Ministry of Public Works, Transport and Telecommunication

Saranda Gateway, Albania
Environmental Impact Studies and Environmental Impact Assessment
Draft Environmental Impact Assessment Summary

May 2007
1 Executive summary

The Saranda Gateway project is part of the World Bank supported Integrated Coastal Zone Management and Clean-up programme which aims at protecting the value and productivity of Albanian coastal and marine environmental and cultural assets and promote sustainable economic development.

The objective of the Saranda Gateway project is to support the transformation of Saranda's downtown port into a dedicated ferryboat and passenger terminal in order to facilitate the access of passengers and vehicles to Albania's valued southern coastal zone.

The transformation of Saranda Port to a tourism and commercial gateway to south Albania involves the following elements:

- Re-location of the existing cargo jetty in the Bay of Saranda to a refurbished all-cargo berth facility inside the Bay of Limioni;
- Conversion of the existing cargo berth at Saranda into a cruise liner berth;
- New yacht marina.

1.1 Description of proposed project

1.1.1 Limioni Bay

The detailed works at Limioni are shown in Figure 1.1 and include replacement of the existing deteriorated cargo quay and an extension to a total length of approximately 100m. The piles for the extension have been constructed as have the major part of the rock slope. A preliminary assessment of the potential environmental impacts have been prepared as part of the present project. The work can be resumed when the Ministry of Environment has issued a no-objection statement which will allow the Municipality to issue a construction permit.

The engineering task included physical modelling of Limioni Port to assess the need for a breakwater. The conclusion of the study was that safe operation and stay at the berths in Limioni Port can be made without a protecting breakwater.

It is assessed that no dredging is necessary for the new cargo quay.
1.1.2 Saranda Bay
The detailed works in the Bay of Saranda include a new cruise liner terminal, see Figure 1.2. The existing 60 m long cargo quay will be refurbished and a 120 m extension made to the south to accommodate cruise liners.

Dredging will be performed down to 9 or 10 m below sea surface. It is expected that the total amount for dredging is less than 10,000 m$^3$.

1.1.3 New yacht marina
The marina proposed in the town master plan for Saranda is not feasible due to significant social impacts related to the removal of the public beach. This concern was also expressed by the public during the Public Consultation held on 8 March 2007.

A separate study should be made to study the required marina size and alternative marina locations.
1.2 Pre-construction activities

The following pre-construction activities shall be carried out:

- Remove known UXOs (UneXploded Ordnances)
- De-mining of area to be dredged in Saranda
- Establishment of dump site for dredged material
- Move fresh fruit market

1.3 Description of the current environment

The current environment has been described based on available data, studies and the results of the performed field investigations covering benthic flora and fauna, water and sediment quality, and archaeological survey. Topographic and bathymetric surveys have been carried out and the results presented as baseline maps.
1.3.1 Marine sediment

Sediment samples were taken and analysed partly in Albania and partly in Italy. The level of both PAH and TBT is very high in the inner part of Limioni Bay where both the fishing port and the military port is situated, see Figure 1.3. The level of TBT is also high close to the main passenger ferry quay in Saranda Port.

![Location of high levels of PAH (red dots) and TBT (blue dots) in the sediment](image)

1.3.2 Water quality

Water quality measurements were carried out during the course of this project. They show that the total coli-form bacteria are found to be less than 220/100 ml and the faecal coli are found to be less than 110/100 ml. This indicates that the bathing water quality is acceptable compared with EU requirements.

The composition of marine vegetation indicates no massive eutrophication. The establishment of a sewage collector in 2003 has obviously stopped most of the discharge of sewage into Saranda Bay.

1.3.3 Heavy metal

The content of heavy metals in the water samples taken inside the project area is generally below or close to the EU water quality criteria. The elevated values at station in the North-eastern part of Saranda Bay could possibly be related to an outlet of sewage or wastewater in this area, see Figure 1.4. The stations in the inner part of Limioni Bay exhibit high values of copper, which is expected to be related to the mooring of fishing vessels in the port. The water samples were also analysed for TBT and all values were below the detection limit of 0.01 µg/l.

1.3.4 Archaeology

The project area was surveyed by side-scan sonar, magnetometer and by divers to identify any important archaeological objects at the seabed. The conclusion from the study is that no archaeological objects of significant importance are present in the project area.
1.3.5 Marine flora

The benthic vegetation was investigated by a major diving and sampling inspection in the project area. The vegetation comprises seagrass, macro-algae and epiphytes on leaves and rhizomes of, especially, the seagrass *Posidonia oceanica*. The seagrass beds are the most widely distributed and the most important habitats in the project area. Seagrass communities play a key role in terms of primary production, nutrient cycling, sediment stabilisation, absorption of wave energy, and provision of “nursery” habitat. The area in front of the passenger terminal is characterised by relatively little seagrass and dead mattes whereas the area on the marine headland between Saranda and Limioni represents the environmentally most valuable area, see Figure 1.5.
1.3.6 Benthic fauna

From a general consideration of the benthic fauna in Saranda and Limioni bays, investigated by divers and biologists, the species richness is low and the abundance relatively high in muddy sea beds, while in sea beds covered by *Posidonia* the contrary situation is found with relatively high species richness and low abundance. Figure 1.6 shows the most sensitive areas of benthic macro-fauna in the study area.

![Figure 1.6 Map of the most sensitive areas(A, B, C and D) of benthic macro-fauna in the study area](image)

1.4 Assessment of potential impacts

The potential impacts of the port development project on the environment are divided into two groups: The temporary effects that occur during construction and the permanent impacts that mainly occur during operation of the port.

1.4.1 Temporary impacts

De-mining

The impact of de-mining comprises blocking of the area for sea-traffic and the risk of un-intended detonations with corresponding damage to the flora and fauna. This impact is considered minor, because the flora and fauna will regenerate to its original level within a short time.

Archaeological survey

The contractor is obliged to work under the supervision of a Government approved archaeologist.

Sediment spill

During dredging works for deepening of the berth at the cruise liner terminal about 10,000 m$^3$ of soft sediments will have to be moved. Using a normal method with backhoe and barge and applying good management practices the spill rate will be maximum 10 %, i.e. about 1,000 m$^3$.

The area affected by sediment settling is expected to be maximum 4 km long (along the coast). The width of the plume will increase from about 100 m at the dredger to about 800 m at the distance of 4 km. In this area the typical sedimentation rate will be 200 g/m$^2$/day which will not have significant
negative impact on the benthic habitat. The average concentration of suspended sediments is estimated to be within the order of 120 mg/l and sensitive fish will leave the area during the works.

**Contaminant release**
During dredging of sediments different contaminants will be released to the marine environment. The potential release of nitrogen, phosphorous and of TBT and PAH has been estimated. Taking the moderate degree of contamination and the relatively short duration into account it is assessed that the potential release of contaminants will not have any measurable environmental effect.

**Noise, emissions and dust**
During the construction phase the heavy vehicle traffic will increase due to transport of construction materials. Impacts in terms of locally high levels of noise and emissions are foreseen with negative impacts on living quality for residents but also for tourism. Working hours will be restricted according to national standards. Construction activities during dry weather conditions may give rise to sand and dust nuisance for the housing in the vicinity of the construction sites.

**Human activity**
Local transportation in Saranda will be affected negatively due to the increased construction traffic with heavy gear. This will also have negative effects on the tourism activities. The same is valid for Limioni where constraints can be expected regarding limited access to the fishing harbour during construction.

The construction traffic will result in excessive noise, emissions and dust along the fresh fruit market and will also increase the risk of accidents. Therefore, Saranda Municipality together with the stakeholders need to find an alternative and acceptable location for the fresh fruit market so that this can be moved prior to initiation of the construction works in Saranda Port.

### 1.4.2 Permanent impacts

**Impact on benthic habitat**
The burial of habitat by the foot print of the cruise liner terminal is very small and comprises relatively common soft bottom habitat. After construction the impacts are minimal as no major discharges of pollution are expected.

The effect of a possible breakwater on the benthic habitat is severe as it would cover part of a valuable *Posidonia* habitat. However, the engineering studies showed that the breakwater will not significantly change the present calm conditions in Limioni Port and thus it is recommended not to construct a breakwater as part of the project.

**Littoral changes**
The Saranda beaches are the main landscape features that might be affected by marine structures. However, they will not be affected by the new passenger terminal because the wave climate on the beaches will be unchanged, the water circulation in Saranda Bay will remain unchanged and the long-shore transport of sediment will be unchanged.

**Noise, emissions and dust**
The traffic generated by the cruise liner terminal will generate more noise and emissions, particularly during high season and during embarkation and disembarkation. Moving the bulk terminal from
Saranda to Limioni will reduce the impacts in Saranda and increase them correspondingly in Limioni.

The city of Saranda will experience an overall increase in traffic, which will result in corresponding negative impacts on the living environment in the city. The existing traffic routes through town will be used by the tourist busses going to and from Butrint.

**Social and cultural impacts**

In general, new or expanded port facilities in a developing nation are welcomed, because such projects provide new jobs and bring an influx of commerce to the region. However, improvements, expansions and industrialisation may upset the local cultural, ethnic, historical and religious tradition.

Due to the increased traffic in particular with buses, Saranda Municipality shall together with the stakeholders find an alternative and acceptable location for the fresh fruit market.

### 1.5 Do-nothing alternatives

No development in Limioni port will leave the half constructed quay as a ruin and will represent a constraint for any alternative development including the construction of the new cruise liner terminal in Saranda Port. The site of interrupted construction work gives a negative aesthetic impression.

Avoid construction of the new terminal in Saranda will eliminate impacts on the marine environment and the environment in the inner city of Saranda during construction, however, it will also hamper the development of tourism. Further, passenger traffic and traffic of heavy goods and bulk will have to share the same quay.

The requirement for more ship draft at the existing quay will require dredging activities also in this do-nothing alternative. The dredging may even be larger in the do-nothing alternative because the existing quay wall is at lower water depth. The new quay will be placed approximately 7 m further out on the slope of the seafloor.

Summarising the above it is assessed that the do-nothing alternative will imply more negative effects to the city than the project will cause if tourism is increasing.

### 1.6 Alternative construction techniques

Alternative construction concepts of the new quay for Saranda Port were assessed, i.e. a piles, sheet-pile and block wall. The sheet-pile solution was found to be more environmental friendly than the other alternatives and is also preferred from the engineering point of view.

### 1.7 Environmental Management Plan (EMP)

A management plan for all phases of the project is prepared, i.e. from activities prior to construction, construction, and operation. The plan includes for instance a list of specific mitigating measures and a monitoring plan with detailed description of parameters, location and frequency of the sampling. The location of the monitoring stations for noise and sea water during construction is shown in Figure 1.7. The management plan also proposes a periodically reporting system that will serve the authorities as well as the public.
Key issues are:

- **De-mining**  
  Activity shall be carried out by a specially trained and licensed company

- **Dredging works**  
  Contractor is obliged to perform work under the supervision of a government approved archaeologist. If monitoring shows that spill or release of contaminants is too high mitigation measures shall be introduced by the Contractor, e.g. application of silt curtain or reduction of overflow from barges.

- **Waste and sewage**  
  Management plans shall be followed both during construction (Contractor) and during operation (Saranda Port).

- **Air emission**  
  To be minimised by the Contractor using for instance strict vehicle control and controlled fuel.

- **Noise**  
  To be minimised by the Contractor using low noise equipment and following the national standards. Noise monitoring to be made at two location, see Figure 1.7.

- **Reporting**  
  Saranda Port is responsible for preparing and disseminating the findings of the EMP activities.

### 1.8 Public consultation process

As part of the EIA process, public consultations are held before as well as after the publishing of the draft version of the EIA. The public consultation procedures within an EIA process are described in the Wold Bank regulations as well as in the Albanian Act on Environmental Impact Assessment, No. 8990 of 2003. The time schedule for the public consultation for the Saranda Gateway project is presented in Table 1.1.
Figure 1.7  Location of monitoring stations
  Blue: Noise measurement
  Red: Sea water sampling

Table 1.1  Time schedule of public consultations

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Jan 07</td>
<td>Commencement of project</td>
</tr>
<tr>
<td>08 Mar 07</td>
<td>Public Consultation, Saranda (held)</td>
</tr>
<tr>
<td>21 May 07</td>
<td>Announcement of publication of draft EIA and of public review period (planned)</td>
</tr>
<tr>
<td>21 May 07</td>
<td>Start of public review period (planned). Publication of the draft EIA report.</td>
</tr>
<tr>
<td>15 Jun 07</td>
<td>Deadline for written comments that should be answered at the Public Debate (planned)</td>
</tr>
<tr>
<td>22 Jun 07</td>
<td>End of public review period (planned)</td>
</tr>
<tr>
<td>26 Jun 07</td>
<td>Public Debate, Saranda (planned)</td>
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