ACTION A7: ENVIRONMENTAL IMPACT ASSESSMENT

1. PROJECT: «ACTIONS FOR THE CONSERVATION OF COASTAL HABITATS AND SIGNIFICANT AVIFAUNA SPECIES IN NATURA 2000 NETWORK SITES OF EPANOMI AND AGGELOCHORI LAGOONS, GREECE» - GENERAL INFORMATION, OBJECTIVES AND STUDY AREA

The current study of Strategic Environmental Assessment was conducted in the frame of Action A.7. of Life+ Project **"LIFE 09 (NAT/GR/000343) - Actions for the conservation of coastal habitats and significant avifauna species in NATURA 2000 network sites of Epanomi and Aggelochori Lagoons, Greece"** (Project acronym ACCOLAGOONS).

The project is implemented in the frame of LIFE+ Nature and Biodiversity 2009 with 75% of financing coming from Life Fund sources and the remaining 25% coming from the following partners' own contribution:

- Region of Central Macedonia (ex-Prefectural Authority of Thessaloniki) (Coordinating Beneficiary)
- Organization for the Master Plan and Environmental Protection of Thessaloniki (OR.THE.)
- "Balkan Environment Center"
- "OMIKRON Planning, study and management of environmental and technical works, Ltd"

The beneficiary responsible for implementation of Action A.7 is the private company "OMIKRON Planning, study and management of environmental and technical works, Ltd" with the Short name "OMIKRON LTD".

The project "Actions for the conservation of coastal habitats and significant avifauna species in NATURA 2000 network sites of Epanomi and Aggelochori Lagoons, Greece " is divided in the following main intervention categories and actions:

A. Preparatory actions, elaboration of management plans and/or of action plans

- ACTION A.1 Sign of Memorandum of Understanding with land owners of the project area (site 1 & 2)
- ACTION A.2 Management plan of the priority habitat type *1120 "Posidonia beds (Posidonion oceanicae)" and of other marine habitat types of the project marine zone.
- ACTION A.3 Restoration plan of the Epanomi Lagoon functions and the technical specifications to implement restoration.
- ACTION A.4 Development and use of digital infrastructures for collection, processing and diffusion of pollution data in the study area.
- ACTION A.5 Management Plan of the breeding and resting habitats of priority / important bird species at both sites
- ACTION A.6 Visitor management plan
- ACTION A.7 Strategic Environmental Assessment

C. Concrete conservation actions

ACTION C.1 Installation of environmentally friendly moorings in coastal waters at both sites of the project.

ACTION C.2 Restoration of Epanomi Lagoon functions.

ACTION C.3 Litter removal from the Epanomi Lagoon area.

ACTION C.4 Environmental interpretation (technical) works

D. Public awareness and dissemination of results

ACTION D.1 Publicity, Information material and dissemination actions

ACTION D.2 Establishment of stakeholders' e-Participation tool

E. Overall project operation and monitoring

ACTION E.1 Project organization and management

ACTION E.2 Establishment of a monitoring system for the marine habitat types

ACTION E.3 Monitoring of the water quality at sites 1 & 2 of the project area

ACTION E.4 Monitoring of bird and amphibian species and habitats at Aggelochori and Epanomi Lagoon

ACTION E.5 Networking with other projects

ACTION E.6 After Life Conservation Plan

For the overall organization and management of the ACCOLAGGONS project has been established a Scientific Committee with the No. 03/2472/15-11-2010 decision of the ex-Prefect of Thessaloniki consisting of the following members:

1. Oikonomidis Georgios, member of the Scientific Committee on behalf of the Coordinator Beneficiary "Region of Central Macedonia"
2. Xantzaridou Anastasia, member of the Scientific Committee on behalf of Beneficiary "Organization for the Master Plan and Environmental Protection of Thessaloniki"
3. Takavakoglou Vasileios, member of the Scientific Committee on behalf of Beneficiary "Balkan Environment Center"
4. Mantzavelas Antonios, member of the Scientific Committee on behalf of Beneficiary "OMIKRON Planning, study and management of environmental and technical works LTD"

The aim of the current study is the assessment of the environmental impacts of all proposed measures and interventions by the Actions A.2, A.3, A.5 and A.6, as included in the Project's Preparatory actions and elaboration of management plans and/or of action plans (see above).

The Study Area of Actions A.2, A.3, A.5 and A.6 is delimited within the protected areas of Aggelochori and Epanomi lagoons which are part of the wider administrative area of Municipality of Thermaikos.

2. SHORT DESCRIPTION OF THE WORKS DERIVING FROM ACTIONS A.2, A.3, A.5 AND A.6

ACTION A.2 Management plan of the priority habitat type *1120 "Posidonia beds (Posidonion oceanicae)" and of other marine habitat types of the project marine zone.

The management plan elaborated by this action includes the definition of management goals and description of the appropriate measures and works to be fulfilled and also the development an Action plan for achieving good conservation status of the priority habitat type *1120 "Posidonia beds (Posidonion oceanicae)" and of other marine habitat types of the project marine zone.

During the implementation of this plan, in accordance with the principles of management (IUCN 2003, Kakouros et al. 2004), the following tasks were completed:

- recording of the present situation in the areas of the project
- creation of baseline data for the presence, coverage and spatial distribution of habitats, through detailed mapping of Posidonia beds.
- estimation of conservation status of the priority habitat type *1120.

ACTION A.3: Restoration plan of the Epanomi Lagoon functions and the technical specifications to implement restoration

The action includes the definition of the aims of the restoration, the functional evaluation of each wetland habitat including the functional evaluation of ditches and creeks that feed into the lagoon, the description of the measures to restore the degraded functions, as well as the technical specifications of the proposed works.

The aim of the restoration plan is the definition of the goals and measures for the restoration of Epanomi lagoon. In particular, the restoration plan focuses on:

a) To determine the most appropriate restoration solution to reach the highest level of habitat diversity and conservation of the avifauna's populations.
b) To identify all necessary measures to restore the functions of Epanomi lagoon.

ACTION A.5 Management Plan of the breeding and resting habitats of priority / important bird species at both sites

The action includes recording actions, the aims, the rational, the methods and the action plan for the restoration of the breeding and resting habitats of priority / important bird species. The objective of the management plan is the conservation and increase of the bird populations of species of Annex I of the Directive 2009/147/ EC, which reproduce at both the Special Protection Areas (SPAs) of Epanomi and Aggelochori. The above objective will be achieved by managing the reproduction, breeding and resting habitats of the bird species, through the planning and the implementation of measures and regulations in the short/long run.

ACTION A.6: Visitor Management Plan

The action includes inventorying, analysis, and evaluation of the present state and estimation of the carrying capacity as well as the development of an integrated Visitor Management Plan (Determination of entrances, trails and footpaths and visitor target groups, environmental information infrastructure, actions / interventions of

information, training, awareness and development of ecotourism activities and Development of a monitoring system).

The general aim of the Visitor Management Plan is to create a proper frame of prerequisites and propose an integrated plan with all the necessary infrastructure, interventions, actions and operational framework, so that tourism will add not only to the protection of the environment, but also to the economic and social progress of the study area, through an eco-tourist perspective.

3. ESTIMATION - EVALUATION OF THE ENVIRONMENTAL IMPACTS FROM PROJECT'S ACTIONS

The aim of the present study is the evaluation of the environmental impacts of all the proposed measures and directions deriving from Actions A.2, A.3, A.5 and A.6. The evaluation was carried out according to the criteria and directions proposed by the Directive 2001/42/EC on "the assessment of the effects of certain plans and programmes on the environment". The likely significant effects of the proposed works were assessed in regard with the environment, including criteria such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

In general, works deriving from Actions A.2, A.3, A.5 και A.6 of the Project LIFE 09 (NAT/GR/0034) "Actions for the conservation of coastal habitats and significant avifauna species in NATURA 2000 network sites of Epanomi and Aggelochori Lagoons, Greece" are expected to have a significant positive effect on all the above examined environmental factors.

Main positive effects on environmental factors are:

Biodiversity

- new fauna habitats created by plantations and construction of islets,
- support to the food web by creation of fresh water ponds and channels,
- habitat protection by the floods,
- confrontation of threats on flora and fauna species by management actions on human activities, by access limitation of visitors on proposed routes and by public information

Population and human health

- pleasure of visitors and familiarity on information and observation of avifauna species
- attracting the interest of visitors on eco-touristic approach and knowledge about Protected areas
- attracting the interest of local populations about promoting the value of wetland areas

Soil

- Sediment retention, reduction of pollutants and soil stabilization resulted by the creation of a regulatory zone and the fresh water ponds

- Good soil quality as a result of litter removal actions
- Control of soil erosion and damaged vegetation by regulation of grazing activities and definition of entrances and routes

Water

- Improvement of water quality status resulted by operation of regulatory zone and its plantations of vegetation and created water ponds and channels
- Controlling of garbage disposal by actions of raising awareness and information and definition of certain routes.

Air

- Reduction of noise and pollutants inside P.A. and close to avifauna nests resulted by regulation of uncontrolled vehicle driving and definition of certain entrances and routes, as well with awareness and information actions.

Material assets

- Increase of visitors to restaurants and taverns by promoting the observation of avifauna species and other eco-touristic actions (routes etc)

Cultural heritage

- Increase of visitors at ancient places close to P.A. by subsumption of places with cultural interest in defined routes.

Landscape

- Improvement of landscape by plantations of vegetation, control of vegetation damage and garbage throwing, as well with awareness and information actions.

However, some impacts were identified in face of the construction of the proposed technical works from Actions A.2, A.3, A.5 and A.6.

Main negative effects on environmental factors are:

Biodiversity –Air –Soil –Water –Landscape

- Disturbance on fauna species caused by excavation and construction vehicles, during the construction of works for the restoration of the hydroperiod and the improvement of hydraulic features and the creation of habitats for bird species,,
- non-compliance with the compiled technical specifications and spatial planning of (technical) works and the proposed routes.

Population and human health

- Complains about the restrictions coming out of the definition of certain routes and entrances and blocking of the vehicles access

Material assets

- Complaints by restrictions on economical active stakeholders inside P.A., such as restaurant and tavern owners or graziers

In order to minimize these impacts, certain precaution and confrontation measures were proposed to be implemented, as well as the development of a monitoring system per thematic category.

4. PRECAUTION AND CONFRONTATION MEASURES OF THE ENVIRONMENTAL IMPACTS FROM THE ACTIONS OF THE PROJECT

Biodiversity, Flora, Fauna

- Plantations of vegetation for the creation of a regulatory zone, in order to deal with the removal of vegetation
- Construction of technical works during July and August, in order to deal with the nuisance during the non-reproduction period of the avifauna
- Strict compliance with the compiled technical specifications and spatial planning of (technical) works

Population and Human Health

- Wider information of visitors concerning alternative ways to access the beaches of the area, in order to deal with possible reactions due to the disruption of the vehicles transit through the wetland
- Restoration of current roads after the completion of the construction works.

Soil

- The products produced from the excavations of the works from Action A.3, will be entirely used for the creation of islets and the slopes of the channels, so as not to require any place for the deposition of excavated materials
- Strict compliance with the compiled technical specifications and spatial planning of (technical) works

Water

- Construction of the proposed fresh water ponds during the summer, when the flow of channels is minimum or even zero.
- Strict compliance with the compiled technical specifications and spatial planning of (technical) works

Air and climatic factors

- Places with products of excavations and temporary material deposits should be occasionally soaked, especially during dry periods
- Avoidance of long-term deposition of materials at any work site

Material assets

- Encouragement of the local population and businessmen to be involved with economic activities related to ecotourism (tours etc)

Cultural heritage

There are not any impacts.

Landscape

- Hiding of the worksites, as much as possible
- Strict compliance with the compiled technical specifications and spatial planning of (technical) works

5. DEVELOPMENT OF A MONITORING SYSTEM

Biodiversity, Flora, Fauna

- Change of habitat area (%)
- Rate of reduction or increase of protected species populations of protected species (for each one if possible)
- Loss of fauna species (%)

Population and Human Health

- Number of complaints per year for the disturbance from noise pollution and lack of actions for garbage collection and waste management (liquid and solid)

Soil

- Number of restored places/Number of interventions
- Number of infrastructures

Water

- Change of water balance
- Change of the physico-chemical status of all surface and coastal waters
- Change of the chemical status of all surface and coastal Waters
- Monitoring of the hydromorphological elements coastal waters

Air and climatic factors

- Number of Days that exceeded the quality limits of air pollutants

Material Assets

- Change of land use,
- Change of land value near the study area.
- Number of new residents.

Cultural heritage

- Number of visitors at such places.

Landscape

Monitoring of landscape will be implemented according to all the proposed monitoring parameters, by the Actions A.2, A.3, A.5 and A.6.