CRITICAL ECOSYSTEM PARTNERSHIP FUND

Environmental Impact Assessment
and
Environmental Management Plan

Date: January 12, 2014

CEPF Grant: #63851

Grantee: The Urban Research Institute

Project Title: Conservation of Biodiversity in Patoku lagoon, Ishmi and Mati River outlet through Integrated River Basin Management

Project Location: Patok, Albania

Grant Summary

1. Grantee organization: Urban Research Institute
2. Grant title: Conservation of Biodiversity in Patoku lagoon, Ishmi and Mati River outlet through Integrated River Basin Management

3. GEM number: 63851
4. Grant amount (US dollars). $180,000
5. Proposed dates of grant: January 2014-June 2015
6. Countries or territories where project will be undertaken: Albania
7. Summary of the project.

The proposed Integrated Watershed Management Plans (IWMP) for Mati and Ishmi river will define roles and responsibilities to be shared among the stakeholders, will set up management goals and objectives, and identify actions, measures and mechanisms that will ensure preservation and enhancement of Biodiversity in Patoku lagoon. IWMP for Mati and Ishmi Rivers will be supported by a Biodiversity monitoring plan that will help measuring the success and progress made in the implementation of the IWMP.

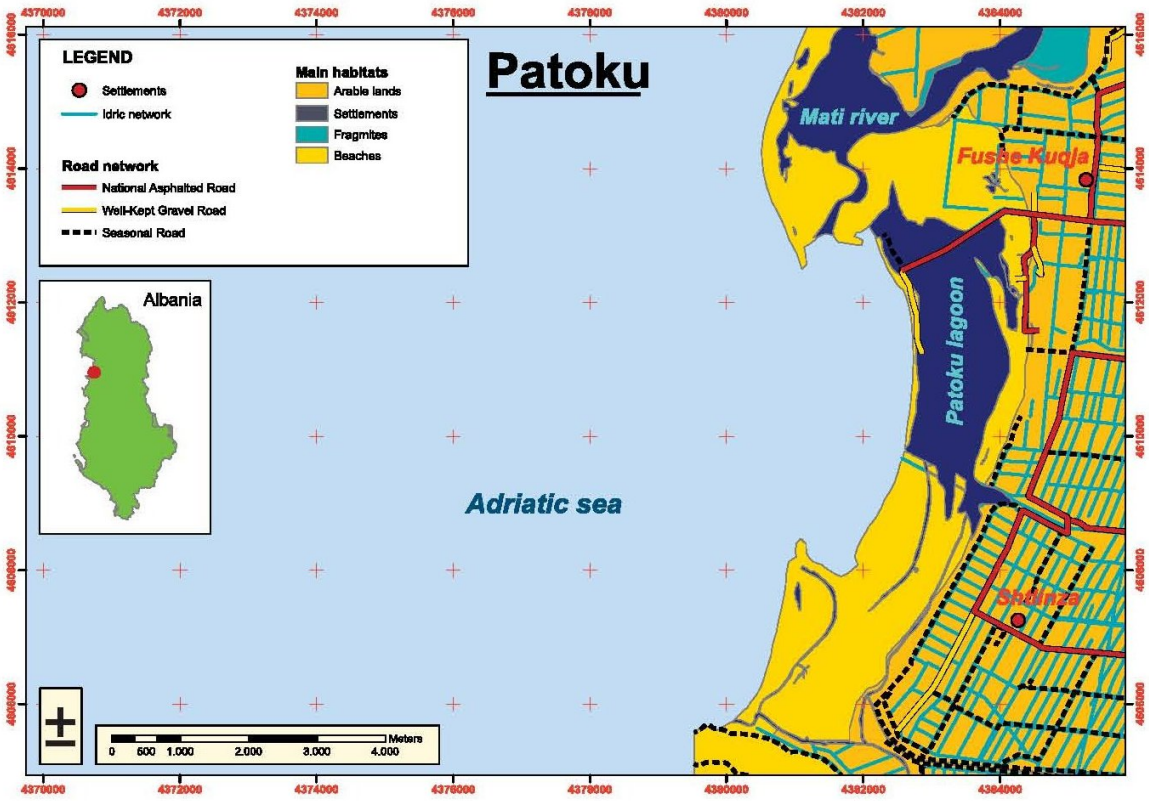
The proposed project activities will also aim at involving business sector in the watershed management, building up public-private partnerships and finding out mechanisms of Payment for Environmental Services (PES) at watershed level that will enable sustainable use of nature resources, preserve and enhance biodiversity.
If the proposed project will not be implemented, the Patoku lagoon and the estuarine waters of Drini Bay will continue to be further deteriorated and its biodiversity will be further losed. That's because all efforts made so far to stop ecosystem degradation of the Patoku lagoon and halt its biodiversity loss have failed to address the root causes of the threats, which are linked with past and today's developments in the two river basins of Mati and Ishmi that have created and greatly influenced the Patoku lagoon system. With no project scenario, legal and institutional responsibilities related to Patoku lagoon and Mati and Ishmi river basin management will continue to be not properly defined and shared among the central and local government authorities; legal, institutional and financial instruments and mechanism how to ensure the sustainable use of natural resources and biodiversity enhancement in the coastal lagoons and in their inland watersheds will not be searched and established; local capacities on how to manage Patoku lagoon and to protect and enhance its biodiversity will not be built; awareness raising activities will not be able to influence change in behavior and attitude of local communities and stakeholders towards nature and Biodiversity conservation. With no project scenarios it will not be possible to demonstrate examples of best practices that contribute to biodiversity protection and enhancement and to enable local communities to improve their livelihood and increase benefits deriving from sustainable development and management of coastal ecosystems.

8. Date of preparation of this document: January 12, 2014

9. **Status of area to be impacted:** This section should describe the applicant's understanding of the site.

General information for the project area

The lagoon of Patoku and the surrounded area covers about 400 ha and is separated in two parts by a dyke on which is built a road. The northern part named "Patok i vjeter" resembles more a gulf, almost closed by a sand bar. The southern part is artificially communicating with the sea. The recent offshore sand bank of alluvial deposits is exceptionally rich in terms of biomass and hosts a great number of waders. The halophyte vegetation of the lagoon of Patoku encompasses the following associations: Cakilo-Xanthietum italici, Salicornietum europeae, Arthrocnemetum glauci, Agropyretummediterraneum, Juncetum maritini, Scirpetum maritini and Phragmitetum communis. The algae found in the lagoon are mainly Zostera noltii. The main crustacean decapods sampled in the area are Gennadas elegans, Solenocera membranacea, Penaeus trisulcatus, Sicyonia carinata, Sergestes arcticus, Lucifer typus. The fish found in the lagoon are flathead mullet, thinlip mullet, leaping mullet, European sea bass, scald fish and imperial scald fish. The high biodiversity of the saltmarshes in this area represents a reservoir for migratory waterfowl and waders. Herons, pelicans and cormorants and other species have been seen. Fox and marten have also been reported in Fushe Kuqe Reserve.



Lagoon of Patoku is one of the Biodiversity Hotspots of Albania and is known for its regional (Mediterranean) and European Importance: it is one of the Specially Protected Areas of Albania identified by UNEP and RAC/SPA since 1996; it is an Important Bird Area (IBA) and it

is one of the EMERALD sites of Albania. It is one of the most important wetland sites in Albania for waders (Order Charadriformes), and one of the two sites where Slender Billed Curlew (Numenius tennuirostris) has been recorded so far in Albania. Patoku lagoon and the estuarine waters between Mati river (in the north) and Ishmi river (in the south) have become an hotspot area for Sea Turtles in the Mediterranean basin, being used as an important feeding place for the sea turtles, especially for Loggerhead Sea Turtle Caretta caretta.

On the other hand, Patoku lagoon, based on the environmental analysis and biodiversity assessments conducted by a number of policy documents, such as UNEP-METAP (1995), RAC/SPA (1996), CAMP, ICZM, and the Management Plan of the Patoku-Fushe Kuqe Managed Nature Reserve (2008) is considered a biodiversity hotspot area currently under threat. Recently the Government of Albania has enhanced the protection of the lagoon ecosystem and extended the protection surface to 5700 ha (Decision 995 dated 3.11.2010) as Managed Nature Reserve of the lagoon complex ecosystem Patok – Fushekuqe- Ishem.

Most important threats to Biodiversity of Patoku lagoon are related with the past and recent developments in the two river watersheds (Mati and Ishmi) that have both contributed through centuaries to create the estuarine and lagoon ecosystem of Patoku.
Reduction of sediment discharge of Mati and Ishmi rivers due to hydropower dams (Ulza and Shkopeti) and water supply dam (Bovilla water reservoir), as well as from the exploitation of sands and gravel from the main two rivers and their tributaries has greatly influenced the coastal geomorphology and ecosystem stability of Patoku lagoon system. Recent plans for further development of hydropower projects in the Mati and Ishmi river watershed will contribute to further deterioration of the costal geomorphology, leading to acceleration of coastal erosion process in Patoku area.
Wetland reclamation during the 50' of the last century aiming at opening of new arable land have reduced wetland area and change water regime of the lagoon, and consequently, have drastically impacted ecological integrity of the Patoku lagoon.
Urban and industrial developments inside the watershed areas of Mati and Ishmi rivers over the last 60 years have resulted in the increase of pollution and further deterioration of the ecosystem. Democratic changes in Albania after years 90's of the last century, and free demographical movement from the inland mountain areas towards the coastal zone, and main urban areas, such as Tirana and its surroundings have dramatically increased the pollution of Ishmi river and estuarine waters of Drini bay, including Patoku lagoon.
All sewage waters produced from one third of the country's population, including industrial waters are discharged untreated into Ishmi river and its tributaries, and finally ending up at sea, making the downstream of Ishmi a "dead river" and changing dramatically quality of the estuarine waters. Not only the sewerage waters, but also majority of the solid waste produced in the urban and rural areas of the Ishmi and Mati rivers are discharged into streams and rivers itself and from them to the sea, which has greatly influenced life in

littoral and lagoon system of Patoku. Plastics are often ending up in the digestive apparatus of sea turtles, causing sometimes death of individuals of the endangered species.
In addition, hunting activity, in the way it has been conducted in the last more than 20 years, unregulated and out of control, has greatly impacted the wintering and breeding communities of water birds in the Patoku lagoon and its adjacent wetland areas. Although having the legal status of a Managed Nature Reserve, Patoku lagoon and Fushe-Kuqe area, is not an area under any appropriate management regime. Illegal logging, illegal constructions, poaching, and unregulated tourism and recreational activities are other threats to the Biodiversity of Patoku lagoon.
Based on such as analysis, it is obvious that protection and enhancement of Biodiversity in the Patoku lagoon is greatly influenced by the developments and interventions made in the watersheds of Ishmi and Mati rivers that have created the coastal lagoon system of Patoku. Addressing most of the threats to Biodiversity of Patoku Lagoon can only be ensured through preparation and implementation of the Integrated Ishmi and Mati River Watershed Management Plans, in a participatory approach, by a broad consultation, engagement and commitment of all public institutions (central and local government authorities), stakeholders, main land users and businesses occurring in the watershed.
Root-cause analysis of the current and potential threats and assessment of all current and future (planned) activities and development projects within the Mati and Ishmi watershed will help better understanding of the standing conditions and cumulative impacts of the past, existing and future (planned) interventions within watersheds and improve planning process .
Analysis of legal and institutional arrangements related with the integrated watershed management will help finding gaps and improve the institutional set up, legal and regulatory framework, establish dialog and cooperation among stakeholders and institutions, building up public-private partnerships for protection and sustainable use of biodiversity and nature resources within the watershed.

10. **Approach**: This section will describe proposed actions during the project. Specifically, what do you intend to do and how will you do it?

Project Approach

The current situation shows a serious lack of concerted actions against the above identified threats and serious lack of integrated management of natural resources. Therefore it is evident the need for integrated and sustainable measures aiming to reduce and control the overall impact of human activities and boost the biodiversity of the area.
The project will fulfill this goal by achieving three objectives which would also compose the three project components:

1. Assessment of the current biodiversity status and preparation of Integrated Watershed Management Plan of Ishmi and Mati River and Patoku lagoon;
2. Implementation of best management practices to enhance biodiversity and to reduce its threats through development of rehabilitating initiatives;

3. Raising awareness among stakeholders in order to ensure the sustainability of the conservation efforts.

The first project activities will focus on gathering thorough information on the area, analyzing it and draft the planning document of the watershed. More precisely the activities include:

• A thorough assessment of project area including physical environment, biodiversity, threats, extensively studied human induced pressures,
• Inventory of key environmental parameters,
• Legal and institutional gap analysis,
• Preparation through participatory approach of the Integrated Watershed Management Plan (IWMP) and its adoption from the responsible authorities,
• Public consultations with key stakeholders for the preparation of the IWMP and
• Development of a set of indicators measuring the success of the implementation of the IWMP.

Based on the above information, some best practices will be developed, through participatory approach, aiming to implement concrete conservation actions with an immediate impact on the areas biodiversity. The practices to be implemented are:

• enforcement of recently adopted legislation on hunting ban in Patoku lagoon,
• creating potential breeding grounds for waterbirds,
• clean-up actions along the lagoon and the sandbar joining the Ishmi river outlet.
• mark-up of ecoturist signals in Patoku-Fushe-Kuqe-Ishem Nature Managed Reserve and
• training local administration staff and ecotourist guides.

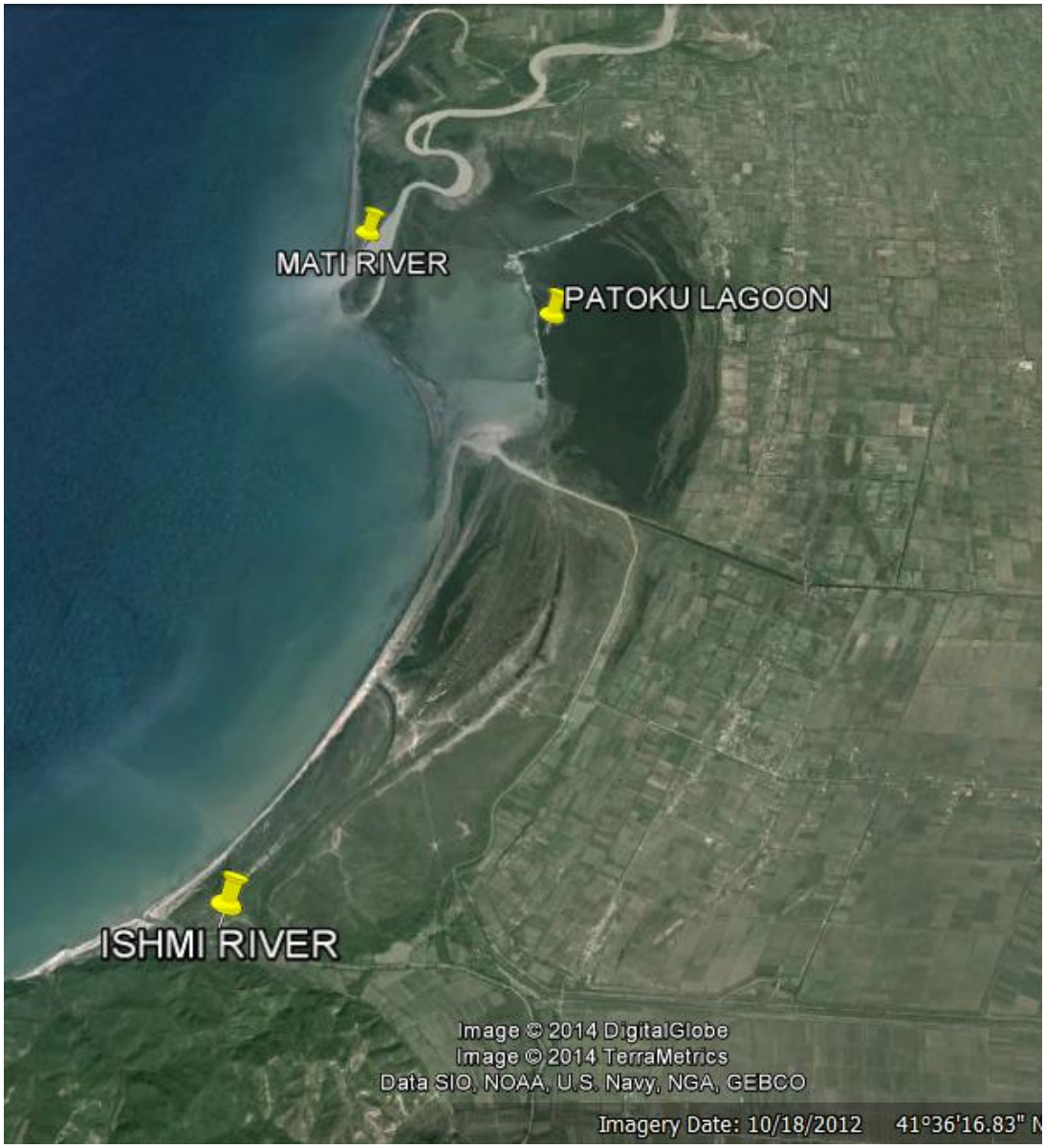
Those actions will be accompanied by other activities aiming to raise awareness, promoting areas biodiversity and ensuring the long-term sustainability of conservation efforts. Among the actions its worth mentioning:

• Open winter and summer school for junior experts,
• Organization of Patoku day,
• Publication of the on-line newsletter for Patoku lagoon and finally
• National Conference on Patoku, Ishmi and mati River and IWMP.

Finally the project will result in measures of IWMP to be adopted and implemented by responsible authorities while rehabilitation initiatives will improve the current biodiversity status. The clean-up action will offer a model for cooperation among local authorities, private business (Environmental NGOs, Albanian Recyclers Associations, local communities) while activities on raising awareness will make Patoku lagoon and Fushe- Kuqe-Ishem Nature Managed Reserve an attractive site whose biodiversity is worth to be protected and enhanced.
Imposing the hunting ban would be difficult since it needs full synergy in actions from the local authorities and other institutions. Ensuring this synergy has shown to be difficult in Albania since it needs a full understanding of the importance of biodiversity conservation.

Link to CEPF Investment Strategy - The project relates with CEPF Strategic Direction 2, establish the sustainable management of water catchment and the wise use of water resources with a focus on the priority corridor of Southwest Balkans.

More specifically it is linked with Investment Priority 2.1 Contribute to and establishes Integrated River Basin Management (IRBM) initiatives for pilot basins and replicate best practices to reduce the negative impacts of insufficiently planned water infrastructures. Implementing the rehabilitation initiatives with the scope of sustainable management of the waters of the lagoon with an irreplaceable biodiversity and with high socio – economic profits, makes up for a two-sided priority in empowering the public-private partnership.
In addition the project is closely related to the strategic investment of CEPF also because it aim to empower the role of civil society in replicating initiatives with direct impact in promoting best practices on wise use of waters and other ecologic resources offered by river basins.



Satellite images of the project area

Actions with likely environmental impacts of the proposed project

In order to meet the objective of the proposed project adequate and balanced actions are foreseen. These actions will be undertaken in the project area are likely to have some impacts into the environment. The actions with possible environmental implications are:

1. Placement of nesting platforms in the lagoon,, facilitating the breeding of waterfowls and serving as a roosting site for wintering waterfowl's species.
2. Clean up action undertaken in Patoku lagoon and Ishmi River outlet in partnership with national recycling businesses.
3. Improvement of the existing hiking trails in Patoku Protected Area

Description of the actions

Placement of nesting rafts for terns and gulls

Several species of colonially nesting birds visit the area during spring and summer months but they do not nest there due to the lack of nesting habitats/sites to be available for those colonially nesting birds. Among them we would mention several species of terns including Common Tern *Sterna hirundo*, Little Tern *Sterna albifrons*, Gull-billed Tern *Sterna nilotica* as well as Black Tern *Chlidonias nigra* and Whiskered Tern *Chlidonias hybridus.*

Little Tern *Sterna albifrons*

Common Tern *Sterna hirundo*

Usually, the above species prefer nesting on islands covered with sand, mud and shell debris and with sparse halophytic vegetation. This typical habitat is currently not freely available for nesting birds in Patoku lagoon. The existing habitats are both very near to the road and thus frequently disturbed by people or and with very easy access from mammal predators which could be detrimental for any bird colony.

Whiskered Tern *Chlidonias hybridus*

Black Tern *Chlidonias nigra*

Placement of woody platforms

Nesting platform for Terns

For the above reasons, we believe that offering artificial nesting habitats/sites, in the form of floating rafts, for both colonially and territorially nesting birds would have an immediate impacts with some of the colonially birds potentially nesting in the area. Besides, this action would further forge the relationship with local fishermen in order to have them as our allies in our contribution for preservation and enhancement of the area's biodiversity. Furthermore, the artificial platforms would serve also as roosting sites for wintering or stopover water birds. The presence of migratory, wintering and nesting birds might serve also as a good precondition for developing ecotourism activities during all year seasons.

Our criteria for the raft platform's location would be (1) placed in inner lagoon of Patoku wetland complex and nearby fishermen posts in order to be guarded by them, (2) sufficiently isolated by water over a period of years to deter access by mammalian predators and (3) observable from a distance to minimize disturbance to nesting birds.

The wooden platform measured 5 m × 5 m with approximately 25 m^2 of potential nesting area (Figure above). The platform would be fixed with the bottom through chains linked in the four corners of the raft. The deck will be covered with a layer of about 2.5 cm of mixed sand and gravel and shell debris occurring in the lagoon's shoreline. Objects for sheltering chicks from potential predators and summer burning sun will be placed on the deck too.

Necessary operations with possible environmental impacts include:

- Transport (vehicles) of the platforms to the sites;
- Placement of the platforms at the sites;

Clean up action in Patoku lagoon and Ishmi River outlet (in partnership with national recycling businesses).

The project area needs some waste cleanup actions. In supporting the project aim several clean up measures will be undertaken in the project area with the focus especially in the water ways such as Ishmi River outlet. Such actions will be organized with the participation of the local stakeholders, such as schools, local governing institutions and NGO-se. An important asset that will be also engaged in the waste cleanup and management is the National Association of Waste Recycling, by providing necessary equipments and logistic for the waste cleanup and final disposal.

Recyclable waste streams will be used from the recycling industry meanwhile other fractions will be safely disposed at regional landfill of Bushati.

Such action will bring direct improvement into the ecosystem and reduce the human impact in it. In the curse of the proposed project, adequate waste management approach within the project area will be discussed in the trainings and stakeholders involvement actions.

http://www.shqiptarja.com/foto/85655.jpg

Necessary operations with possible environmental impacts include:

- Access in the waste cleanup areas;
- Collection and transport of the waste out of the project area;

Improvement of the existing hiking trails in Patoku Protected Area

Use for recreational and ecotourism is an integral part of the proposed project and will help to improve the ecosystem management in the area. Due to adequate natural values and resources for ecotourism the project area has a potential to bring significant benefits to the local users and enhance the biodiversity protection.

Several hiking routes already exist in the project area and there is no need to open new routes rather than closing some of them. In this context in the project course a specific hiking route plan will be developed (about 15 -20 km). The hiking plan must match with the proposed project objectives and enable the ecotourism development and protection of the environment especially habitats.

Necessary operations with possible environmental impacts include:

- Trails clean up and improvement (minor vegetation cuttings) when necessary and placement of wood reinforcements in channels or unstable mud zones;
- Placement of the sings and guiding information;

- Placement of garbage bins;

11. **Anticipated impact:** this section will describe the impact and how this impact has been determined.

Based on the nature and extend, the above proposed actions are likely to have minor environmental impacts. These impacts are short term and will not bring any adverse effect into the ecosystems of the project area. Possible environmental impacts in each action are explained at the below matrix.

	Proposed action	Env. implications	Environmental impacts	Comments
1	Placement of nesting rafts for terns and gulls	• Transport (vehicles) of the platforms to the sites; • Placement of the platforms at the sites;	• Temporary noises and gases from the vehicles • Temporary disturbance of the species during the operations	Minor/short - term impacts
2	Clean up action in Patoku lagoon and Ishmi River outlet	• Access in the waste cleanup areas; • Collection and transport of the waste out of the project area;	• Temporary disturbance of species from the peoples presence during the cleanup day; • Temporary noises and gases from the vehicles	Minor/short - term impacts
3	Improvement of the existing hiking trails in Patoku Protected Area	• Trails clean up and improvement (minor vegetation cuttings) when necessary; • Placement of wood reinforcements in channels or unstable mud zones; • Placement of the sings and guiding information; • Placement of garbage bins;	• Cutting of shrub trees branches to open the trails corridor; • Temporary disturbance of the species during the operations	Minor/short - term impacts

All above mentioned actions are in line with the project area protection status and complement with it.

12. **Mitigation measures**: Describe measures that will be taken to mitigate negative impacts.

	Proposed action	Environmental implications	Environmental impacts	Proposed mitigation measures	Responsibility	Costs of mitigations in US$
1	Placement of nesting rafts for terns and gulls	• Transport (vehicles) of the platforms to the sites; • Placement of the platforms at the sites;	• Temporary noises and gases from the rafts transport vehicle • Temporary disturbance of the species during the operations	• Small engine and new transport vehicle (Piaggio Porter 500 cc) will be used to transport the rafts; • Avoid the long staying of the vehicle in the protected area with proper planning of the transport within the protected area; • Actions shall be implemented during the low biodiversity activity seasons;	Project developer organization	2100
2	Clean up action in Patoku lagoon and Ishmi River outlet	• Access in the waste cleanup areas; • Collection and transport of the waste out of the project area;	• Temporary disturbance of species from the peoples presence during the cleanup day; • Temporary noises and gases from the vehicles	• Well organized cleanup actions and training to avoid unnecessary habitat disturbance; • Site supervision and guiding during the cleanup actions; • Small engine and new transport vehicle (Piaggio Porter 500 cc) will be used to transport the rafts; • Avoid the long staying of the peoples and vehicle in the protected area; • Actions shall be implemented during the low biodiversity activity seasons;	Project developer organization	600
3	Improvement of the existing hiking trails in Patoku Protected Area	• Trails clean up and improvement (minor vegetation cuttings) when necessary; • Placement of wood reinforcements in channels or unstable mud zones; • Placement of the sings and guiding information; • Placement of garbage bins;	• Cutting of shrub trees branches to open the trails corridor; • Temporary disturbance of the species during the operations	• Well planned trails and interventions to avoid unnecessary cuttings and disturbance; • Site supervision and guiding during the trails improvement actions; • Actions shall be implemented during the low biodiversity activity seasons;	Project developer organization	1000

13. **Actions to ensure health and safety**: Describe actions that will be taken to ensure the health and safety of workers as well as the site. Include a description of waste management and/or disposal.

The project activities are likely to have small risk in the health and safety of the workers. During the project activities all the employed staff and workers will be ensured. Specific training for the health and safety will be conducted to the workers.
There are two phases of the waste management in the project area. The first action is related with the proposed project activities, that includes the clean up action of the rivers and channels (especially Ishmi River outlet) and the second phase is related with the long term management of the waste. Recently approved waste management legislation has started the implementation but still enforce need to be done to enforce it. A positive development to facilitate the waste management is the establishment of the recycling industry.
For the management of the waste under the cleanup action under the proposed project will be managed with the local government and recycling industry. A specific waste cleanup plan will be drafted in the project course and ensure adequate management of the waste. In long term prospective local government and PA authority will be guided and helped to cooperate with the recycling industry and beneficiaries to manage the waste within the project area.

15. **Permission of the landowner**: Please verify permission of the landowner to undertake actions on the site, and verify that you have the required permits to undertake this work.

There are no private landowners implicated on the three actions foreseen by the project. The land, where the activities would take place belongs to the state and permissions from the state authorities will be ensured in the course of the project.

16. **Consultation**: This section aims to outline the range of informed consultations that the grantee has had both with experts to optimize the potential for success, and with stakeholders, particularly local communities, who are potentially affected by the proposed actions. Include dates of consultations.

Once the proposed project is approved adequate consultation will be ensured with all stakeholders. A specific Consultation Plan will be drafted prior the process.

17. **Disclosure**: CEPF requires that safeguard documents are disclosed to affected local communities and stakeholders prior to project implementation. Please describe efforts to disclose this impact assessment and environmental management plan and provide dates.

Once the proposed project is approved adequate consultation will be ensured with all stakeholders. A specific Consultation Plan will be drafted prior the process. All information will be disclosed according the CEPF policies.

14. **Monitoring and Evaluation**: This section aims to outline what steps the proponent will take to monitor and evaluate the impact of the proposed intervention.

	Proposed action	Environmental impacts	Proposed mitigation measures	Monitoring action	Responsibility	Costs of mitigations in US$
1	Placement of nesting rafts for terns and gulls	• Temporary noises and gases from the rafts transport vehicle • Temporary disturbance of the species during the operations	• Small engine and new transport vehicle (Piaggio Porter 500 cc) will be used to transport the rafts; • Avoid the long staying of the vehicle in the protected area with proper planning of the transport within the protected area; • Actions shall be implemented during the low biodiversity activity seasons;	• Checking the vehicle parameters and conditions; • Supervising the field operations;	Project developer organization	2000
2	Clean up action in Patoku lagoon and Ishmi River outlet	• Temporary disturbance of species from the peoples presence during the cleanup day; • Temporary noises and gases from the vehicles	• Well organized cleanup actions and training to avoid unnecessary habitat disturbance; • Site supervision and guiding during the cleanup actions; • Small engine and new transport vehicle (Piaggio Porter 500 cc) will be used to transport the rafts; • Avoid the long staying of the peoples and vehicle in the protected area; • Actions shall be implemented during the low biodiversity activity seasons;	• Drafting and implementation of the planning and trainings • Checking the vehicle parameters and conditions; • Supervising the field operations;	Project developer organization	600
3	Improvement of the existing hiking trails in Patoku Protected Area	• Cutting of shrub trees branches to open the trails corridor; • Temporary disturbance of the species during the operations	• Well planned trails and interventions to avoid unnecessary cuttings and disturbance; • Site supervision and guiding during the trails improvement actions; • Actions shall be implemented	• Drafting and implementation of the trails plan; • Supervising the field operations;	Project developer organization	1000

			during the low biodiversity activity seasons;			

References:

http://www.thegef.org/gef/sites/thegef.org/files/Images/gef/turtle.jpg
http://jargo.itc.cnr.it/PROGETTI/zoneumide/?p=77&language=en

REPUBLIKA E SHQIPËRISË
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Nr. 64 Prot. **Tiranë, më 16. 02. 2007**

Vendimi nr. 1. Nr. 241 Regj.

ÇERTIFIKATË

Në mbështetje të vendimit të Këshillit të Ministrave Nr. 268, datë 24.04.2003 "Për çertifikimin e specialistëve, për vlerësimin e ndikimit në mjedis dhe auditimin mjedisor":

"Etleva BODINAKU"

Çertifikohet për hartimin e raporteve të vlerësimit të ndikimit në mjedis, për të kryer auditimin mjedisor, për hartimin e ekspertizave për probleme mjedisore dhe thirrjen si ekspert për të vlerësuar një raport të vlerësimit të ndikimit në mjedis ose rezultatet e një auditimi.

MINISTRI

Lufter XHUVELI

REPUBLIKA E SHQIPERISE MINISTRIA E MJEDISIT PYJEVE DHE ADMINISTRIMIT TE UJERAVE TIRANE