



**TECHNICAL ASSISTANCE FOR CARRYING OUT THE ENVIRONMENTAL AND SOCIAL IMPACT STUDY FOR THE PURPOSE OF PROSPECTING DONORS IN THE FRAMEWORK OF THE PROJECT « ADAPTATION TO CLIMATE CHANGE IN OASES AREAS – ADAPTATION FUND »**

**Rapport**  
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**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)**  
**NOTICE OF SOFT ACTIONS**

0		Preliminary	E. Lamchichi / S. Chraïbi / B. Souidi		
<b>Rév.</b>	<b>Date</b>	<b>Émis pour</b>	<b>Élaboré par</b>	<b>Vérfié par</b>	<b>Approuvé par</b>

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## 1. INTRODUCTION

The project of adaptation to climate change in the oases areas (PACCZO) consists of the integration of the climate changes component in the whole implementation process of every development intervention in the oases areas. Thus, this integration concerns all the components ranging from the development actors to activities aiming the promotion of gender integration, going through the implementation of structuring actions resulting in the adaptation to climate change.

Although the project, in its background, is of environmental and social nature, given its declination in climate risk integration and improvement of adaptation to climate change practices in oases areas, it is necessary to conduct an ESIA for a good anticipation of the residual negative impacts and for the enhancement of the positive impacts.

The proposed actions in the PACCZO can be classified into two categories: physical actions (such as groundwater recharge, construction protection structures, rehabilitation of Khettarats and Seguias and the fight against desertification) and non-physical actions (awareness, communication, improvement and diversification of income sources, capacity building, etc.).

For physical actions, each of which was subject of an ESIA, conducted in accordance with national environmental legislation and policy and principles of environmental and social safeguard of the Adaptation Fund (AF), like those adopted usually by the World Bank and GEF.

This manual deals with non-physical actions of the PACCZO. Which will be crucial for the sustainability and durability of the results of the physical actions. Topics will focus on the nature of these actions, their impacts and the actions to achieving the expected objectives.

## 2. DESCRIPTION OF THE PACCZO PROJECT

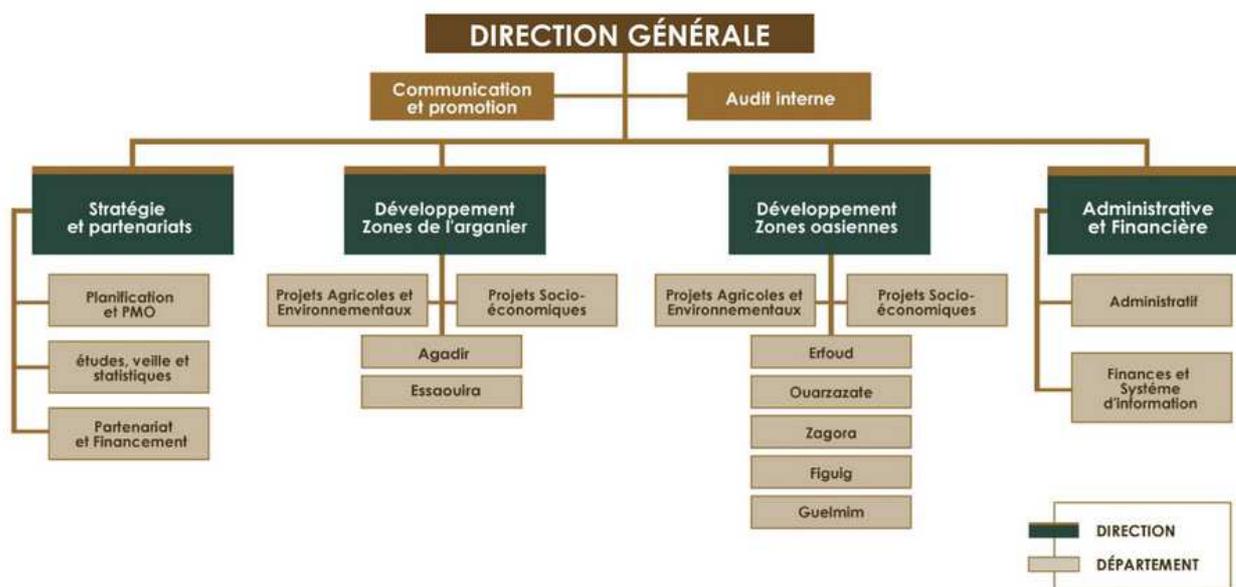
### 2.1. THE ORGANIZATION IN CHARGE OF THE IMPLEMENTATION AND THE STEERING ENTITY

The proposed institutional arrangements are taken from the lessons learned from previous projects. With respect to the management of PACCZO Project, the ANDZOA will host a Project Management Unit (PMU). This unit will coordinate the monitoring and implementation of project activities with the ADA and other partners. The PMU will adopt an integrated and multisectoral approach and will focus on the participation and active involvement of beneficiaries in all levels of decision-making. This PMU will be staffed by experienced professionals and will be supported by external assistance and technical expertise.

The administrative staff of the unit is hired via job advertisement and fully devote its time to the implementation of project activities. The analyze and discussions conducted during the project preparation agree on the need to establish a management by objectives unit.

This unit will be responsible for, among other things, the coordination of all the project activities, the organization of the CRC activities, the promotion of the project results, the ESMP, and the implementation of the communication strategy . The PMU may be composed of the following personnel: National Project Coordinator; Agricultural Engineering and Land use Planning, specialist; Oasis Agriculture Specialist ; Environmental specialist, Specialist in procurement and financial management and a M&E (Monitoring and Evaluation) Specialist.

With respect to the managerial system of ANDZOA, it is worth recalling that this project is reinforcing the axis "Development of oasis zones" as the following chart shows:



### 2.2. CONTENT, GOALS, AND RESULTS OF THE PROJECT PACCZO

#### 2.2.1. CONTENT

This project is divided into five main components briefly described hereafter:

#### *Component 1. Improving adaptive capacities of the water sector*

This component consists in improving joint regulation of ground and surface water through new sustainable hydraulic and protective structures and the rehabilitation of obsolete structures to improve the efficiency of water delivery.

***Component 2. Diversifying income sources and improving the living conditions of populations vulnerable to climate change in the targeted areas***

This component is dedicated to improving the livelihood of families through two segments: i) the development of a small oasis agriculture conservatory and more resilient, ii) diversification of income sources by promoting other non-agricultural economic activities, in order to increase the resilience of the oasis population.

This component also includes the development of income generating activities for women and youth by improving employability and micro-entrepreneurship.

***Component 3. Improving the ecosystems' resilience in response to climate change and variability***

Faced with the fragility of the oasis ecosystem and its submission to anthropogenic degradation factors resulting from climate change (sand encroachment, increase in temperature, water scarcity ...), the project has included this component which consists of a internalization and integration of these threats reducing the value of oasis ecosystems by municipalities through development plans. The expected result is the preservation of this heritage and ecosystemic services through the balance between humans and the oasis environment.

***Component 4. Improving stakeholders awareness through the management and exchange of knowledge***

This component aims at consolidating the achievements, updating data and finally disseminating and sharing knowledge related to climate change in the project areas. This dissemination will be done through the organization of a public debate on water and climate change and through the development of local communication and documentation initiatives, and sharing around practices of adaptation to climate change.

***Component 5. Strengthening the capacities of participants in the design and implementation of adaptation measures***

This component aims to strengthen the capacity of the project participants (managers and beneficiaries) in the design and implementation of projects and measures for adaptation to climate change. A focus on two crucial aspects will be made; it comes to strengthen participants' knowledge regarding climate change and adaptation and to improve skills in participatory approach, management of financial partnerships and conflict management.

## **2.2.2. OBJECTIVES**

The overall objective of the project is: «*to improve the adaptability of populations in Oasis areas in the face of climate change* ». This overall objective is divided into the following specific objectives:

- Improve the adaptive capacities of the water sector,
- Diversify income sources and improve living conditions of populations vulnerable to climate change in the targeted areas,
- Improve the ecosystem's resilience in response to climate change and variability,
- Improve the awareness of all stakeholders through the management and sharing of knowledge,
- Strengthen the capacities of participants in the design and implementation of adaptation measures.

Note that the approach adopted for achieving these goals are based on increasing adaptive capacity of institutions and local players and on the implementation of priority adaptation measures to climate change for Moroccan oasis zones.

In the prospect of facing the challenges outlined above, and for an effective and efficient achievement of these objectives, the PACCZO project will focus on the integration of the component of climate change in the whole implementation process of any development intervention in oasis areas. Thus, this integration concerns all the components ranging from the development actors to activities aiming the

promotion of gender integration, going through the implementation of structuring actions resulting in the adaptation to climate change.

### 2.2.3. EXPECTED OUTCOMES

The implementation outcomes of the components of the PACCZO are given in the following table.

TABLE 1.: EXPECTED OUTCOMES

Components	Outcomes
1. Improving adaptive capacities of the water sector	1.1 Improved joint regulation of ground and surface water through new sustainable hydraulic and protective structure management.
	1.2 Vulnerable infrastructure allowing the improvement of water distribution efficiency are restored
2. Diversifying income sources and improving the living conditions of populations vulnerable to climate change in the targeted areas	2.1 Improved livelihoods of families due to the development of more resilient small scale agriculture.
	2.2 Developed non-agricultural economic activities help increase the resilience of the Oasis population.
3. Improving the ecosystems' resilience in response to climate change and variability.	3.1 Threats reducing the value of Oasis ecosystems are taken into account by municipalities
	3.2 Preserved and Promoted Heritage
4. Improving stakeholder awareness through the management and exchange of knowledge.	4.1 Organized public debate on water and climate change
	4.2 Supported and developed local initiatives for communication
5. Strengthening the capacities of participants in the design and implementation of adaptation measures	5.1 Consolidated and developed adaptive capacities for climate change

### 2.3. TERRITORIAL DECLINATION OF THE PROJECT

The areas covered by the project fall within the administrative region of Souss Massa Draa (provinces of Ouarzazate, Zagora and Tinghir) and Meknes Tafilalet (provinces of Earrachidia and Figuig). The beneficiary population will amount to about 150,000 inhabitants. A direct beneficiary population of 40,000 inhabitants. The targeted perimeters and palm groves suffer droughts increasingly recurrent and severe combined with an increasingly growing water demand.

Thus, two areas particularly vulnerable to climate change, with different issues and representative of the area, particularly with respect to water, have been selected:

- Intermediate **Basin of Gheris**: area located in the intermediate part of a watershed where the water can still be mobilized to save the palm groves with a potential for agricultural production.
- **Basin of Maïder**: area located downstream of a watershed where the availability of water resources must be preserved to ensure the drinking water supply.

## 2.4. MATRIX OF ACTIONS AND THEIR CATEGORIZATION

The components of the project are composed of physical actions and non physical actions

### 2.4.1. PHYSICAL ACTIONS

Physical actions are shown in the following table:

*TABLE 2 : DESCRIPTIVE MATRIX OF ACTIONS PLANNED UNDER THE PACCZO*

Component	Actions
Improving adaptive capacities of the water sector	Construction of four (4) groundwater recharge structures in two priority sites to meet the needs of 6 palm groves
	Construction of structures for protecting the 6 perimeters
	Restoration of khetaras over 200 ha
	Restoration of séguias over 200 ha
Improving the resilience of ecosystems to response to climate change and variability in at least 4 oasis	The fight against sand encroachment is organized on an area of 40 ha

### 2.4.2. ACTIONS OF CAPACITY UPGRADING AND STRENGTHENING

Non-physical actions aimed at improving the awareness and capacity strengthening are summarized in the following:

#### CONDUCTION OF 2 FEASIBILITY STUDIES IN 2 SITES ON THE EXPLOITATION OF DEEP-WATER RESOURCES INTENDED FOR THE DRIED UP PALM GROVES OF THE MAÏDER BASIN

Drinking water in the Maïder Basin is distributed from groundwater sources, whose water flow and quality are low. Studies conducted by the HBA, the Minister of Water (*Ministère Délégué Chargé de l'Eau – MCDE*), the POT project, and the municipalities highlight the need to explore groundwater resources by studying the feasibility of long-term solutions (transfer between sectors, transfer between basins, demineralization).

- Carry out an exploration/reconnaissance study through drilling for deep-water resources. Two boreholes will be done.

The project will contribute to the completion of two exploratory boreholes selected out of five (5) pre-identified by the HBA in the zone. The 1996 Master Plan studies indicate that the first deep boreholes were explored in the mid 1930's and bore satisfactory results.

- Carry out feasibility studies to identify priority sites and their financing.

The project will be based on the results of prospections and proposals for AEP project funding in the Maïder zone.

Conservation technics are circulated and adopted

#### ADOPTION ET DIFFUSION DES TECHNIQUES CONSERVATOIRES

Agro-ecological and conservation techniques offer possibilities to improve agricultural production within the context of the increasing of water scarcity, though conserving water and improving the soil structure. These are already present in the zone and outside. These techniques involve covering and limiting the working of the soil, biological control, crop rotation and composting. The experiments already carried out in this vein in the oasis zones need to be capitalized on and followed up in order to allow a larger number of farmers to adapt their activities.

In addition the resilience of the oasis agro-system is based on the maintenance or redevelopment of specific crops (date palm cultivation, fruit trees, fodder crops and vegetable crops) coupled with a system of animal husbandry integrated with the oasis agriculture (including manure production, biogas, etc.).

These techniques will therefore be developed as part of the project in order to improve the resilience of agriculture.

In this context two activities are planned, namely :

- Carry out a study on the experiences already undertaken in the zone or in similar zones abroad.
- Train new farmers on the conservation techniques and promote their circulation.

The project anticipates training 400 farmers by zone for a total of 800 farmers.

#### DEVELOPING AND PROMOTING 4 OASIS AGRICULTURE PRODUCTS

In oasis zones, it is necessary to increase the added value of products in order to directly increase the income of the farmers. For that, it is important to promote these products. Some EIGs, and cooperatives have already established in this vain activities to transform certain products, particularly dates. In order to support this momentum and to amplify the results of this first effort, the project will accompany these initiatives through the development of certification for four oasis agricultural products and their promotion; primarily: cumin, henna, dates, and olives (oil), which will provide a product from each of the three levels of oasis cultivation.

On the other hand, other existing local agricultural products adapted to the climate context are today little exploited. The project will support research in this vein in order to identify the other endemic species with promising potential.

In this context three activities are planned, namely :

- Support the producers in the certification process for their products
- Promotion of oasis agricultural products.
- Encourage research on endemic species and their uses.

The project will thus, in this vein, finance four (4) research projects in partnership with the national agronomic universities.

#### PROMOTING SUSTAINABLE AND RESPONSIBLE TOURISM, WHICH FACES UP TO CLIMATE CHANGE, IN 5 TOURISTIC UNITS

##### **Promotion d'un tourisme durable et responsable face à l'impact du changement climatique chez 5 unités touristiques**

Tourism is a significant activity in the oasis economy; it increases the resilience of vulnerable populations to climate change through the production of income that is complementary to agriculture.

- *Support the Tourism stakeholders to make the sector more accountable.* : The PACC-ZO project will support this dynamic shift towards tourism adapted to contemporary evolutions by financing the following actions:

- Stakeholder accountability (guides, hotels, etc.) with respect to the activity's impacts
- Development of good practice guides
- Upgrade tourism structures (water and energy conservation)
- *Carry out a study on niche tourism products to develop*

In order to complete the responsible tourism portfolio in the zone, the project will launch a study on niche Tourism products to highlight (such as spiritual/ sport tourism), the public to target and the promotion to carry out. This will allow the development of the activity and increase the attractiveness of the zone for tourists.

#### **DEVELOPING AND PROMOTING NON-AGRICULTURAL ECONOMIC ACTIVITIES, ESPECIALLY FOR YOUTH AND WOMEN (20 PROJECTS, AT LEAST 50% MANAGED BY WOMEN 2 TRAININGS)**

Women in the oasis usually live there permanently. They are the most concerned by the development of new activities that allow them to compensate for the impossibility of cultivating during certain years. Similarly, young adults who do not have the opportunity to leave do not find work in the oasis. Nevertheless small business projects exist that must be supported and encouraged. However, numerous jobs adapted to the changes in the zone are missing and should be developed in order to accompany an endogenous adaptation of the oasis to climate change all the while increasing the resilience of the most vulnerable groups though raising their incomes.

- *Support small-scale local economic projects.*
- *Develop new careers adapted to the context and needs of the oasis.*

#### **SETTING UP TREATMENT DEVICES FOR ENVIRONMENTAL CLEANUP FOR 400 PEOPLE (AT LEAST 50% WOMEN) AND TRAINING BENEFICIARIES ON THEIR USE**

Pollution is significant in oases; it directly damages the well-being of the population and reduces its attractiveness for tourists. It is thus vital to organize, with the involvement of the inhabitants, the management of water and training on recycling and green technologies.

- *Study the impact of the oasis economic activities.*

The environmental impact of economic activities, particularly the management of used water from the Tourism industry will be studied. The results of this study will be used as the basis of establishing measures to take and will support projects to raise awareness amongst the population on habits to adopt. US\$ 20,000 will be awarded to this study.

- *Train and equip the stakeholders concerned on environmental cleanup techniques.*

Trainings will be done on phyto-purification, as well as equipping individual members, and recycling techniques that have been successful. The project targets 400 beneficiaries, reserving for this purpose US\$ 500/beneficiary, for a total of US\$ 200,000.

- *Support community services, which aim to protect natural resources*

In this vein, a fund of US\$ 80,000 will be reserved and made available through the municipalities (waste management). The PMU will write the procedures manual and will manage the requests to the fund.

#### **THE TECHNIQUES AND TRADITIONAL MATERIALS ARE REUSED FOR NEW CONSTRUCTION.**

In order to inspire a new model of comfort and modernity through the mud, more suitable to climate change, public buildings must be rebuilt. But after the researches are done on the building materials, and standards to be respected.

- *Studying in an urbanistic perspective the most relevant urban public construction to build of mud.*

This will be done in partnership with the CERKAS and by contracting a consultant in oisian urbanistic planing.

Many oasians still possess this knowledge, and are sometimes asked for the rehabilitation of patrimony or buildings of the ecotouristic structure. CERKAS will mobilize the necessary staff.

- *The development and distribution of a technical manual for the use of traditional materials for new construction.*

Based on the traditional know-how, building materials locally available and the implementing of pilot operations on administrative use buildings. This action will consist, within the framework of of the PACCZO on :

- Develop a technical manual for the use of traditional materials for new construction based on traditional know-how,
- erect this manual as PSC
- Establish contractual agreement with the CERKAS to achieve the construction pilot operation of a building meeting the standards and procedures.
- To generalize the procedure of standards in the communes subjects to the PACCZO within the framework of their developement programme.

#### **AN ASSESSMENT OF RESOURCES IN THE INTERMEDIARY GHERIS BASIN AND MAÏDER IS CARRIED OUT**

Two principals activities are planned, namely :

- *Implementation of a Documentation library*

The partners of the project represented in the Pilot committee and the Regional Coordination Committee will give the PMU the mandate to launch a consultation to create a digital documentation library compiling the studies and research on the oases and climate change. This documentation library will also include the results and lessons learned from the PACC-ZO project. This will ensure the accessibility of the data to various local and national stakeholders in order to promote ownership of all this knowledge and to increase the efficiency of future projects.

- *Strengthening of the monitoring system for water resources in the project zones.*

The quantitative and qualitative monitoring of the water resources in the hydraulic basin highlighted through the missions of the HBA. The project will support the methods of the HBA in the project zones through an agreement, which will also include the writing of specific monitoring reports.

### A LOCAL COUNCIL FOR WATER DIALOGUE IS OPERATIONAL

The project will begin the process of creating a CLE (Local Water Council) by writing of a draft Charter on water and climate change in the oases.

This Charter will be subject to the partners through bilateral meetings, which will result in a workshop to approve and to constitute a local water council.

The presidency will be given to a personality who is well known in the zone for their commitment to sustainable development and an expert will fill the Secretariat position.

Two activities are planned in This component, namely :

- *Writing of a draft Charter on water and climate change in the Oases.*
- *Organization of conferences on the themes of water and climate change.*

### AN AWARENESS AND COMMUNICATION STRATEGY IS DEVELOPED

The active contribution of local organizations for communicating and raising awareness amongst the public who are not directly affected by the effects of climate change (children, emigrants, tourists) is a priority of this project. This will be done through the implementation of mass communication campaigns and targeted awareness initiatives

- *Writing of a communication strategy.*

The project will carry out a consultation to conduct a study to define a communication strategy on the themes of climate change and planned adaptation initiatives at a local level.

- *“Mass” communication campaign*

The project will take charge, according to the recommendations of the study (messages, support, media), of a communication campaign in partnership with the stakeholders.

- *Organizing a project closeout seminar*

At the end of the PACC-ZO project, a national seminar will be organized in Rabat to present the results of production and lessons learned in terms of the measures of adaptation to climate change.

### A FINANCING MECHANISM IS IMPLEMENTED

Following the communication campaign and through the PMU, the project will create a list of organizations able to conduct awareness initiatives in the project zones on the basis of a file, particularly for school populations and oasis visitors (emigrants, tourists, etc.).

- *Etablissement de la liste des organisations-partenaires des actions de sensibilisation*
- *Establishing of a list of Partner-organizations for awareness actions*
- *Management of call for projects on awareness.*

After approval by the CRC and the Pilot committee, the PMU will be responsible for preparing and managing the mechanism of call for projects on awareness addressed to partners.

### THE MANAGERS OF PUBLIC SERVICE ARE INFORMED ON THE ISSUES OF CLIMATE CHANGE AND INTRODUCED TO ADAPTABILITY MEASURES FOR THE MAIN SECTORS

In the oasis zones, information and training provided to public service officials on how to adapt to climate change is very uneven, with a concentration of skills acquired around the sites of previous projects. The project intends to address these information and education gaps in the selected sites

(Intermediary Gheris and Maïder), which have not yet benefitted from major interventions on adaptation.

Two activities are planned, nemely : :

- *Conduct climate change training modules*

The project will organize a call for expressions of interest for organizations with the skills for training public officials. The organizations selected will be consulted on the basis of the terms of reference prepared by the PMU for executing the training services site by site. The terms of reference will include an estimate of the number of participants and a preliminary list of training needs. The modules covered will include most of the sectors impacted by climate change.

- *Participation in scientific meetings and forums*

According to an annual planning prepared by the Project Management Unit, the project will cover the costs for the technical staff to participate in scientific meetings on climate change as well as the costs for local actors to participate in education forums organized around issues pertaining to oasis zones.

#### *OASIS BENEFICIARIES ARE TRAINED ON INNOVATIVE ADAPTABILITY MEASURES*

The populations of the sites selected by the project have adaptation skills passed down from previous generations on managing scarcity and natural risks. The consultation workshops have confirmed that there is an awareness of elevated risks due to climate change in the sites. The project will expand the technical reference for adaptation in the selected sites (Intermediary Gheris and Maïder) through training and exchange activities:

- *Conduct adaptation training modules*
- *Organizing trips and internships*

#### *THE PARTICIPANTS (OPERATORS AND BENEFICIARIES) ARE TRAINED IN THE DESIGNING AND FINANCING OF PROJECTS*

The process for implementing adaptation measures will be greatly facilitated by the project management tools provided by the involved stakeholders and by financing mechanisms from various partners.

- *Conduct modules on the project cycle*
- *Conduct training modules on project financing*

#### *THE PARTICIPANTS (OPERATORS AND BENEFICIARIES) ARE TRAINED ON THE IMPLEMENTATION AND JOINT MANAGEMENT OF PROJECTS.*

Adaptation measures involve changes in how sustainable development of the oases is designed.

- *Conduct training modules on the participatory approach*
- *Conduct training modules in conflict management and mediation*

Non-physical actions aimed at improving the awareness and capacity strengthening are summarized in the following table:

**TABLE 3 : ACTIONS OF CAPACITY UPGRADING STRENGTHENING**

Components	Actions
<b>Improving adaptive capacities of the water sector</b>	Conduction of 2 feasibility studies in 2 sites on the exploitation of deep-water resources intended for the dried up palm groves of the Maïder basin
<b>Diversifying income sources and improving the living conditions of populations vulnerable to climate change in the targeted areas (among at least 20% of the households)</b>	Adoption and sharing for a Conservation technics Developing and promoting 4 oasis agriculture products Promoting sustainable and responsible tourism, which faces up to climate change, in 5 touristic units Developing and promoting non-agricultural economic activities, especially for youth and women (20 projects, at least 50% managed by women 2 trainings)
<b>Improving the ecosystems' resilience in response to climate change and variability in at least 4 oases</b>	Setting up treatment devices for environmental cleanup for 400 people (at least 50% women) and training beneficiaries on their use Traditional techniques and materials are reused for two (2) new constructions The preparation and distribution of a technical manual for the use of traditional materials for new construction based on traditional know-how, locally available building materials, and implementing pilot operations on administrative buildings.
<b>Improving stakeholders awareness through the management and exchange of knowledge</b>	Carrying out An assessment of resources in the intermediary Gheris basin and Maïder and elaborating documentation library Study on accessible water resources. Establishing a local council for water dialogue organizing 6 regional thematic conferences Defining an awareness and communication strategy Developing local initiatives of communication and exchange and organizing four (4) mass campaigns Implementing a financing mechanism and funding 50 awareness projects
<b>Strengthening the capacities of participants in the design and implementation of adaptation measures</b>	Informing the managers of public service on the issues of climate change and introducing them to adaptability measures for the main sectors: <ul style="list-style-type: none"> <li>• 12 training workshops (20 people/workshop)</li> <li>• 50 participants for scientific conferences and beneficiary awareness forums (at least 50% of women)</li> </ul> Oasis beneficiaries are trained on innovative adaptability measures: <ul style="list-style-type: none"> <li>• 20 workshops, (20 people/workshop)</li> <li>• 15 trips (at least 50% women)</li> </ul> The participants (operators and beneficiaries) are trained in the designing and financing of projects: <ul style="list-style-type: none"> <li>• 12 workshops on the project cycle (20 people/workshop)</li> <li>• 12 workshops on project financing (40 people/workshop) (at least 50% women)</li> </ul> The participants (operators and beneficiaries) are trained on the implementation and joint management of projects : <ul style="list-style-type: none"> <li>• 12 workshops on the participatory approach (20 people/workshop)</li> <li>• 12 workshops in conflict management and mediation (12 people/workshop) (at least 50% women).</li> </ul>

### 3. EXPECTED OUTCOMES

The implementation outcomes of the components of the PACCZO are given in the following table.

Composantes	Actions	résultats attendus
<b>Improving adaptive capacities of the water sector</b>	Conduction of 2 feasibility studies in 2 sites on the exploitation of deep-water resources intended for the dried up palm groves of the Maïder basin	<ul style="list-style-type: none"> <li>• Improved joint regulation of ground and surface water through new sustainable hydraulic and protective structure management</li> <li>• Improved access to water resources;</li> <li>• Preservation of oasis and biodiversity;</li> <li>• Improvement of living conditions of the population;</li> </ul>
<b>Diversification des sources de revenus et amélioration des conditions de vie des populations vulnérables au changement climatique dans les zones cibles (chez au moins 20% des ménages)</b>	Adoption and sharing for a Conservation technics	<ul style="list-style-type: none"> <li>• Improvement of agricultural production;</li> <li>• Improvement the resilience of farming;</li> <li>• Water Resource Economics and improvement the soil structure;</li> <li>• Implementation of specific crops into the context of the region;</li> <li>• Improved knowledge and competence of farmers through specific training in this area</li> </ul>
	Developing and promoting 4 oasis agriculture products	<ul style="list-style-type: none"> <li>• Improved sources of income of farmers by:                             <ul style="list-style-type: none"> <li>• Certification of local produce</li> <li>• The promotion of agricultural oases</li> </ul> </li> <li>• Improvement of added value of products;</li> <li>• Use of products best suited to the local context;</li> <li>• Enhancing research on endemic species</li> </ul>
	Promoting sustainable and responsible tourism, which faces up to climate change, in 5 touristic units	<ul style="list-style-type: none"> <li>• Decrease the pressure on the oasis and water resources ;</li> <li>• Diversifying sources of income ;</li> <li>• Sustainable development of oases ;</li> <li>• Improved livelihoods and living conditions of the population.;</li> </ul>
	Developing and promoting non-agricultural economic activities, especially for youth and women (20 projects, at least 50% managed by women 2 trainings)	<ul style="list-style-type: none"> <li>• Employment creation and income opportunities for the most vulnerable groups;</li> <li>• Creation of economic activity that can boost local areas;</li> <li>• Development of business adapted to the evolution of oases;</li> <li>• Support with training in sustainable development..</li> </ul>
<b>Improving the ecosystems' resilience in</b>	Setting up treatment devices for environmental cleanup for 400 people (at least 50% women) and training beneficiaries on their use	<ul style="list-style-type: none"> <li>• Improvement of health conditions oases;</li> <li>• Improvement of living environment of the population;</li> <li>• Minimizing the risk of pollution and degradation of water quality;</li> <li>• Preservation and development of oasis</li> </ul>

Composantes	Actions	résultats attendus
<b>response to climate change and variability in at least 4 oases</b>	Traditional techniques and materials are reused for two (2) new constructions	<ul style="list-style-type: none"> <li>• Valorization of local know-how;</li> <li>• Promotion of environmentally sustainable construction techniques;</li> <li>• Old buildings rehabilitated knowing new usage</li> </ul>
	The preparation and distribution of a technical manual for the use of traditional materials for new construction based on traditional know-how, locally available building materials, and implementing pilot operations on administrative buildings.	<ul style="list-style-type: none"> <li>• Promotion of environmentally sustainable construction techniques</li> </ul>
<b>Improving stakeholders awareness through the management and exchange of knowledge</b>	Carrying out An assessment of resources in the intermediary Gheris basin and Maïder and elaborating documentation library Study on accessible water resources.	<ul style="list-style-type: none"> <li>• Improved joint regulation of ground and surface water through new sustainable hydraulic and protective structure management</li> <li>• Sharing knowledge and visions on the water issues;</li> <li>• Availability of data and capitalizing on research and studies ;</li> </ul>
	Establishing a local council for water dialogue organizing 6 regional thematic conferences	<ul style="list-style-type: none"> <li>• Create a framework for collaboration between the different actors;</li> <li>• Better handling and treatment of problems related to water;</li> <li>• Establishment of a resources management program;</li> <li>• Participation in the sustainable management of oases</li> </ul>
	Defining an awareness and communication strategy	<ul style="list-style-type: none"> <li>• Awareness raising of all categories of the population on the importance of water, and adaptation to climate change;</li> <li>• Convergence of ideas and support for implementation of integrated measures;</li> <li>• Capitalisation on experiences in this area;</li> <li>• Participation in the sustainable management of oases</li> </ul>
	Developing local initiatives of communication and exchange and organizing four (4) mass campaigns	<ul style="list-style-type: none"> <li>• Conduct outreach activities for a better understanding of the problem;</li> <li>• Encouraging awareness actions to ensure the sustainability of the oasis</li> </ul>
<b>Strengthening the capacities of participants in the design and implementation of adaptation measures</b>	Informing the managers of public service on the issues of climate change and introducing them to adaptability measures for the main sectors: <ul style="list-style-type: none"> <li>• 12 training workshops (20 people/workshop)</li> <li>• 50 participants for scientific conferences and beneficiary awareness forums (at least 50% of women)</li> </ul>	<ul style="list-style-type: none"> <li>• Increased awareness of climate change issues and therefore improving adaptation techniques to climate change</li> <li>• Application of measures best suited to the context and agreed by stakeholders;</li> <li>• Improvement of living conditions of the population;</li> <li>• Sharing the same level of information on the issue of climate change;</li> <li>• Shared vision by all stakeholders for success of the actions to be</li> </ul>
	Oasis beneficiaries are trained on innovative adaptability measures: <ul style="list-style-type: none"> <li>• 20 workshops, (20 people/workshop)</li> <li>• 15 trips (at least 50% women)</li> </ul>	

Composantes	Actions	résultats attendus
	The participants (operators and beneficiaries) are trained in the designing and financing of projects: <ul style="list-style-type: none"> <li>• 12 workshops on the project cycle (20 people/workshop)</li> <li>• 12 workshops on project financing (40 people/workshop) (at least 50% women)</li> </ul>	implemented; <ul style="list-style-type: none"> <li>• • Participation in the preservation and sustainability of oasis.</li> </ul>
	The participants (operators and beneficiaries) are trained on the implementation and joint management of projects : <ul style="list-style-type: none"> <li>• 12 workshops on the participatory approach (20 people/workshop)</li> <li>• 12 workshops in conflict management and mediation (12 people/workshop) (at least 50% women).</li> </ul>	

SOFT or not physical actions planned under the PACZO, will be crucial for the sustainability and durability of the results of the physical actions (groundwater recharge works, rehabilitation of khattaras and derivation thresholds, rehabilitation of Seguias etc. .). Thus, as it was stated before, these actions were the subject of an environmental and social study.

The approach to these environmental notice for those SOFT action is to develop a matrix that answers the following three questions:

- i. *Starting from an initial reference situation, what are the possible improvements, following the implementation of these actions, in terms of awareness of the issues of CC and the upgrading of the adaptation measures?*
- ii. *What are the assumptions conditioning the appropriation of shared knowledge concerning adaptation measures?*
- iii. *What principle of the Adaptation Fund's policy is affected by this action?*

**This notice is compiled in the following matrix :**

Components	Specific actions	Concerned actors	Baseline	Expected improvement	Assumption: ownership / sustainability	Principle of the policy of the FA concerned by the action
<b>Improving adaptive capacities of the water sector</b>	Conduction of 2 feasibility studies in 2 sites on the exploitation of deep-water resources intended for the dried up palm groves of the Maider basin	ABHGZ	Lack of water resources	Improvement of the accessibility to water resources	Implementing the project following studies	<ul style="list-style-type: none"> <li>• Climate change</li> <li>• Biodiversity preservation</li> <li>• Human rights</li> <li>• Access and Equity</li> </ul>
<b>Diversification des sources de revenus et amélioration des conditions de vie des populations vulnérables au changement climatique dans les zones cibles (chez au moins 20% des ménages)</b>	Adoption and sharing for a Conservation technics	ANDZOA, ORMVA and beneficiaries	Soil fragility and scarcity of water resources	Improving soil resilience	Accompaniment and guiding for farmers	<ul style="list-style-type: none"> <li>• Soils and land preservation</li> </ul>
	Developing and promoting 4 oasis agriculture products	Farmers	Low market visibility lack of geographical labelisation Low replication of the acquired experiences, especially in the case of dates	Improving the added value of agricultural products by the integration of the chain: production - valuation - Marketing	Accompaniment of farmers: coaching, organizing and linking with the market	<ul style="list-style-type: none"> <li>• Soil protection ;</li> <li>• Climate change</li> <li>• Access and Equity</li> </ul>
	Promoting sustainable and responsible tourism, which faces up to climate change, in 5 touristic units	Local Tourism operator Outputs « nature » be displayed by Tourism vision 2020	No climatic risk integrated ; Water Economics ; Type of building ; Etc,	to raising partners awareness to climate change ;  Eco-Labelized units and integrating the measures to adaptation to CC	Support of the Ministry of Tourism: good practice guide, upgrades and certification of accommodation facilities. Establishment of specific regulation Awareness raising actions Develop other tourist activities to create more added values	<ul style="list-style-type: none"> <li>• Climate change</li> </ul>
	Developing and promoting non-agricultural economic activities, especially for youth and women	Les femmes et les jeunes	Law Empowerment of women			<ul style="list-style-type: none"> <li>• Equity ;</li> <li>• Empowerment</li> </ul>

Components	Specific actions	Concerned actors	Baseline	Expected improvement	Assumption: ownership / sustainability	Principle of the policy of the FA concerned by the action
	(20 projects, at least 50% managed by women 2 trainings)		Low employability of young Lack of entrepreneurial approach Low qualification of women and young.	Women and Young are formed ; Les femmes et les jeunes sont formées (capitalize on the media tools developed by MCC)  20 projects developed by women and young people	To assist him during two years after starting project.	of women
<b>Improving the ecosystems' resilience in response to climate change and variability in at least 4 oases</b>	Setting up treatment devices for environmental cleanup for 400 people (at least 50% women) and training beneficiaries on their use	non-affected households by waste water system	Living conditions with inadequate hygiene with a development of waterborne diseases and water pollution.	Collective washing landscaped in well-selected sites On-site sanitation systems are implemented in households	Availability of competent local firms (for installation and maintenance / cleaning)	<ul style="list-style-type: none"> <li>• prévention de la pollution et l'efficacité des ressources</li> <li>• Droits de l'homme</li> </ul>
	Traditional techniques and materials are reused for two (2) new constructions	Les micros entreprises, les communes, le CERKAS	Existing practice but improve by developing specific arts	New construction practices in according with the climate change.	Replicabilité	Climate change ; preserved local heritage;
	The preparation and distribution of a technical manual for the use of traditional materials for new construction based on traditional know-how, locally available building materials, and implementing pilot operations on administrative buildings.	Les institutions concernées : ANDZOA, Communes et CERKAS	Existing practices but not valued and loss	local expertise saved. New practices in environmental friendly building and offering a living space or production adapted to climate change.	Diffusion	<ul style="list-style-type: none"> <li>• Climate change ;</li> </ul>

Components	Specific actions	Concerned actors	Baseline	Expected improvement	Assumption: ownership / sustainability	Principle of the policy of the FA concerned by the action
<b>Improving stakeholders awareness through the management and exchange of knowledge</b>	Carrying out An assessment of resources in the intermediary Gheris basin and Maïder and elaborating documentation library Study on accessible water resources.	Les institutions concernées (ANDZOA, ORMVA, ABH ...)	Law knowledge balance sheet needs - Resources	A water balance is developed and documented what will facilitate the design of allocations.	Contribution of l'ABH Application de la GIRE	<ul style="list-style-type: none"> <li>• Soil protection</li> <li>• prevention of pollution and efficiency of resources</li> </ul>
	Establishing a local council for water dialogue organizing 6 regional thematic conferences	Les institutions gestionnaires de l'eau Les populations locales Les usagers de l'eau d'irrigation	Conflict of usage Lack of fairness	Local dialogue formalized by efficient usage of practices and quality.	uninformed users	<ul style="list-style-type: none"> <li>• Soil protection</li> <li>• prevention of pollution and efficiency of resources</li> <li>• Equity</li> </ul>
	Defining an awareness and communication strategy	Acteurs du PACCZO, (ANDZOA, ABH, Tourisme, Provinces)	Ignorance of the impact of climate change on the oasis zones.	Local partners be informed and made aware;  Public (child, emigrants n tourists) made aware about climate change	Using the bonus-malus system for tourist, investors, hôteliers, .. to make for saving action.	<ul style="list-style-type: none"> <li>• Climate change ;</li> <li>• Equity.</li> </ul>
	Developing local initiatives of communication and exchange and organizing four (4) mass campaigns	Partenaires responsables de la campagne de sensibilisation	No communication about climate change	More campaigns to communicate about the climate change will be organized.	Good selection of partners who are responsible to do theses campaigns.	<ul style="list-style-type: none"> <li>• Climate change ;</li> <li>• Equity</li> </ul>
<b>Strengthening the capacities of participants in the design and implementation</b>	Informing the managers of public service on the issues of climate change and introducing them to adaptability measures for the main sectors:	Responsables des services publics	Ignorance of the impact of climate change on the oasis zones. And measures of adaptation to climate	Managers of public services are informed on the issues of CC and have appropriate messages and adopt a collaborative	To assist during a short period.	<ul style="list-style-type: none"> <li>• Climate change</li> </ul>

Components	Specific actions	Concerned actors	Baseline	Expected improvement	Assumption: ownership / sustainability	Principle of the policy of the FA concerned by the action
<b>of adaptation measures</b>	<ul style="list-style-type: none"> <li>12 training workshops (20 people/workshop)</li> <li>50 participants for scientific conferences and beneficiary awareness forums (at least 50% of women)</li> </ul>		change. Low capacity to be able to encountered the climate risk. (drought and floods)	approach (water managers, waste water operators, flood risk management, etc.)		
	Oasis beneficiaries are trained on innovative adaptability measures: <ul style="list-style-type: none"> <li>20 workshops, (20 people/workshop)</li> <li>15 trips (at least 50% women)</li> </ul>	Bénéficiaires du projet	Ignorance the measures of climate change adaptation.	Beneficiaries are trained on adaptation measures climate change innovated	Beneficiaries in sufficient numbers	<ul style="list-style-type: none"> <li>Climate change</li> <li>Equity</li> </ul>
	The participants (operators and beneficiaries) are trained in the designing and financing of projects: <ul style="list-style-type: none"> <li>12 workshops on the project cycle (20 people/workshop)</li> <li>12 workshops on project financing (40 people/workshop) (at least 50% women)</li> </ul>	Opérateurs et bénéficiaires du Projet	Ignorance the project cycle and mobilization the Méconnaissances des cycles de projet et mobilisation the fonds.	Controlled the project cycle;	training on practical cases	<ul style="list-style-type: none"> <li>Climate change</li> <li>Equity</li> <li>Autonomy</li> </ul>
	The participants (operators and beneficiaries) are trained on the implementation and joint management of projects : <ul style="list-style-type: none"> <li>12 workshops on the participatory approach (20 people/workshop)</li> <li>12 workshops in conflict</li> </ul>	Opérateurs et bénéficiaires du Projet	Ignorance the project cycle and mobilization the Méconnaissances des cycles de projet et mobilisation the fonds.	Controlled the project cycle;;	training on practical cases	<ul style="list-style-type: none"> <li>Climate change</li> <li>Equity</li> <li>Autonomy</li> </ul>

Components	Specific actions	Concerned actors	Baseline	Expected improvement	Assumption: ownership / sustainability	Principle of the policy of the FA concerned by the action
	management and mediation (12 people/workshop) (at least 50% women).					

## 4. CONCLUSION AND RECOMMANDATIONS

The analysis of these "SOFT" action and their potential impacts, expressed in terms of improving the initial situation, demonstrates their relevance to local needs for a climate change resilience.

As shown in environmental and social notice, these actions generate a significant aggregate impact that resides in improving awareness on climate risk and the need for adoption of good adaptation practices through information, communication, demonstration and capacity building.

The realization of these actions meet perfectly with most safeguard principles recommended by the FA and favour those related to the Climate Change, human rights, access and equity, empowerment of women and youth.

It is clear that these SOFT actions act as an anticipated plan to strengthen the capacities of actors (institutions, beneficiaries and operators) for the sustainability of physical actions and the implementation of the environmental and social management plans (ESMP) established for physical actions. Indeed, the mitigation of negative impacts and the enhancement of the significant positive impacts generated by the implementation of these physical actions can not be provided without such "SOFT" actions.

In the objective of the perpetuation, the ANDZOA together with its institutional partners have to ensure the continuity of these actions, following the implementation of the package of the PACCZO through assisting beneficiaries and their guiding and the replication of successful actions in other cities.

In the same vein, it is also recommended to attempt a reconciliation with the municipalities to support them in the elaboration of their communal development plans (CDP) or reviewing of the plans for the integration of the adaptation actions for CC tested in of the PACCZO. This will be done in consultation with the general direction of local collectivities (DGCL), under the Ministry of Interior, which attempts the integration of climate risk in territorial planning.

A benchmark with the actions taken, or being to be, in the framework of other projects should to be made. These include in particular the CB2-UNDP Project, GIZ-NACC (Adaptation to climate change and the Nagoya Protocol), the Adaptation to Climate Change Project for Resilient Oases. These projects are governed, among others, by the Ministry in charge of Environment, HCEFLCD, in collaboration with other national and regional institutions. A harmonized documentation of lessons learned may enrich and sustain the actions of the the PACCZO.