**Sector:** Rehabilitation of the tourist coastline

**Title of the project:** Rehabilitation of the Tunisian tourist coasts: the case of the Island of Djerba

**Intervention zone:** Tourist coasts on the Island of Djerba

---

**PROJECT DESCRIPTION**

**Presentation of the problem:**
The main problem Djerba is confronted with is the marine erosion, which will be increased by the elevation of the sea level. To preserve the dynamics of the beach tourism on the Island of Djerba, it is imperative to rapidly find appropriate and sustainable solutions.

**Objectives:**
Restore the natural balance of the tourist beaches and the coastline and ensure their sustainability. The restoration of the natural equilibrium and the return to a situation when the beaches were complete entities will convey a new dynamism to a tourism product characteristic for this part of the Island of Djerba.

**Contribution to the adaptation to climate change:**
The beaches of Djerba are among the most vulnerable tourist beaches in Tunisia and are seriously affected especially in the northeast of the island. On certain parts of the coast, the marine erosion is particularly strong leading to the retreat of the coastline of about 80 cm each year. This project will help to avoid the loss of beaches and tourism infrastructure and will protect them against the climatic hazards such as the rise of the sea level.

**Main components of the project:**
- Studies, calibration of a model and monitoring of the evolution of the beaches during one year
- Beach nourishment project in a 1000-meter long pilot area.
- Continuation of the project in 500 meter steps between the Hotel Dar Djerba in the southeast and the Hotel Ulysse Palace in the northwest.

---

**PROJECT IMPLEMENTATION**

**Implementation:** Coastline Protection and Development Agency (APAL)

**Institutional partners:** Ministry of Environment, Ministry of Tourism, Ministry of Equipment, ONTT.

**Implementation period:** 3 years

**Priority of the project:** High

**Monitoring indicators:** feasibility study, insurance system

---

**COSTS / BENEFITS OF THE PROJECT**

**Project costs**
3 MDT for the pilot operation on a 1000 m stretch of the coastline

**Risks and vulnerability due to non-action:**
Continuous loss of beach space which will tend to disappear over the next years and further decrease of the beach tourism activities on the Island of Djerba.
**Sector:** Tourism and water resources

**Title of the project:** Water resources management in the tourist industry and construction of a small-scale seawater desalination plant for 2000 beds based on renewable energies.

**Intervention zone:** Tourism zone of Djerba

---

**PROJECT DESCRIPTION**

**Presentation of the problem:**
Water consumption in the tourist industry increases considerably in dry and sunny climates such as in Tunisia. The average tourist in Tunisia consumes 500 liters of water every day; this is about nine times more than an average Tunisian and represents 1% of the available water resources of the country. Therefore, tourism infrastructures use an important part of the drinking and irrigation water; this situation has been the subject of several studies and evaluations. The conflicting interests of the different sectors and tourist industries related to water consumption needs to be controlled and well managed to avoid problems, which tend to arise in the main tourist season.

**Objectives:**
Based on the principles of sustainable development, the project aims to provide the tourist industry with an autonomous use of water through the construction of a desalination plant. This will allow the industry to have access to non-conventional, non-perishable water resources and to use renewable energies.

**Contribution to the adaptation to climate change:**
The tourism climate index, which measures the climatic well-being of the tourists, is a decisive element for a tourist destination. With the increasing temperature, tourists are likely to look for cooler environments thereby consuming more water, using more showers and air-conditioning. The scarcity of the water resources will inevitably exacerbate the conflict on water consumption with the other economic sectors.

**Main components of the project:**
- Up-date the studies on water consumption in the tourist industry, establish consumption records of the tourism zones and evaluate the water requirements of the different installations (hotels, restaurants, thalassotherapy centers, golf courses, marinas).
- Construction of a small-scale seawater desalination plant with a capacity of 2000 hotel beds using renewable energy and renewal of the water distribution system in the tourism zones.

---

**PROJECT IMPLEMENTATION**

<table>
<thead>
<tr>
<th>Implementation</th>
<th>Institutional partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Water Exploitation and Distribution Company (SONEDE), ANPE</td>
<td>Ministry of Environment, Ministry of Tourism, National Agency for Energy Management (ANME)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation period</th>
<th>Priority of the project</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 years</td>
<td>High</td>
</tr>
</tbody>
</table>

| Monitoring indicators | |
|-----------------------| |
| conducted study, functioning desalination plant | |

---

**COSTS / BENEFITS OF THE PROJECT**

<table>
<thead>
<tr>
<th>Project costs</th>
<th>Risks and vulnerability due to non-action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3MDT</td>
<td>The increase in the number of tourists and the better product quality inevitably lead to increased water consumption. Considering the rise of the temperature and the scarcity of the water resources, special efforts need to be undertaken since otherwise the tourism activity will decline and investments slow down.</td>
</tr>
</tbody>
</table>
**Sector:** Ecotourism

**Title of the project:** Definition of climatic tourist regions and distribution of ecotourism circuits

**Intervention zone:** Tourism zone Djerba

---

**PROJECT DESCRIPTION**

**Presentation of the problem:**
The climate is a determining factor when choosing a tourist destination. The development of tourism is more and more oriented to a richer and more diverse product and ecotourism plays an important role in this respect. The climatic and touristic potential of Tunisia presents an important advantage when considering the diversification of the tourist activities.

**Objectives:**
- Develop new tourist products besides the classic beach tourism to bring new dynamics to tourism while at the same time promoting the sustainability of the industry.
- Therefore, it will be necessary to design circuits for ecotourism, which will offer visitors a thermal comfort and improved conditions during their stay in Tunisia.

**Contribution to the adaptation to climate change:**
Once the air temperature rises above 31°C it is more and more difficult to provide tourists with the thermal comfort they require. This element has important consequences on the choice of the vacation destination.

**Main components of the project:**
- Identification of climatic-touristic regions on the national level,
- Identification and development of appropriate ecotourism circuits.

---

**PROJECT IMPLEMENTATION**

**Implementation:** ONTT, Ministry of Tourism

**Institutional partners:** Ministry of Environment, Ministry of Tourism, National Agency for Energy Management (ANME), Professionals of the region, NGOs

**Implementation period:** 3 years

**Priority of the project:** Medium

**Monitoring indicators:** defined climatic-touristic regions, defined ecotourism circuits

---

**COSTS / BENEFITS OF THE PROJECT**

<table>
<thead>
<tr>
<th>Project costs</th>
<th>Risks and vulnerability due to non-action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 MDT for the study</td>
<td>Image loss of the Tunisian tourism product and depreciation of its value leading to reduced sales compared to competitors and an important loss of income from tourism.</td>
</tr>
<tr>
<td>3 MDT for the development of the circuits</td>
<td></td>
</tr>
</tbody>
</table>

---

*Sector: Ecotourism*

*Title of the project: Definition of climatic tourist regions and distribution of ecotourism circuits*

*Intervention zone: Tourism zone Djerba*
**TOURISM**

**Sector:** Ecological tourism

**Title of the project:** Launching of an ecological hotel

**Intervention zone:** One of the climatic-touristic regions most vulnerable to climate change (KERKENAH)

## PROJECT DESCRIPTION

**Presentation of the problem:**
All the Tunisian hotels consume incredible amounts of energy and water. Many of the hotels are old and obsolete and show an increasing depreciation of their equipments and technical installations. This fact leads to an excessive consumption of energy and wasting of drinking water and requires an upgrading of the tourism infrastructure in line with the new ecological standards.

**Objectives:**
The project aims to conceive and realize a model for hotel constructions corresponding to different ecological labels and integrated in a sustainable development approach.

**Contribution to the adaptation to climate change:**
The project will help to develop a concept for a touristic unit that will be adapted to the increase in temperature and the scarcity of natural resources.

**Main components of the project:**
Architectural study on an ecological and bioclimatic hotel based on three main parameters: the construction of the building (building material, concept adapted to the local environment), use of energy and water. The capacity of the hotel unit will be 400 beds and its geographic implantation will depend on the regional bioclimatic constraints.

## PROJECT IMPLEMENTATION

**Implementation:** Tunisia Tourism Board (ONTT), institutional promoters (FTH or SOTU-TOUR) for the realization of the project

**Institutional partners:** Ministry of Environment, Ministry of Tourism, National Agency for Energy Management (ANME), Ministry of Equipment, ANPE, APAL

**Implementation period:** 5 years

**Priority of the project:** High

**Monitoring indicators:** conducted study, functional ecological hotel

## COSTS / BENEFITS OF THE PROJECT

<table>
<thead>
<tr>
<th>Project costs</th>
<th>Risks and vulnerability due to non-action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MDT for the study</td>
<td>The construction of hotels according to the classic standards will lead to additional costs and to the continuous wasting of natural resources. This approach will not be competitive in future years.</td>
</tr>
<tr>
<td>2MDT subsidy for the construction</td>
<td></td>
</tr>
</tbody>
</table>

2MDT subsidy for the construction
Sector: Protection of tourism zones

Title of the project: Protection of tourism zones and adaptation to climate changes

Intervention zone: All tourism zones

PROJECT DESCRIPTION

Presentation of the problem:
The tourism zones located along the Tunisian coast have been conceived according to the classical development model through zoning for the first generation and through an integrated resort approach for the second generation. These touristic ensembles present a linear development form, occupy a lot of space, they are highly concentrated in some areas with a lot of concrete.

Objectives:
Protect the tourism zones and their important economic potential and restructure their organization to integrate them in the sustainable development concept and the socio-economic redynamization process.

Contribution to the adaptation to climate change:
The climatic hazards (floods, storms, sea level elevation) are potential phenomena, which may lead to the destruction of the tourism zones. One of the main concerns of Tunisian public authorities is to protect these zones and avoid the risk of destruction.

Main components of the project:
• Conduct of studies for the protection and the redevelopment of the existing tourism zones and readjustment of the studies for new tourism zones.
• Implementation of the main actions

PROJECT IMPLEMENTATION

Implementation: Tunisian Tourism Board (ONTT) – Tourism Real Estate Agency (AFT), ANPE
Institutional partners: Ministry of Environment, Ministry of Equipment
Implementation period: 2 years
Priority of the project: Medium
Monitoring indicators: new studies carried out, existing studies readjusted

COSTS / BENEFITS OF THE PROJECT

Project costs 3 MDT

Risks and vulnerability due to non-action: abandoning the tourism zones would lead to their exposition to natural disasters notably to floods and the rise of the sea level. It would mean a loss of economic potential and jobs that in turn would lead to the migration of the resident population and the workforce.