. 1998. Pollution Prevention and Abatement Handbook – Toward cleaner production. Washington D.C., USA.

World Bank, 1991. Environmental Assessment Sourcebook. Volume I: Policies, Procedures, and Cross-Sectoral Issues. World Bank Technical Paper Number 139. Washington D.C., USA.

World Bank, 2006. Draft Appraisal Document: Montenegro/Albania Lake Skadar-Shkoder Integrated Ecosystem Management Project.

ANNEX 1:

TERMS OF REFERENCE ENVIRONMENTAL IMPACT ASSESSMENT LAKE SHKODER/SCADAR INTEGRATED ECOSYSTEM MANAGEMENT PROJECT

I. BACKGROUND

1. Lake Shkoder/Skadar Background

Lake Shkoder/Skadar is a karstic lake of Neolithic origin. It is the largest lake in Balcan with a surface area that varies from about 370 to 540 km². Its watershed area is estimated at about 5,490 km², with about 80 % of this area in Montenegro and 20% in Albania. The lake is shallow, with an average depth of about 3 meters. The Moraca River in Montenegro is the largest tributary to the lake. Its average discharge is about 200 m³/s. Significant additional flows come from groundwater flows and springs that discharge in the northern part of the lake. The lake drains to the Adriatic Sea through the Buna / Boyana River. The estimated outflow is about 330 m³/s. In an 1846 storm, the River Drini diverted its primary channel into the Buna River a few kilometers below its origin in Shkodra Lake. The massive amounts of sediment this catastrophic change brought to the Buna River raised the channel bed substantially and increased the water residence time in Shkodra Lake. The resulting increase in water level in the lake flooded the surrounding lowlands and has maintained a higher lake level since that time. Currently water residence time is about 120 days.

The lake is a wetland site of international importance. It has a unique and rich flora and diverse fauna that includes numerous endemic species. It is one of the most significant wintering sites for water birds in Europe, including many species that are globally threatened. Ninety percent of the bird species are migratory. The lake has a diverse fish community with high productivity. Fishing is an important source of income for the local population.

The Albanian side of Lake Shkoder/Skadar is proclaimed “Managed Natural Reserve” and belongs to the fourth category (IUCN convention) of protection. In Montenegro the lake is proclaimed National Park. The lake is Ramsar site as well.

2. Overview of the ecological situation in Lake Shkoder/Scadar

Main pressures and threats

Lake Shkoder/Skadar and its basin are experiencing various impacts from different sources and facing numerous threats. The following have been identified: Pollution (industries, municipalities, solid waste, liquid waste), Hunting and fishing, Lakeshore development, Water management measures.

a. Pollution: *In general, the quality of the lake water is within acceptable (EU) limits, in part because of the high “turn-over rate” of the lake water. However, there are some areas where nitrate concentrations and oxygen depletion, sedimentation, and possibly heavy metal concentrations and persistent organic pollutants are a concern. This is particularly at the mouths of inflowing rivers and in areas where there are contaminated sediments from previous industrial activities. There may also be a problem of contaminated groundwater infiltrating into the lake. Overall, there are three main sources of pollution: chemical pollution by factories such as the KAP and Steelworks Niksic; organic pollution by the wastewaters from the cities and towns; and non-point-source organic pollution from agricultural runoff. Pollution is likely to increase with growing economies, increasing prosperity, and a steady population growth.*

b. Hunting and fishing: *Lake Shkoder is an important area for bird migration in the Mediterranean region. In recent years bird numbers have declined drastically. Uncontrolled hunting is one suspected cause for the decline in bird numbers. The fishing situation is characterized by over-fishing by both licensed and unlicensed fishermen, use of destructive methods, such as dynamite and electro fishing, lack of access through the Buna / Bojana River for migrating species, invasion of exotic species, potential toxic contamination, and habitat alterations. Strong decline of fish stock is observed. There is an indication that some fish populations are declining, which might be associated with over-fishing, and/or disturbance or pollution of key spawning sites.*

c. Unsustainable tourism: *Tourism related development is growing rapidly, particularly in parts of the Albanian side of the lake. Much of this development is unplanned and does not include measures to protect the environment. Tourism development is expected to grow even faster in the future with general economic recovery, and as a result of investments such as the rehabilitation of historic sites and buildings.. Unplanned and unregulated tourism development presents an environmental threat, but if the tourist facilities and attractions are set up in an ecologically sustainable way, negative impacts on flora and fauna may be limited. Impacts can even be positive if tourism earnings are invested in nature protection and development.*

d. Residential constructions on the lake shore: *In addition to tourism development, the growing economy has promoted individuals to build homes and businesses in attractive areas near the shores of Lake Shkoder/Skadar. Again, most of this development is unplanned and unregulated. If this continues unregulated, habitats will be destroyed and the wildlife disturbed by human influence.*

e. Big development projects on/ near the lake: *Ideas are being launched by both private investors and government agencies for development projects like marinas, tourist resorts and recreational areas along the lake shore. The negative impacts of these projects on flora and fauna and the lake ecosystem are likely to be big and irreversible.*

f. Projects changing the lake level and level dynamics: *There are proposals to dredge the Buna-Bojana and change the lake level and/or level dynamics. If implemented, this would have an enormous impact on flora and fauna as large wetland areas would disappear as the lake level was lowered.*

g. Illegal logging and tree cutting and over-grazing: *these are widespread in the lake’s basin and especially in AL side,. including within the protecting areas. Due to*

over –grazing the mountain pastures on both sides are partially degraded, which stimulates more active soil erosion.

II. GEF PROJECT

a. Project objectives

The *overall objective* of the Lake Shkoder Integrated Ecosystem Management Project is to assist the Governments of Albania and Montenegro in achieving more sustainable use of the natural resources of Lake Shkodra and its watershed. *The global environmental objective* of the project is to reduce pollution and conserve the lake and its biodiversity as an internationally important natural habitat, especially for water birds. Because of the complex nature of the lake's problems, the project pursues an integrated approach to land and water issues, by promoting cross-sectoral cooperation throughout the watershed. The project will achieve its objectives by implementing priority measures as identified in the Lake Shkodra National and Joint Strategic Action Plan prepared jointly by both countries.

b. Project Description, Activities, Outputs and Outcomes

The project will achieve its objectives through three pillars: (i) establishing and strengthening national and transboundary institutions, systems and capacity for effective ecological management; (ii) creating an enabling environment for local and national authorities to improve environmental regulation by building public awareness and support, and by helping local residents and businesses comply with the requirements; and (iii) helping to eliminate or reduce some of the most urgent existing threats to the Lake's ecosystem. The project includes both joint activities and "unilateral" activities

c. The Project consists of four components

Component A. Coordinating Lake Management. This component will help to put in place an institutional structure for coordinating protection and management of Lake Skadar-Shkoder and its natural resources. The establishment of a transboundary River Basin Authority as called for by the EU Water Framework Directive is likely to take years, and a phased approach should be used. The project will support the creation of several bilateral Working Groups to coordinate implementation of key actions called for in the 2003 Memorandum of Understanding and the joint Strategic Action Plan. Working Groups will be set up for: (i) design and establishment of a permanent transboundary institutional structure (including harmonization of policies, procedures and legislation as required); (ii) development of a lake-wide zoning and management plan (complimentary to the individual management plans which are legally required for both of the Protected Areas); (iii) designing and launching a lake-wide ecological monitoring program; (iii) developing and launching a public awareness-raising and education program; and (iv) preparing a coordinated strategy and plan to promote sustainable tourism development

Component B. Monitoring and Research: This component will support Technical Assistance, training, the purchase of equipment and incremental operating costs (on a declining basis) needed to put in place a permanent joint monitoring system, guided by management requirements and by the parameters outlined in the EU Water Framework Directive and the Ramsar Convention. Monitoring for specific purposes such as Avian Flu prevention and detailed ornithological surveys will also be included. The types and amounts of support provided will differ somewhat between the two countries, based on their existing capacity. An important part of the monitoring program will be establishing a common data base and networks for information exchange. The monitoring program and protocols will be designed and overseen by a transboundary Working Group, supported by the Secretariat, and implemented on the ground by the appropriate national institutions. The project will also finance a limited amount of “on-demand” research relating to specific management issues identified through the monitoring program, such as seeking the causes for declines of particular species or testing different approaches to habitat restoration. In the first year, the targeted research program will include a detailed socio-economic study and stakeholder consultations associated with developing a Process Framework relating to possible increased restrictions on fishing, as described in Section XXX. The research will be contracted to capable research institutions by the Secretariat on behalf of the Working Group, through a competitive process

Component C. Protected Area and Natural Resources Management. Ensuring that natural resources are used sustainably and limiting their ecological impact is an essential and challenging part of PA management is an important long term strategic goal for Lake Skader-Shkoder in both countries. The project will support development of sustainable tourism by helping to create an attractive and ecologically appropriate environment for nature-based tourism such as well-marked bicycle and hiking trails, bird observation platforms, informational signs and materials, restoration of cultural heritage sites and creation of two visitor centers ((preferably through rehabilitation of existing historic buildings). Other types of local economic development will be supported through partnership initiatives of the PA administrations such as providing technical assistance for organic agriculture and development of locally branded “Lake Skadar” specialty food products and handicrafts based on environmentally friendly and sustainable resource use. The project will support Technical Assistance, training, equipment and materials, and some incremental operating costs to strengthen the capacity of the PA Administrations and enable them to practice effective, integrated management of the PAs and their natural resources. This management will be carried out in coordination with one another (transboundary) and in cooperation with local governments and communities and other stakeholders. Specific activities will include: TA for assessment and revision of policies and regulations (Albania); the development of zoning and management plans for the PAs (to be incorporated into lake-wide zoning and management plans) and demarcation of zones; communications and other equipment to enhance management effectiveness on the ground; small scale infrastructure for PA management and tourism (including small visitor centers); and TA and incremental operating costs to establish and improve programs in areas such as tourism promotion/marketing, community outreach and livelihoods support activities, and education.

COMPONENT D. Urgent Environmental Investments . The project will provide financing to help remediate some hotspots which are identified as high priority in the joint SAP. GEF funding will either form part of a larger financing package (e.g. to remove or contain hazardous waste at the KAP aluminum plant site) or compliment, extend and broaden the benefits of activities being funded by others (e.g. wastewater treatment facilities for small lakeside villages and isolated restaurants, complimenting large projects to improve wastewater treatment for large cities and towns. In addition to addressing existing problems, the project will finance a pilot program to promote low input/organic agriculture in surrounding areas, as a means of preventing a resurgence of agrochemical inputs to the lake.

III. OBJECTIVE OF THE ASSIGNMENT

To carry out an Environmental Assessment that will identify any potential negative impacts of implementation of the proposed Lake Shkoder/Skadar Integrated Ecosystem Management Project , and to develop an Environmental Management Plan (EMP) which outlines the actions, approaches and procedures that will be undertaken by various stakeholders to avoid, reduce and mitigate these adverse impacts. The EA and EMP should meet the legal requirements of the Governments of Albania and of Montenegro, and of the World Bank (in accordance with WB Operational Policy 4.12).

IV. SPECIFIC TASKS

Consultant's specific tasks of the EIA are:

- Review the relevant Albanian and Montenegrin legislations and procedures relating to EA, and describe what legal instruments exist to prevent or minimize negative environmental impacts. Identify gaps, if any, between local laws, national laws and the requirements of the World Bank's Operational Policies relating to EA, and also between the local/national laws and any international conventions and agreements to which Albania and Montenegro are part (such as those covering trans-boundary lakes and wetlands). Description of the legislative and the institutional context in which the Project will be implemented.
- Description of the kind of activities that the project is expected to finance.
- Description of the kinds of positive and negative environmental impacts that may arise from these kinds of activities
- Outline options to mitigate or compensate the negative impacts on natural resources, the lake ecosystem and nearby terrestrial ecosystems, vulnerable species (particularly any rare and threatened or endangered species),
- Outline of the procedures that will be followed for carrying out environmental screening of the specific investments at the time that they are identified and for carrying out, approving and monitoring the implementation of investment-specific EAs/EMPs for those investments which require it.
- Develop an Environmental Management Plan based on the activities proposed in the project. The EMP should be written in a way to facilitate its incorporation into

the Project Implementation Manual. This EMP should focus on: Mitigation measures, institutional strengthening and monitoring.

- ⌚ Mitigation of environmental impact: Recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Estimate the impacts and costs of those measures. Consider compensation to affected parties for impacts that cannot be mitigated.
- ⌚ Institutional strengthening: Identification of institutional needs to implement environmental assessment recommendations. Recommend any additional support that should be provided to them so that the management and monitoring plans in the environmental assessment can be implemented.
- ⌚ Monitoring: Prepare arrangements for monitoring mitigating measures and the impacts of the project during implementation.

The description of these procedures should include:

- Description of any EA procedures required by Albanian and Montenegrin law, including identification of which agencies or parties are responsible for each part of these screening, approval, implementation and monitoring procedures
- An assessment of whether implementation of these legally required procedures would be sufficient to fulfill WB requirements as well.
- To the extent that the legal national procedures are not sufficient to meet WB requirements describe what additional procedures should be carried out under the project in order to ensure WB requirements are met
- An assessment of the capacities of the various parties identified, to carry out their responsibilities and where the capacity is not sufficient, give recommendations for capacity building measures to be funded by the project.

V. KEY PROJECT STUDIES

The following studies and papers will be available to the consultants:

Social Assessments (Montenegro and Albania): treats the social economic situation of the population in the catchments area, their means of living, natural resources and access of different stakeholders to these resources, their improving or adverse impact on nature, demography with regard to migration and emigration, cultural assessment, law enforcement and perspectives of the area's sustainable development.

Social Action Plan Operationalizes the Social Assessment findings for the Strategic Action Plan and the World Bank Project Appraisal Document. Its objectives were: identify potential socio-economic impacts of the project and appropriate mitigation measures; develop realistic socio-economic objectives, targets and indicators for the project; identify mechanisms for effective communication/outreach and stakeholder participation in project implementation; identify appropriate institutional arrangements for implementation of activities at community level.

Transboundary Diagnostic Analysis: a scientific-technical assessment of the state of environment and the trends in natural resource use and condition in Lake Shkoder and its watershed. It should identify and quantify the environmental threats to the lake, identify options to address the identified problems and develop strategic recommendations for the lake's conservation that fit the scope of the funding available for this project through the GEF, gather relevant physical, chemical, biological, and legal data about the lake, identify key natural resource and environmental data gaps and recommend the most practical and cost effective ways to fill these data gaps, predict the most important potential environmental impacts for altering lake water levels, the potential impacts to critical fish spawning and bird habitats, the relative importance of overfishing, destructive fishing practices, habitat change, and pollution as sources of the declines in commercial fish populations in the lake, inventory farming practices in the watershed and assess the impacts on water quality, propose a pathway towards a suitable, bilateral management structure for Lake Shkoder

Strategic Action Programme: aimed to assist the government institutions and other interested groups/institutions of Albania to define actions and projects in national level, aiming to improve the environmental management and supporting sustainable economic use of the natural resources of Shkodra Lake and its surrounding areas; to facilitate the provision of information and its exchange among the stakeholders, to create a large-based framework for future cross-border and cross-sectoral actions for the management of the lake and to define and describe the initiatives and procedures that should be taken for accomplishment of these objectives.

Assessment of the Management of Shared Lake Basins in Southeastern Europe/Capacity Building Paper”

Additional scientific papers (see Attachment)

VI. RELEVANT LAWS IN ALBANIA.

- Law “On the Land” (1991)
- Law “On Seeds and Seedlings” (1992)
- Law “On Forests and Forestry Police” (1992)
- Law “On the Service of Plants Protection” (1993)
- Law “On Protection of Natural Medical, Ether Oil and Tanifer Plants” (1993)
- Law “On Protection of Wild Fauna and Hunting” (1994)
- Law “On Protection of Horticulture Trees” (1995)
- Law “On Fishing and Aquatic Life” (1995)
- Law “On Pastures and Meadows” (1995)
- Law “On Water Reserves” (1996)
- Law “On the Regulatory Framework of the Water Supply Sector and of Disposal and Treatment of Waste Water (1996)
- Law “On Environment Protection” (2002)
- Law “On Protected Areas” (2002)
- Law “On Protection of Marine Environment from Pollution and Damage” (2002)

- Law “On Protection of Trans-border Lakes” (2003)
- Law “On Environmental Impact Assessment” (2003)

VII. RELEVANT NATIONAL AND LOCAL PLANS IN ALBANIA

- National Strategy for Tourism Development in Albania. Al Gov/WB
- Regional Economic and Social Development in the North of Albania and Perspectives of European Integration.
- Local Environmental Action Plan (LEAP) for Shkodra. REC, 2005
- Strategy of Economic Development of Shkodra Municipality. WB
- Regional Plan for Shkodra – Lezha 2005 – 2020. EPTIZA/EC
- Strategic Action Programme of Lake Shkoder –WB/APAWA

VIII. RELEVANT INSTITUTIONS IN ALBANIA

- Ministry of Environment, Tirana,
- Regional Environmental Agency Shkodra
- University of Shkodra
- Maize and Rice Institute Shkodra
- Regional Environmental Center for Central and Eastern Europe (REC), Project Office in Shkodra.
- University of Tirana, Faculty of Natural Sciences
- Hydrometeorological Institute of Academy of Sciences, Tirana,

IX. RELEVANT LAWS IN MONTENEGRO:

- Law on National Parks (Official Gazette of the RM, No.47/91, 27/94)
- Environmental Law (Official Gazette of the RM, No. 12/96, 55/00)
- Environmental Impact Assessment Decree (Official Gazette of the RM, No. 14/97)
- Law on Nature Protection (Official Gazette of the RM, No. 36/77,2/89)
- Decree on Protection of Rare, Scarced, Endemic and Endangered Plant and Animal Species (Official Gazette of the RM, No.36/82)
- Law on Freshwater Fishery, (Official Gazette of the RM, No. 39/76,51/76,34/88,29/89,39/89,48/91, 4/92, 17/92, 27/94)
- Law on Waters (Official Gazette of the RM, No. 16/95)
- Decree to Prohibit the Use of Vessels with Engine Power more than 4.5 KS by Physical Persons On Skadar Lake (Official Gazette of the RM, No.9/86)
- Decision on the Level and the Method of Payment of Charges for the Use of National Parks Assets, for Conducting Economic Activities and Providing Services (Official Gazette of the RM, No.31/02)
- Law on the Protection of Cultural Monuments (Official Gazette of the RM, No.47/91)

- Law on Agricultural Land (Official Gazette of the RM, No.27/94)
- Law on Construction (Official Gazette of the RM, No.55/00)
- Law on Local Self-Government (Official Gazette of the RM, No.75/05)
- Law on Inspection (Official Gazette RCG, No.50/92).

X. MOST IMPORTANT LAWS THAT WILL BE IMPLEMENTED FROM 2008 IN MN:

- Law on Environmental Impact Assessment (Official Gazette of the RM, No. 80/05)
- Law on Strategic Impact Assessment (Official Gazette of the RM, No.80/05)
- Law on Integrated Prevention and Pollution Control (Official Gazette of the RM, No.80/05).

XI. LIST OF RELEVANT PLANS AND PROGRAMS IN MONTENEGRO

- Physical Plan of Skadar Lake National Park (Official Gazette of the RM, No. 46/01)
- Program on Protection and Development of the Skadar Lake NP 2005-2010
- Master plan of Tourism Development, 2001
- Fishery Strategy, 2006

XII. RELEVANT ORGANIZATIONS IN MONTENEGRO

- Ministry of Tourism and Environmental Protection
- Public Enterprise National Parks of Montenegro
- Ministry of Agriculture, Forestry and Water Resources
- Ministry of Economic Development
- Local Authorities (3 municipalities: Podgorica, Bar and Cetinje)
- Nature Protection Institute
- Public Institution “Center for ecotoxicological researches”
- Hydrometeorological Institute
- Montenegrin Academy of Sciences and Arts
- Companies (Aluminum Plant etc.)

XIII. CONSULTANT’S REPORTING OBLIGATIONS

An inception report should be submitted two weeks after the contract signature, including an annotated outline of the contents of the EA and EMP and describing the methodology to be followed.

Draft final EA and EMP should be submitted four weeks after contract signature. This report should be submitted in English (in hard copies and in electronic format).

The draft EA and EMP will be publicly disclosed in both Montenegro and Albania, and the respective Project Coordinators will be responsible for providing the consultants with any comments received from the public and will agree with the consultants on which comments should be addressed/ incorporated in the final report. The consultant will submit the final report within 2 weeks of receiving the comments.

XIV. CONSULTANT'S QUALIFICATIONS

The consultant should have:

- Technical knowledge of environmental issues relevant to the project
- Demonstrated experience in preparing EAs and EMPs for similar projects, preferably including doing so in the context of projects to be financed by the World Bank
- Previous familiarity with the relevant laws and regulations of the Republic of Albania, and the Republic of Montenegro, will be an advantage.
- Good knowledge of the English Language

XV. DURATION OF THE ASSIGNMENT.

The assignment will require four weeks of work, to be completed within a period of 2 months. .

Attachment 1

Other Available Background Studies

- Dhora, Dh. & Sokoli, F. 2000. Liqeni i Shkodres – Biodiversiteti [Shkodra Lake – the Biodiversity]. UNDP, GEF, SHRMMNSH. Shkoder.
- Dhora, Dh. 2005. Liqeni i Shkodres [Shkodra Lake]. Camaj-Pipa. Shkoder.
- Karaman, G. & Beeton, A. 1981. The Biota and Limnology of Lake Skadar. Titograd.
- REC. 2003. Biodiversity database of Shkodra/Skadar Lake (Checklist of species with their conservation status). REC project.
- REC. 2004. Roles and Responsibilities of Skadar/Shkodra Stakeholders in Albania and Montenegro. REC project.
- Schneider-Jacoby, M., Dhora, D., Sackl, P., Savelic, D., Schwarz, U., Stumberger, B., 2004. Rapid assessment of the ecological values of Buna/Bojana Delta. EURONATURE, APAWA.
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- Dhora, D.H. and F. Sokoli. 2000. Shkodra Lake Biodiversity. Available from Shkodra University, Faculty of Natural Sciences, Shkodra, Albania. 80 pp. In Albanian.

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ANNEX B: CONSULTANT’S PERSONNEL

Mr. Ole K. Jensen, Team Leader
Mr. Jan Pock-Steen, Home Office Support

ANNEX C:

CONSULTANT’S REPORTING OBLIGATIONS

An inception report should be submitted two weeks after the contract signature, including an annotated outline of the contents of the EA and EMP and describing the methodology to be followed.

Draft final EA and EMP should be submitted four weeks after contract signature. This report should be submitted in English and Albanian language (in hard copies and in electronic format).

The draft EA and EMP will be publicly disclosed in both Montenegro and Albania, and the respective Project Coordinators will be responsible for providing the consultants with any comments received from the public and will agree with the consultants on which comments should be addressed/ incorporated in the final report. The consultant will submit the final report within 2 weeks of receiving the comments.

Annex 2 people met

Date	Institution	People met
15/02/07	<ul style="list-style-type: none"> LSIEMP Secretariat, Shkodra 	Mr. Agim Shimaj, Coordinator, Shkodra, Albania
20/02/07	<ul style="list-style-type: none"> Regional Environmental Center, Shkodra University of Shkodra 	Ms. Djana Bejko, Project Manager Dr. Marash Rakaj, Department of Biology-Chemistry
21/02/07	<ul style="list-style-type: none"> LSIEMP Secretariat, Podgorica Ministry of Tourism and Environment 	Mr. Viktor Subotic, Coordinator, Podgorica, Montenegro Mr. Sinisa Stankovic, Deputy Minister
22/02/07	<ul style="list-style-type: none"> Municipality of Podgorica Center for Ecotoxicological Research of Montenegro Hydrometeorological Institute of Montenegro Institute for the Protection of Nature 	Ms. Nada Mugosa, Head of Department for Physical Planning and Environmental Protection Ms. Danijela Sukovic, Deputy Director Mr. Radivoje Vuckovic, Vice Director Ms. Pavle Djuraskovic, Head of Department of Environment Mr. Vasilije Buskovic, Associated Expert Dr. Dragan Roganovic, Ms. Jelena Simicevic, Ms. Vesna Jovovic
23/02/07	<ul style="list-style-type: none"> Ministry of Agriculture, Forestry and Water Management Kombinat Aluminijuma Podgorica (aluminium factory) National Park Skadar Lake 	Mr. Zoran Jankovic, Director for Water Management Systems Department Dr. Marat M. Mursalinov, Chief Specialist for Ecology and Quality Control Mr. Zoran Mrdak, Director
26/02/07	<ul style="list-style-type: none"> NGOs, Montenegro 	Ms. Natasa Durakovic, "Green Home" Mr. Aleksandar Drljevic, "Greens of Montenegro" Mr. Darko Saveljic, "Center for the Protection and Research of Birds" Mr. Miodrag Lekovic, "Nvo Godinje"
27/02/07	<ul style="list-style-type: none"> Regional Environmental Agency, Shkodra Shkodra Fishery Inspection 	Mr. Dritan Dhora Mr. Rasim Suma, Fishery Inspector

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	<ul style="list-style-type: none">• Municipality of Shkodra	Mr. Ridvan Sokoli, Head of Economic Development Office
28/02/07	<ul style="list-style-type: none">• Institute of Hydrometeorology, Tirana	Prof. Dr. Mitat Sanxhaku, Director M. Sc. Emirjeta Adhami, Head of Environmental Department
	<ul style="list-style-type: none">• Ministry of Environment, Forestry, and Water Administration	Dr. Samir Dedej, Director of Nature Protection Policy Directorate
	<ul style="list-style-type: none">• University of Tirana	Dr. Sajmir Beqiraj, Hydrobiologist, Faculty of Science
	<ul style="list-style-type: none">• StEMA Project (EU)	Ass. Prof. Gunnar Pritzl, Team Leader

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ANNEX 3: Mitigation and Monitoring Plan

Mitigation and Monitoring Plan for construction of bicycle and hiking trails

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Construction	Destruction of habitats for endemic plants and animals.	The risk of destroying habitats is very small, but the area to be used for trails should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The trails should be placed, where any impact is minimized, without destroying the purpose of the trail.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Elevated noise level and disturbance of nesting birds	A minor and temporary increase in noise level will occur as a result of normal construction activities associated with trail development. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons.	No extra costs	No extra costs				Site inspection	
	Vegetation clearance, including possible removal of trees and shrubs	Clearing the vegetative cover will be necessary in some locations. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before forming the trails.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Operation	Elevated noise level and disturbance of nesting birds	Once the initial trail development is over, the level of noise should be barely noticeable as hikers disperse and use the system.	No extra costs	No extra costs	No installments			Site inspection	
	Potential problems with litter from tourists using the bicycle and hiking trails	Litter bins can be placed at regular intervals along the trails and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Providing easier access to prohibition zones at the banks of the lake	In some cases it might be necessary to fence the prohibition zones on land, as well as putting warning signs and mark the prohibition zones with signs. Furthermore, the rangers should control the trails with regular intervals and maps in the park regulations should indicate placements of prohibition zones.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Soil instability or changes in geologic substructure, disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility	A minor amount of soil displacement will occur due to the trail's construction. Soil disturbance should be minimal and mitigated by erosion control devices and the inclusion of switchbacks and meanders on steep slopes. The trail could result in some compacted, less-productive soil where it is being used. If further damage occurred during construction, that area could be reseeded with e.g. a native grass mix.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Establishment or spread of noxious weeds	The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed trail areas, trail completion could actually assist park employees in their control by allowing easier access into the affected areas.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Fecal contamination of surrounding areas	Latrines should be constructed at suitable places along the trails and a system for cleaning at regular intervals should be set up.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

Mitigation and Monitoring Plan for construction of bird observation platforms

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Construction	Destruction of habitats for endemic plants and animals.	The risk of destroying habitats is very small, but the area to be used for bird observation platforms should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the platforms should be chosen with care, minimizing the potential negative impacts, without destroying the purpose of the observation platforms.	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided.	Costs cannot be estimated at this point, before placement, dimensions and material of the platforms has been decided.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Elevated noise level and disturbance of nesting birds	A minor and temporary increase in noise level will occur as a result of normal construction activities associated with platform construction. Construction should occur during non-peak visitor use or on weekdays when visitation is less, and also take into account the nesting seasons.	No extra costs	No extra costs				Site inspection	At regular intervals during construction
	Vegetation clearance, including possible removal of trees and shrubs	Clearing the vegetative cover will be necessary at the chosen locations for the platforms. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before constructing the platforms.	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided.	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Operation	Elevated noise level and disturbance of nesting birds	There will be an elevated noise level in the operational phase as well, which makes the choice of location of the observation even more important. When maintained, colours matching the background, without light reflecting surfaces should be used for the construction.	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided	Park Management or contractor hired by Park Management	Park Management or contractor hired by Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Potential problems with litter from tourists using the bird observation platforms	Litter bins should be placed at the bird observation platforms, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.	Costs cannot be estimated at this point.	Costs cannot be estimated at this point.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works
	Providing easier access to prohibition zones at the banks of the lake	In some cases it might be necessary to fence the prohibition zones on land, as well as marking the prohibition zones with signs. Furthermore, the rangers should control the bird observation platforms with regular intervals and maps in the park regulations should indicate placements of prohibition zones.	Costs cannot be estimated at this point.	Costs cannot be estimated at this point.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Risk of contamination of soil during maintenance of platform (cleaning and painting) and leakage of impregnation substances from wooden building materials	During maintenance of the platform, spills of the impregnating substances should be collected by plastic covers on the ground or foundation of the platform. If made of wood, not freshly impregnated wood should be used, but reused or reutilized wood where leakage of impregnation substances is minimal, as some substances in impregnation are toxic to the environment.	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided	Costs cannot be estimated at this point, before placement, design and material of the platforms have been decided.	Park Management or contractor hired by Park Management		Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Establishment or spread of noxious weeds	The potential for the spread of noxious weeds may increase with enhanced visitor use of the park on both sides. If not existing, there might be a need for putting a Weed Control Plan in place. If noxious weeds exist in the proposed placement of the platform, platform completion could actually assist park employees in their control by allowing easier access into the affected areas.	Costs cannot be estimated at this point, before placement, design and material of the bird observation platforms have been decided	Costs cannot be estimated at this point, before placement, design and material of the bird observation platforms have been decided	Park Management In Albania it is not likely to be made before a management is in place	Park Management In Albania it is not likely to be made before a management is in place	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works
	Faecal contamination of surrounding areas	Latrines should be constructed at each bird observation platform and a system for cleaning at regular intervals should be set up.	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Costs cannot be estimated at this point, before placement and lengths of trails have been decided	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

Mitigation and Monitoring Plan for construction of visitor centers

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Construction	Contamination of surroundings during construction with all types of construction waste (building materials, packaging, solvents, paints, plastic, etc.)	A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.	Costs cannot be estimated at this point, before placement, design and material of the visitor center have been decided.	Costs cannot be estimated at this point, before placement, design and material of the visitor center have been decided.	Contractor hired by the Park Management or Project Secretariat	Park management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	Weekly during construction, and at decommissioning

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Destruction of habitats for endemic plants and animals.	The risk of destroying habitats is very small, but the area to be used for visitor centers should be properly investigated in order to avoid destroying habitats for endemic plants and animals. The placement of the centers should be chosen with care, minimizing the potential negative impacts. The visitor centers do not have to be placed close to prohibition areas but should be placed near access roads, as parking should be available for visitors.	Costs cannot be estimated at this point, before placement, design and material of the visitor center have been decided.	Costs cannot be estimated at this point, before placement, dimensions and material of the visitor center have been decided.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Elevated noise level and general disturbance	A minor and temporary increase in noise level will occur as a result of normal construction activities associated with center construction. Construction should occur during non-peak visitor use or on weekdays when visitors are fewer. Other mitigation measures are not necessary.	No extra costs	No extra costs				Site inspection	
	Vegetation clearance, including possible removal of trees and shrubs	Clearing the vegetative cover may be necessary at the chosen location for the center. This construction will alter some vegetation cover, but the impact is considered minimal, if the areas have been properly investigated before constructing the center.	Costs cannot be estimated at this point, before placement, design and material of the center have been decided.	Costs cannot be estimated at this point, before placement, design and material of the center have been decided.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Operation	Elevated noise level and general disturbance	There will be an elevated noise level in the operational phase as well, which makes the choice of location of the visitor center important. No mitigation measures are necessary, but it could be mentioned in the park regulations that noisy behaviour is generally not accepted inside the park and destroys the chances for observing wildlife at close range.	Costs cannot be estimated at this point, before placement, design and material of the visitor center have been decided	Costs cannot be estimated at this point, before placement, design and material of the visitor center have been decided	Park Management or contractor hired by Park Management	Park Management or contractor hired by Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Potential problems with litter from tourists using the visitor center	Litter bins should be placed at the visitor center, and a system should be set up to secure emptying on a regular basis. Furthermore, park regulations should emphasize that littering is not allowed and will be fined.	Costs cannot be estimated at this point.	Costs cannot be estimated at this point.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park staff in Montenegro. In Albania, the rangers will have the responsibility. The overall responsibility will be the Regional Environment Agency, until a park management is in place	Site inspection	Only considered a problem in the operational phase.

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Problems with domestic waste water from toilets at the centers, if no proper sanitation solutions have been installed	The visitor centers should be equipped with proper sanitation facilities, taking care of domestic waste water. It can either be in the form of a mini waste water treatment plant, as installed in the existing visitor center in Skadar Lake National Park in Montenegro, or a modern septic tank. If a septic tank solution is chosen, a system for emptying the tank should be set up, transporting the sludge to a safe disposal site outside the park.	The cost of either a mini waste water treatment plant or a septic tank solution cannot be estimated, without knowing the design and the planned capacity of the visitor center.	The cost of either a mini waste water treatment plant or a septic tank solution cannot be estimated, without knowing the design and the planned capacity of the visitor center.	Park Management or contractor hired by Park Management	Park Management in Montenegro. In Albania, the Ministry until a park management is in place.	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at decommissioning. Frequency during construction will depend on duration of works

Mitigation and Monitoring Plan for remediation of hazardous waste dump site at KAP

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Construction	Determination of content and amounts of waste	Pre-investigation or technical feasibility study, determining content and amount of waste, including options for removal and design of hazardous waste landfill. Any placement of the landfill will have to be consistent with the Spatial Plan for Podgorica Municipality	The pre-investigation is estimated to cost app. 80-100,000 US dollars. The budget for the construction of the landfill and the clean up cannot be determined before the pre-investigation has taken place.	The budget for the remediation and the construction and the operation of the landfill cannot be determined before the pre-investigation has taken place.	Contractor hired by the Project Secretariat	To be determined. If the landfill will not serve other than KAP Aluminium Plant, it could be the Municipality of Podgorica. If it is placed on the premises of KAP, they will operate it.	Ministry of Tourism and Environment	Site inspection	During construction and operation. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Movement of hazardous waste will create dust and spread the contaminated soil to adjacent land.	During the movement of the contaminated soil, modest spraying with water can be done, if dust is a problem. The waste is not considered a serious health hazard, but the proposed pre-investigation will determine the type of mitigation necessary.	The costs cannot be estimated, before amounts and type of waste has been properly determined.	The costs cannot be estimated, before amounts and type of waste has been properly determined	Contractor hired by the Project Secretariat	To be determined. If the landfill will not serve only KAP Aluminium Plant, it could be the Municipality of Podgorica. If it is placed on the premises of KAP, they will operate it.	Ministry of Tourism and Environment	Site inspection	Remediation and movement phase
	In case of movement in a season with increased precipitation, increased leakage of contaminants to groundwater and subsequently to the river and from there to the lake	It is proposed to do the movement in the months with lesser precipitation, e.g. during the spring and summer. If water is still a problem, water leaking to the bottom of the excavation can be pumped to a tanker, which should be emptied at a place, where the water will not go to the lake	It will not add costs to do it during the spring and summer	It will not add costs to do it during the spring and summer	Contractor hired by the Project Secretariat	KAP, if it is within their premises.	Ministry of Tourism and Environment		During construction. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Operation	In case of capping with impermeable membrane, risk for spreading to adjacent land and the river in case of flooding or landslide	According to information from Montenegro, the risk for flooding is very modest. It should be possible to avoid landslides by proper placement of the landfill.	No extra costs are implicated by proper placement of the landfill.	No extra costs are implicated by proper placement of the landfill.	Contractor hired by the Project Secretariat	KAP, if it is within their premises.	Ministry of Tourism and Environment	Site inspection	During construction.
	Contamination of groundwater resulting from leachate that can leak through the liner system.	A leachate control system should be put in place, with regular monitoring of leachate	The costs of a leachate control system should be determined when type of contamination, amount of material, and placement of landfill has been decided.	The costs of a leachate control system should be determined when type of contamination, amount of material, and placement of landfill has been decided	Contractor hired by the Project Secretariat	KAP, if it is within their premises, or contractor hired by the Project Secretariat	Ministry of Tourism and Environment or contractor hired by it.	The Leachate, which is a liquid that has passed through or emerged from the landfill waste, should be analyzed for relevant contaminants determined as a result of the pre-investigation	4-6 times per year

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Consistency with the overall land-use planning in the area.	The Municipality of Podgorica should be part of the preparations for the pre-investigation, and they should ensure that the placement of the landfill will be consistent with the spatial plan for Podgorica.	No extra costs.	No extra costs.	Municipality of Podgorica		Ministry of Tourism and Environment	Consistency with spatial plan should be checked	Before final approval of placement of landfill
	Landfill not large enough to accommodate the hazardous waste from KAP for a reasonable time (10 to 30 years).	Allocation of sufficient land for landfill. Depends on reliable production figures from KAP and whether others than KAP will be allowed to use the landfill for hazardous waste disposal.	No extra costs within KAP premises. Outside depending on area of land to be used.	No extra costs within KAP premises. Outside depending on area of land to be used.	Contractor hired by the Project Secretariat	KAP, if it is within their premises, or contractor hired by the Project Secretariat	Ministry of Tourism and Environment	Site inspection	Before final approval of placement of landfill

Mitigation and Monitoring Plan for treatment of wastewater from small lakeside villages and isolated restaurants

Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
Construction	Contamination of surroundings during construction with all types of construction waste (packaging, solvents, paints, plastic, etc.)	A waste management plan should be prepared, covering the whole construction phase. Waste containers with locks could be placed at the building site for different kind of waste, and frequent inspections should be done by the monitoring authority. A special container should be made for hazardous waste, incl. solvents, paints, and other toxic chemicals.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	. Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Park Management or contractor hired by Park Management	Park Management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Contamination of the lake with domestic waste water, containing fecalia, pathogens and contaminants (e.g. detergents, disinfectants, chlorine, etc.)	Different solutions for treating wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks. If septic tank solutions are used, a system for emptying the tanks should be put in place.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Park Management or contractor hired by Park Management	Park management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Destruction of recreational values because of odours, tainting of the water at outlets, etc.	First of all, and environmental awareness campaign is necessary in order to stop new construction projects on primarily the Albanian side of the lake. Secondly, the local environmental authorities on both sides of the lake prepare a prioritization list of possible projects, pinpointing hotspots	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Park management and Regional Environmental Agency in Albania. Park management and Montenegrin municipalities around the lake	Park management and Regional Environmental Agency in Albania. Park management and Montenegrin municipalities around the lake	Supervision and monitoring should be done by the park management and municipalities in Montenegro. In Albania it is the Regional Environmental Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works
Operation	Health risks near outlets	The local environmental authorities on both sides of the lake should see to it that the future monitoring programme analyses water samples for E. coli and coliforme bacteria in order to be able to give the public information on health risks in the lake	No extra costs	No extra costs	Monitoring teams from the different institutions. Shkodra University in Albania and Center for Ecotoxicological Research in Montenegro	Regional Environmental Protection Agency in Albania and municipalities around the lake in Montenegro	Monitoring teams from the different institutions. Shkodra University in Albania and Center for Ecotoxicological Research in Montenegro	Collect samples of water and analyze them for relevant bacteriological parameters	Once per month or in line with frequency for other parameters

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Phase	Issue	Mitigating Measure	Cost		Institutional Responsibility			Monitoring	
			Install	Operate	Install	Operate	Monitoring	How	When
	Oxygen depletion because of high organic content in waste water	Oxygen content should continue to be part of the monitoring programmes and be measured on a regular basis	No extra costs	No extra costs	Monitoring teams from the different institutions. Hydrometeorological Institute in Albania and Center for Ecotoxicological Research in Montenegro	Regional Environmental Protection Agency in Albania and municipalities around the lake in Montenegro	Monitoring teams from the different institutions. Hydrometeorological Institute in Albania and Center for Ecotoxicological Research in Montenegro	Analysis on water sample	Once per month or in line with frequency for other parameters
	Eutrophication because of high phosphorus content of waste water	As mentioned above, different solutions for treating the wastewater should be considered, including sand filters, mini wastewater treatment plants, and modern septic tanks.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Costs cannot be estimated at this point, before technical feasibility study has been prepared.	Park Management or contractor hired by Park Management	Park management	Supervision and monitoring should be done by the park management in Montenegro. In Albania it is the Regional Environment Agency, until a park management is in place	Site inspection	During construction and at finalization of works. Frequency during construction will depend on duration of works

