FAO/GLOBAL ENVIRONMENT FACILITY
PROJECT DOCUMENT

PROJECT TITLE:Conservation of biodiversity and mitigation of land degradation through adaptive management of agricultural heritage systems. **PROJECT SYMBOL: GCP/MOR/045/GFF**
Recipient Country/ies: Morocco
Resource Partner: GEF
FAO project ID: 629911 **GEF Project ID:** 5481
EXECUTING PARTNER(S): National Institute for Agricultural Research (INRA), Ministry of Agriculture and Marine Fisheries (MAPM)
Expected EOD (starting date): March 2015
Expected NTE (End date): December 2018
Contribution to FAO's Strategic Framework[1] **a. Strategic objective/Organizational Result:** SO2: OO1 **b. Regional Result/Priority Area:** Promote Sustainable Use and Management of Natural Resources[2] **c. Country Programming Framework Outcome:** CPF- Priority area 1; Outcome 1.2: Small Scale Family Farming is improved and diversified in the context of Green Morocco Plan, Pillar II. CPF- Priority area 2; Outcome 2.4: The standard of living of vulnerable populations is improved.
GEF Focal Area: Land Degradation; Biodiversity
GEF Strategic Objectives: BD-2– Mainstreaming biodiversity in production landscapes/sectors LD-1– Ecosystem services in production landscapes (agriculture, rangeland) LD-3 – SLM in wider landscapes (integrated management)
Environmental Impact Assessment Category (insert √): A B C √

Financing Plan:	
GEF allocation:	USD 771 918
Co-financing:	
FAO	USD 350 000
ADA – *Green Morocco Plan (PMV), Pillar II*	USD 2 000 000
ANDZOA – *Improvement of Agricultural Production in Oasis*	USD 4 000 000

[1] For projects operated by country offices, it is necessary to link projects in FPMIS at OR level. For all other projects, linkage at product/service level is necessary

[2]Based on the *Priorities for FAO activities in the Africa region, Focus areas of work for 2014-2015 and beyond*, 28th Regional Conference for Africa.Tunis, Tunisia, 2014 Source: http://www.fao.org/docrep/meeting/030/mj777e.pdf

INRA – *Agricultural and Environmental Research Programme* APDESPS - *Development of the Southern Oasis Programme* Sub-total co-financing: **Total Budget**:	USD 500 000 USD 1 000 000 USD 7 850 000 **USD 8 621 918**

EXECUTIVE SUMMARY

Morocco has a diverse and varied landscape and, as part of the Mediterranean basin, is one of the most biodiverse regions in the world and a 'hotspot' for conservation priority.

However, the valuable biodiversity in the country and more specifically the Atlas Mountains and its oases systems is being lost. Increasing pressure on the Atlas' mountains and oases multiple resources has led to deterioration of biodiversity, and gradual simplification and loss of uniqueness in the ecosystem. As a result, there has been a depletion of natural productivity, mostly a reduction in biodiversity. On estimate, 25% of the endangered plant species (1700 taxa) and nearly 600 animal species have reached the threshold of non-renewal and are registered as endangered species. This has negatively impacted the life quality standards and sustainability and livelihoods of the traditional communities in Morocco. In turn, their pressure on natural resources is increasing.

Overgrazing, unsustainable harvesting, unregulated hunting, increased urbanization, all contribute to the loss of local plant and animal species. Moreover, 30,000 hectares of vegetal cover is lost every year, which has significant implications for the various species protected by this cover.

Although the national government is implementing various initiatives to respond to the growing environmental problems in the country and, in particular, in the oasis systems, further efforts are needed to meet the challenges to ensure integrated approaches for sustainable development and biodiversity conservation. The package of engineering and technology solutions, long put forward to solve the problems in these areas have demonstrated failure. These solutions, sometimes conceived outside of the socio-cultural context of the people concerned and their practices, have resulted in adverse negative effects.

Without a GEF intervention, continued survival of oasis agro-biodiversity will be threatened by various factors such as the loss of customary institutions and forms of social organization that underpin the management of oasis systems; abandonment of the traditional cultivation and farming systems; conversion of land and habitat in and around traditionally managed fields to alternative uses such as unsustainable intensive farming, plantations; and the displacement and dilution of traditional varieties cultivated in these systems.

The proposed GEF project is a joint effort by the National Institute of Agricultural Research (INRA), the Ministry of Agriculture and Marine Fisheries (MAPM), local stakeholders, FAO and the GEF to support the above mentioned areas of intervention and the improvement of the populations' standard of living in fragile oasis systems. The project will partially be blended with and co-financed by the MAPM flagship program, the Green Morocco Plan and associated partners. The project areas include five oasis systems located in the High Atlas (Imilchil- Amellago), the Anti-Atlas (Ait Mansour) and the pre-saharan (Figuig, Assa and Akka) agro-ecological zones.

The project will adopt a holistic approach, aimed at enhancing the sustainable management of the ecosystems and their natural resources, while focusing on a balance between conservation, adaptation and socio-economic development. Enhanced coordination between traditional institutions and regulations with 'modern' ones will be promoted. The proposed project has potentialities of up-scaling the approach in a broader landscape, and provides the necessary focus to the once valued oases agricultural practices which include conserving ancient efficient irrigation and water management

systems, farming and sheep breeding practices, and strengthen the customary community participatory management practices for natural resources.

The project will be implemented through the following components:

Component 1: *The enabling environment to support the conservation of agro biodiversity has been enhanced through targeting regulatory frameworks, local institution building and collection and storage of data*. This component will enhance the capacity of government and local institutions in their efforts to promote oasis agricultural biodiversity conservation and strengthen local seed supply and distribution systems.

Component 2: *Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology*. Interventions will focus on the improvement and rehabilitation of crop systems, control of water and soil salinity, protection and management of floodwaters and protection against silting.

Component 3: *Mainstreaming of the biodiversity conservation and sustainable use into the local communities' strategies for economic diversification in Oases landscapes*. This component will focus on product or service labelling according to standards of sustainable production, biodiversity conservation, and market access development.

Component 4: *M&E and information dissemination*. The objective of this component is to ensure a systematic results-based monitoring and evaluation of project progress. Thus achieving project outputs and outcome targets that are established in the Project Results Framework, as well as promoting the wider dissemination of project information, data and lessons learned for replication in other areas.

By supporting an improved soil health and fertility and promoting sustainable management of land and water resources and agricultural practices, the project will enhance food production and improve the livelihood of the local communities. Moreover, the project will improve the sustainability of highly valuable oasis systems by supporting the conservation of biodiversity in the selected project sites, which are located in natural reserves. More specifically, the project will deliver the following GEBs: i) *in situ* conservation of selected pollinators and crops/plants including staple foods such as local durum wheat, local vegetables, leguminous crops which are important for nutrition and food security; ii) improvement of soil health and fertility, enhancement of soil resilience to increase organic matter; iii) reduction of soil erosion in mountain valleys, iv) mainstreaming of conservation and sustainable use of biodiversity into regulatory frameworks, v) mainstreaming of biodiversity considerations into market mechanisms and increased investments in SLM (product labelling). The benefits will be verified by monitoring: i) at least 500qx local seed varieties conserved, ii) five drafted and submitted applications for product labelling; ii) 650ha of agricultural land benefitting from improved agricultural practices and labelled production standards, iii) 1117 ha of agricultural land protected against flooding iv) the adoption of SLM and sustainable production intensification practices by at least 500 rural farmers in the 5 selected sites.

This project will also generate GEBs by contributing to Aichi Targets #1 and 2 by i) raising awareness on the value of biodiversity and the necessary steps to safeguard it and sustainably manage it, ii) supporting the integration of biodiversity conservation and its value into national policies and strategies in Morocco, through policy recommendations and advocacy.

TABLE OF CONTENTS

GLOSSARY OF ACRONYMS

ADA	Agency for Agricultural Development
AL	Agricultural Label
AMABO	Moroccan Association of Organic Production
ANDZOA	National Agency for the Development of Oasis and Argan Areas
AO	Appellation of Origin
APDESPS	Agency for the Promotion and the Economic and Social Development of the Southern Provinces of the Kingdom
AWP/B	Annual Work Plan and Budget
BH	Budget Holder
CEO	Chief Executing Officer (GEF)
DDFP	Directorate of Production Chain Development
EP	Executing Partner
FAO	Food and Agriculture Organization of the United Nations
FPMIS	Field Project Management Information System
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
GEFSEC	GEF Secretariat
GI	Geographic Indication
GEI	Economic Interest Group
GPI	Public Interest Groups
HCEFLCD	High Commission for Waters and Forests and Combating Desertification
IAV	Hassan II Agronomic and Veterinary Sciences Institute
INRA	National Institute for Agricultural Research
IUCN	International Union for Conservation of Nature
LTO	Lead Technical Officer
LTU	Lead Technical Unit
MAPM	Ministry of Agriculture andMarine Fishery
M&E	Monitoring and Evaluation
ODECO	Office for the Development of Cooperatives
OMPIC	Moroccan Office of Industrial and Commercial Property
ONCA	Office for Agricultural Advisory Services
ONSSA	National Food Safety Authority
ORMVAT	Regional Office for Agricultural Development of Tafilalet
PIF	Project Identification Form (GEF)
PAR	Regional Agricultural Plans
PIR	Project Implementation Review
PPG	Project Preparation Grant (GEF)
PPGR	Promotion of Small Income Generating Projects
PPR	Project Progress Report
PMV	Plan Maroc Vert (Green Morocco Plan)
PRODOC	Project Document
PSC	Project Steering Committee
PY	Project Year
SDOQ	Distinctive Signs of Origin as they relate to the Quality of products
STAP	Scientific and Technical Advisory Panel
TCI	Investment Centre Division (FAO)
TOR	Terms of Reference
USD	United States Dollar
ZIP	Zones of global importance

SECTION 1 – RELEVANCE (strategic fit and results orientation)

1.1 GENERAL CONTEXT

a) General development context related to the project

Located between the Mediteranean Sea (to the northeast) and the Atlantic Ocean (to the west), between the Saharan desert (to the south) and Europe (to the North), Morocco is one of the richest Meditteranean countries in terms of biodiversity and varierty of ecosystems. Due to its location and topography, it faces extremes in climate, with negligible rainfall in the desert plains and precipation up to 2 meters per year in the northern heights of the country.

These climatic and altitudinal differences lead to a rich variety of ecosystems, habitats and species. The inventory of biological resources indicate that the country has more than 32,000 taxa, likely an underestimation. Increasingly, the country is internationally considered as a centre of diversity for a number of cultivated plants and wild relatives. Nearly 15 percent of the known species are endemic, placing the country among those having a high level of endemism. The ecosystems of the Atlas mountain regions, and in particular their oases, are rich with diverse habitats and species diversity. Oases'importance is global and, as such, they have been inserted into the IUCN[3] list. Most of the selected IUCN sites in Morocco are at an altitude of 2500 meters or higher and are covered with alpine and subalpine vegetation. These sites are also very rich in endemic species, such as the National Park of High Atlas Oriental where the rate of endemism exceeds 80 percent. The ZIPs[4], which are important sites for plant biodiversity in Morocco, are characterized by a high number of national endemic and steno-endemic species. The richest areas are Jebel Ifrane National Park(196),the Toubkal National Park(164) Ayashi (75) and the Jebel Bou-BouIblane Naceur(92). The five selected project sites are located in IUCN areas as follows:

- Imilchil site located in Parc Haut Atlas Oriental (Ramsar Site and a ZIP);
- Assa, Akka and Figuig sites located in the Réserve Biosphère des Oasis; and
- Ait Mansour site located in the Réserve Biosphere Arganier. (*see Map in Annex 7*)

The oasis systems in South and North-East Morocco exhibit an exceptional natural context and offer an attractive landscape. In spite of the dry climate of the region, the oasis agricultural systems represent a major asset since they are still healthy and traditional. Its habitants are custodians of a rich indigenous knowledge that is responsible for conserving a unique oasis agro-ecosystem based on a three-tier canopy level system, which includes date palm (the highest tier), orchards (middle tier) and annual/perrenial recurrent crops. Unfortunately, these original products of high commercial value remain underexploited.

Environmental degradation is one of the main threats to the rich biodiversity of Morocco. In the specific case of the oases systems, the main environmental problems faced by oases communities and farmers include the mounting water scarcity, fragile soils, water and wind erosion, and land and water degradation. These problems are resulting in a spiral of increasing rural poverty and acceleration of degradation of natural resources, including pastoral genetic resources and local vegetation, with outward migration of poor people to urban areas and abroad (mainly young men).

[3]International Union for Conservation of Nature.
[4] For its name in French, *Zone Importante pour les Plantes*. Biodiversity Hotspots.

In Tafilalet Oases, production levels have declined by 21% for cereals, 6% for lucernes, 34% for date palms and 16% for fruit trees in the past 5 years. This productivity decline is due to the shrinking of sustainable land area for agriculture (3.5% of the total area of Oasis every year) caused by water shortage.

The replacement of customary institutions (including indigenous knowledge systems) by new forms of state organisation is leading to the progressive abandonment of traditional agricultural systems, and resulting in a gap in the transfer of traditional methods to younger generations (if not contempt) and on the long term, genetic erosion and loss of wild species.

In oasis systems, civilizations depend on the management of scarce water resources and the ingenious systems that have enabled people to adapt to the pre-Saharan arid environment by developing a particular ecosystem (and micro-climate). One of the best examples of the genius of oasis civilization is the traditional system of khettaras, draining irrigation galleries built over 400 years ago to ensure the oasis' water supply5. In the project area of intervention, Khettaras represent one of the main means for the mobilization of ground water resources. However, in many cases these remain damaged and poorly maintained.

Moreover, Morocco has an impressive 30 years long wealth of research results on the benefits of conservation agriculture regarding: a) water retention in the soil (real underground water and not from the dam), b) erosion reduction in all forms and c) reversing of the carbon cycle from the emission to sequestration with the reconstruction of the vertical soil structure; these achievements provide all necessary elements for a better management of natural resources.

b) Loss of Biodiversity and Land Degradation impacts on global environmental benefits

The valuable biodiversity in Morocco, and more specifically the Atlas Mountains and its oasis systems, is being lost. Increasing pressure on the Atlas' mountains and oases' multiple resources has led to deterioration of biodiversity, and gradual simplification and loss of uniqueness in the ecosystem, leading to reduced natural productivity[6]. This has negatively impacted the life quality standards and sustainability and livelihoods of the traditional communities in Morocco. In turn, their pressure on natural resources is increasing.

Overgrazing, overharvesting, increased urbanization, all contribute to the loss of local plant and animal species. Moreover, 30,000 hectares of vegetal cover is lost every year, which has significant implications for the various species protected by this cover. Agricultural pollution caused by the use of fertilizers and pesticides may also result in local biodiversity degradation, while the introduction of foreign species in Morocco's ecosystems risks eroding indigenous germoplasm.

In terms of agricultural biodiversity, Morocco has consistently pursued a policy aimed at supporting the introduction, acclimation, and selection of crops. The national gene-bank contains close to 50,000 plant accessions. The indigenous germo-plasm consists of about 450 species of over100 different varieties.

[5]Khettaras can easily be located through an alignment of cones of debris resulting from the digging of wells and galleries, and upon which the cleaning materials are unloaded during maintenance phases. The wells also ensure that the gallery is aerated, and prevent air saturation, which tends to weaken the walls.

[6] An estimated 25% of the endangered plant species (1700 taxa) and nearly 600 animal species have reached the threshold of non-renewal and are registered as endangered species (Human Development Report 2005).

On the other hand, support to *in situ* conservation of agricultural biodiversity remains inadequate although practices based on ancestral techniques are widely adopted/present in extensive farming areas.

Moreover, overexploitation and unsustainable management of croplands and rangelands is degrading soils, reducing crop and fodder yields, and long-term sustainability. Land degradation is a key challenge for Morocco and its biodiversity, with an estimated annual cost of USD134 million.[7] Ninety-three percent of the land is arid and semi-arid, and soils are fragile due to their limited organic-matter content (less than 2 percent). With average soil loss of more than 500 tons per square kilometer per year in the High Atlas Mountains, and up to 2,000 tons per square kilometer per year in the Rif region, Morocco has high erosion rates due to runoff water, unsustainable agricultural practices and wind. Along with overgrazing, this is causing land degradation and serious desertification throughout the country. At the same time, desertification is progressing due to: a) decreasing rainfall; b) faster and more intense water discharge due to upstream improper agricultural practices and removal of trees and shrubs from watershed slopes; and c) overexploitation of groundwater reserves in the valley floor (for irrigation, livestock watering and human consumption). Depletion of soil fertility is a major biophysical cause of low per-capita food production. Over decades, small-scale farming operations have removed large quantities of nutrients from the local soils without applying sufficient quantities of manure or fertilizer to replenish them. Wind erosion is damaging most agricultural lands. There is a loss of 500 ha/year of fertile agricultural land in Morocco. Similarly, oases communities are threatened by the depletion of aquifers through deep pumping for modern irrigated agriculture and disruption of traditional institutions for water management and associated knowledge systems. Around 2 million hectares of land suffer from water erosion, totaling degradation of 3,000 tons of fertile soil per square kilometer per year.

In the specific case of the oases systems, unsustainable management of croplands and rangelands is causing soil degradation, significantly reducing date palm and grain production yields. Moreover, disease outbreaks such as Bayoud[8] (fungus affecting palm dates), problems of soil salinity, water erosion, flooding and silting are further affecting the livelihoods of rural populations eroding oasis biodiversity, pollinators and traditional knowledge systems.

c) Institutional and policy framework

The main institutions governing agricultural biodiversity and land management in Morocco are the Ministry of Agriculture and Marine Fisheries (MAPM), the High Commission for Water and Forests and Combating Desertification (HCEFLCD) and the Southern Development Agency.

Several state agencies under the MAPM share the management of agricultural development. These include: the Agency for Agricultural Development (ADA), which is responsible for sector policies on agricultural biodiversity, value chain development and natural resources management and oversees the implementation of Green Morocco Plan (PMV)[9]; the Agency for the Development of Oases zones and the Argane area (ANDZOA) responsible for

[7] World Bank, ASIMA, 2013
[8] Epiphytic fungal disease of date palm.
[9]For its name in French, Plan Maroc Vert.

promoting and ensuring the preservation, the protection and the development of oasis ecosystems and Argan areas; the Regional Offices for Agricultural Development (ORMVAs) which provide technical support to agricultural development projects in the administrative regions of the country; the National Institute of Agricultural Research (INRA), working on research and technology transfer activities related to improving productivity, competitiveness and sustainability of agricultural production and the characterisation, preservation and valorisation of natural resources as well as plant and animal products; the National Food Safety Authority (ONSSA); the Office for Agricultural Extension Services (ONCA); and the Office for the Development of Cooperatives (ODECO).

The HCEFLCD is a high level, cabinet-appointed agency, with oversight responsibilities on line departments concerning all aspects of environmental management in forest areas. The HCEFLCD has the authority and the responsibility to coordinate development activities in forest areas ensuring social and environmental sustainability.

Moreover, the Agency for the Promotion and the Economic and Social Development of the Southern Provinces of the Kingdom (APDESPS) is a special agency directly concerned with the economic and social development of the southern provinces of Morocco.

The MAPM's flagship program is the Green Morocco Plan which aims to meet new challenges facing Morocco's competitiveness and opening to markets. Since its inception in 2008, the Green Morocco Plan has initiated extensive and comprehensive institutional reform in the agricultural sector, leading to further reorganization of the Ministry of Agriculture and redefinition of the missions and mandates of its entities. Thus, regarding the organization of the Ministry, the reform led to: the restructuring of the Department of Agriculture in 2009 around a new organization chart to better distribute its missions and strengthen its capacity in terms of sector management and oversight; the establishment of 16 Regional Directorates of Agriculture to support regionalization and decentralization; and the establishment of new entities to support the Green Morocco Plan implementation, such as ADA, ANDZOA and ONSSA (mentioned above).

The proposed project will focus on Pillar II of the Green Morocco Plan which consists in providing support to small scale agriculture through the implementation or professionalization of 545 projects of small farms in difficult rural areas, thereby promoting greater productivity, greater recovery of production and sustainability of farm income. This second pillar also seeks the conversion of cereal crops with higher value added (or less sensitive to precipitation) and processing and development of local products.

In terms of labelling of agricultural and food products, two labelling/certification systems exist in Morocco. One directly involves the private sector and mainly targets products for export while the other is implemented, regulated and controlled by the MAPM. The latter targets a range of agricultural products, mainly organic and origin-linked quality products and is governed by a series of decrees and laws enacted between 1984 and 2013 for food quality control and fraud repression, amongst others.

In recent years, geographical indications and appellation of origin have gained more importance, leading to the establishment of the Law #25-06 on June 2008. This law regulates the use of distinctive signs of origin as they relate to the quality of food and agricultural products (SDOQ) including labelling of geographical indication. To apply for labelling geographical indication and origin appellation, producers associations and food processors

have to file a request (cahier des charges) to a national commission created for this purpose. Food and agricultural products that have been approved by this commission are registered by the Moroccan Office of Industrial and Commercial Property (OMPIC) and the MAMP and then published in the Official Bulletin.

The law recognizes three different kinds of labels:

- *Geographical indication* (GI): identifies the origin, quality, reputation or other characteristics of products. A GI signals to consumers that the goods have special characteristics due to their geographical place of origin;
- *Appellation of Origin* (AO): represents a more restrictive category of GIs as geographical designations of products whose quality and characteristics are due exclusively or essentially to the geographical environment, including both natural and human.
- *Agricultural label* (LA): identifies high level quality products based on how they are produced, processed and packaged, their manufacturing characteristics including, where applicable, their geographical origin.

In terms of organic production and organic labelling, a law (39-12) addressing organic agriculture was passed on 2012, based on European standards. Within the MAPM, the Directorate of Production Chain development (DDFP) is the unit in charge of all matters related to organic agriculture and labelling together with the Moroccan Association of Organic Agriculture (AMABIO). However, despite gaining more importance in recent years, organic farming in Morocco still faces several challenges, including lack of supportive national policies and initiatives for organic consumption and lack of national investment in data collection about organic agriculture and absence of local labelling and inspection bodies.

The Moroccan Association of Organic Agriculture (AMABIO) was created in 2010 to guarantee the Biological Label in Morocco while supporting the development of local products by investing resources in scientific research, value chain development and improving marketing strategies. During the baseline studies, Producers organizations in the project area of intervention have been identified as potential members of the AMABIO. In addition to AMABIO, There is also the Date Palm Producer Association heavily involved in the national program of date palm production and commercialisation.

d) Problems the project will address

(i) Loss of Biodiversity and Land Degradation

The following major constraints affecting biodiversity and soil quality in the five pilot sites were assessed through the PPG financed studies:

- **High levels of salinity in water and soil:** in most of the targeted oasis systems, soil salinization is causing native vegetation to become unhealthy or die leading to a decline in biodiversity through the dominance of salt-resistant species.

- **Reduced groundcover** is causing soils to become more prone to erosion, polluting water with increased sediment, making it unsuitable for both human and animal consumption and threatening high value ecosystems and the plant and animal species they support.

- **Water scarcity-mismanagement of water resources:** In terms of water availability, the current situation is highly precarious especially in the southern oasis systems, due to the deteriorated state of the traditional water collection and irrigation systems. Historically, irrigation was mostly been made possible through the use of an intricate network of earthen canals (seguias), all of these ancient and historic dams have now silted up or breached and are becoming useless for irrigation. Most canals were traditionally filled with water diverted from the larger river channels (oueds or wadis), or from small reservoirs - intermittent pools of water – impounded behind a series of low-water dams across the oueds. However, the introduction of new technologies and government policies, have led to changes in traditional water management. Insufficient water (from the dam) and non-sustainable methods of groundwater use (overuse of diesel pumps) are resulting in a dramatic lowering of the water table underlying the oasis systems. These modern water technologies, because they are proffered and subsidized by the government, continue to replace the few remaining khettara, which are abandoned as the water table drops. Khettara are employed either as primary irrigation sources or at least to supplement the water from mechanized wells and government canals. “Qsour” which used to operate khettara have abandoned theirs only because "the water has gone dry". Usually this means that water no longer flows through the khettara because the water table has dropped, but it may also mean that a flood has damaged the subterranean conduit, or the tunnel has collapsed, or side walls have blown out into a neighbouring tunnel as the result of dynamite (occasionally) used during cleaning operations. In Akka for instance, according to the baseline study developed during this project preparation less than 10 % of the operating khettara systems is foreseen to remain active in the near future.
  In terms of biodiversity, decline in water availability is causing the abandonment of crop land and the prioritizing of date palm production. Loss of crop production is endangering endemic seed varieties, severely threatening species and genetic resources.

- **Loss of soil fertility**: unsustainable land management coupled with low use of fertilizers and manure has compromised soil fertility and quality in most of the targeted oasis. Losses of vegetation covering some areas due to overgrazing and over-harvesting of wood for fuel, coupled with decreased water table levels is causing severe soil erosion. Increased sand drift and the development of new dune fields in some areas also is a considerable cause of loss of soil fertility. The limited adoption of good agricultural practices also compromises soil fertility, for instance, in all targeted oasis systems, legumes are seldom employed in crop rotation and intercropping.

- **Low agricultural productivity**: concerning productivity and productivity levels of date palm production, major constraints include lack of inputs, inadequate labour and the high costs for labour-intensive management practices including pollination, pruning and harvesting throughout the year. Emigration of skilled labour to work in the cities is further worsening the status of date palm production. As the majority of these migrants are young men between the age of 20 and 40, necessary agricultural activities such as soil preparation, selection and planting out of palm offshoots are hardly executed by many households. The maintenance of date palms is generally minimized. The result of this neglect is the running wild of the palm-groves, densely grown with date palms, reducing harvests and consequently, agricultural productivity. In many oasis systems, the costs of date production have surpassed revenues and to compensate for production losses famers have introduced new and improved seed varieties and crop species. In Imilchil for instance, apples and potatoes are becoming the main agricultural produce at the expense

of local seed production. Endogenous varieties of cereals and legumes are mostly affected - a loss of 37%of native varieties has been reported. The loss in plant genetic resources is also threatening the survival of wildlife species, altering high value ecosystems.
Furthermore, agricultural production is affected by Bayoud disease. Bayoud is caused by fungus and has affected nearly all Moroccan palm groves killing more than 12 million palm trees. In the oasis system of Akka, date palms numbered 1.2 million in 1970, currently only 800,000exist.

1.1.1 Rationale

*a) Baseline projects and investments **for the next 3-5 years** addressing the identified GEB threats and causes and development of the CC vulnerable sector (main co-financing sources of the project)*

The 2008 **Green Marocco Plan** (PMV) constitutes the Moroccan government's agricultural policy, with the goal of making agriculture an important driver of economic growth by 2020. The two pillars of the PMV cover (I) high-productivity modern agriculture; and (II) support for smal scale agriculture. Both pillars focus on a process of value creation driven by the voluntary aggregation of farmers and farmers associations around private investors, traders and/or entrepreneurs (contract farming model), with primarily private sector financing within the first pillar and public financing within the second.

Pillar II of the PMV has been devised to provide solidarity-based support to small scale farming with a view to improving the income of the most precarious farmers. This will be done by implementing 545 economically viable projects. The latter integrate the safeguarding of natural resources, by working to establish three project categories:

- Reconversion Projects: substituting cereal cultivated areas with high-value crops;
- Intensification Projects: improving productivity and valuation of existing productions; and
- Diversification Projects: creating complementary agricultural revenues through additional production (saffron, honey, perfume rose, argan tree, carob tree, caper bush, aromatic and medicinal plants, among others).

Moreover, the PMV is linked to safeguarding natural resources in order to promote sustainable agriculture by:

- Implementing projects within the context of improving the agricultural sector's resilience to future climate change as well as preserving biodiversity;
- Integrating technology capable of adapting to climate change on matters relating to genetic improvement, recourse to water/soil conservation techniques and good agricultural practice;
- Implementing a National Programme for Water Savings Economising in Irrigation.

The PMV is linked to the adoption of a participatory and contractual approach as a pragmatic transactional basis intended to concretise development projects. This therefore inscribes itself within a view to mobilise all of the concerned stakeholders, whose administration and organisms are supervised by the MAPM through its agency ADA, local and regional elected representatives, economic operators and their professional organizations.
The envisaged partnerships take on different forms:

- Regional Agricultural Plans (PAR) established between Regions, Chambers of Agriculture and the MAPM;
- Contract-programmes (CP) of agricultural sectors, signed between inter-branch organisations or representative professional Organisations and the MAPM. These programmes constitute the basis for collaboration between the public and private sectors.

The main investment projects are identified in the 16 PARs. These projects altogether aim to: increase production levels of the identified sectors; improve the conditions and quality of the commercialization of production; increase the level of valuation of irrigation water. Projects will be carried out benefitting natural resources and creating value-added taxation and employment.

The most pertinent projects of the PARs contribute to the baseline of the proposed GEF project as follows:

PAR Guelmime-Smara, which includes the Assa site, disposes of a budget of 204M USD for the 2013-2020 period. Main sectors are the palm date, vegetable crops, cereals, henna, animal production and the improvement of fields and apiculture. The Assa site is currently benefitting from several projects. Some of these, such as pruning date palms, maintenance of irrigation systems, and the construction of dikes and walls against flooding of Oued Assa have been completed. Others are currently being implemented and logically follow in the footsteps of their predecessors. This is the case for rehabilitating the Assa date palm grove based on noble palm varieties and resistant to the Bayoud disease and other crop diseases. These include regional fruit species (pomegranate, fig, olive, almond and others), henna, which is a cash crop in the region, vegetable and forage crops, needed after introducting the D'Man sheep breed in the Assa oasis. Amongst existing projects in this location, apiculture is an important activity due to the abundance of *Euphorbia beaumeruene*. The site has 4500 hives divided over about forty cooperatives. In 2012, honey production reached about 40 tons. Assa honey is labelled. In addition, two processing units, one for goat milk and the other for camel milk have been installed. Nevertheless, the need for expertise on normalising camel meat and hard goat cheese has been voiced. The Projects implemented by the various agencies of the MAPM, namely ADA, ANDZOA, APDESPS and ONCA, as part of the PAR budget allocation will support Component 2 and Component 3 activities.

PAR Sous-Massa-Draa, which includes the project sites of Akka and Ait Mansour has a significant budget for the 2013-2020 period. Projects implemented in this area essentially focus on rehabilitating the irrigation system over 12 kilometres, the construction of eight underground dams to feed the date palm grove, and dikes to prevent river flooding and to protect pastures. The Bouittoub variety originating from this site has been labelled as a Geographical Indication. The INRA has launched the programme for tissue culture multiplication (in vitro) of this variety. Ongoing projects focus on rehabilitating date palm oases groves via in vitro multiplication cultivation of specific varieties. These are produced in the context of the palm date Public & Private partnership (Contract Programme) between the State and the private sector. It also includes improving production techniques and the rehabilitation of the irrigation system. Other projects scheduled for 2015-2016 focus on water management. They concern the realisation of 40 water points and the purchase of 100 reservoirs (cisterns) for a budget for a budget of 1.4M USD.

The Ait Mansour site is part of this PAR and is considered a priority by the public authorities. A budget of 536,000 USD has been granted to this area for 2014-2015 and is to be utilized for several activities such as pruning palms and cleaning of palm groves; rehabilitating Khettaras; protecting fields and irrigation systems against flooding; maintenance of irrigation systems and water reservoirs; reinforcing the capacity of local actors; rehabilitating high added value crops (saffron, roses and other aromatic plants) and the development of apiculture.. The implementation of activities linked to rehabilitating palm groves and the irrigation system is the responsibility of ANDZOA alongside the in-kind contribution of the local population. The development of apiculture (formation, purchase of tree nursery apiaries) and the creation of cooperatives are headed by the Provincial Direction of Agriculture of Tiznit. The Projects implemented by the various agencies of the MAPM, namely ADA, ANDZOA and ONCA, within the framework of the PAR ***Sous-Massa-Draa*** will support Component 1, Component 2 and Component 3 activities.

PAR Meknès-Tafilalet includes the project site of Imilchil- Amellago. Investments mainly focus on water and irrigation system recovery. The region has seen a large growth in fruit species, such as apple tree, peach tree and almond tree. An almond crushing plant has been built in Amellago in the context of this crop's recovery. An apple packaging and vinegar production plant has been created at the Imilchil site. This plant, which has a 100-ton per year capacity, ensures the partial recovery of an increasingly low apple production, which is due to lack of water in the critical phase of fruit growth. Other plantation projects are being implemented by the PMV in the region. The Projects implemented by the various agencies of the MAPM, namely ADA, ANDZOA and ONCA, within the framework of the PAR will support Component 1, Component 2 and Component 3 activities of the proposed GEF project.

PAR Figuig disposes of an integrated programme budget amounting to 247,000 USD for the 2011-2014 period. In partnership with ANDZOA, activities in the Oasis system of Figuig are centred on integrated economic development with the extension of palm groves over an area of 700ha including land development and induction of water from the Sffeissif dam. It also focuses on hydro-agricultural developments, the improvement and utilisation of water resources and the rehabilitation of Khettaras. One of its achievements has been assisting farmers in establishing cooperatives and integrating them into the GEI (Group of Economic Interest) in order to improve their negotiation power and competitiveness. This has resulted in creating a favourable context for the diffusion of more adequate technologies and approaches to improve productivity. With regard to the development of date production, the Figuig palm grove has been equipped with a packaging plant with a capacity of 500 tons. A programme to reinforce the capacity of local actors in best practice on date production and management of cooperatives is currently being implemented. The Projects implemented by the various agencies of the MAPM, namely ADA, ANDZOA, APDESPS and ONCA, within the framework of the PAR will mainly support Component 2 and Component 3 activities of the proposed GEF project.

Within the framework of the PMV and the PARs, the main MAPM agency programmes that will provide co-financing to the current project are as follows:

ADA's ***PMV Pillar II*** projects (explained above). ADA will provide USD 2,000,000 of cash co-financing to the project (*See details in Section 4.3.1*).

ANDZOA's ***Improvement of Agricultural Production in Oases*** (2010-2020) which aims at conserving and developing products from Oases systems. ANDZOA will provide USD 4,000,000 of cash co-financing to the project (*See details in Section 4.3.1).*

INRA's ***Agricultural and Environmental Research Programme*** (2013-2020), which focuses on the in-situ conservation of agricultural biodiversity and value-adding of the products, derived from mountain areas and oases systems. INRA will provide USD 500,000 of in-kind co-financing to the project (*See details in Section 4.3.1*).

APDESPS's ***Development of the Southern Oases Programme*** (2010-2015), which seeks to mainstream different activities implemented by governmental departments, towards economic and social development of southern provinces. APDESPS will provide USD 1,000,000 of cash co-financing to the project *(See details in Section 4.3.1).*

Although the national government is implementing the above-mentioned initiatives to respond to the growing environmental problems in the country and, in particular, in the oasis systems, further efforts are needed to meet the challenges to ensure integrated approaches for sustainable development and biodiversity conservation. The package of engineering and technology solutions, long put forward to solve the problems in these areas have demonstrated failure. These solutions, sometimes conceived outside of the socio-cultural context of the people concerned and their practices, have resulted in adverse negative effects.

b) Remaining barriers to address threats on GEB/CC vulnerabilities

The baseline assessments and studies developed during the PPG financed studies identified three main barriers that are preventing the strategies for conservation of biodiversity and sustainable land management from being implemented:

Barrier #1: The institutional and regulatory frameworks promoting biodiversity conservation are inadequate and fail to address sustainable harvesting and product marketing. The seed sector is weak and with the dismantling of traditional productive systems, endangered endemic seed varieties and genetic resources continue to be severely threatened. Low yields due to unsustainable agricultural practices and the absence of appropriate technology for conservation and use of endemic seeds for production, coupled with the absence of a supportive structure for seed stockpiling, has led to the decreasing availability of landraces. Another cause of the scarcity of local seed varieties is of an economic nature. In the face of increasing needs of the local population and the absence of a recovery strategy for local production, the primary aim of farmers is to improve their income by introducing new commercial types and varieties. Yet, the introduction of new crops is negatively impacting on local varieties (genetic erosion). Apart from losses in local agro biodiversity, these crops are accompanied by an increased use of water, pesticides and fertilisers.

Barrier # 2: The introduction of the market law and increasing monetization of exchanges has greatly upset the world oasis, which is traditionally dependent of a solidarity-based economy. The thrust of individualism and the new economy have led to the gradual dismantling of the traditional structures. This upheaval is exacerbated by the harshness of the climate, the scarcity of water, the poor irrigation management practices, overgrazing of natural vegetation, limited provision of organic fertilizer, and the over-harvest of woody

vegetation for firewood in the pastoral areas at the periphery of the oasis to cover the needs for fuel wood. The operators in the oasis are engaged in a race to the water. The use of excessive pumping became the common reflex, which has resulted in the depletion of groundwater. Moreover, emigration of skilled labour to work in the cities is further worsening the status of traditional production systems which is generally minimized. The result of this neglect is the running wild of the palm-groves, densely grown with date palms, reducing harvests and consequently, agricultural productivity.

Barrier # 3: Weak integration of biodiversity promotion in the mechanisms of the market, low marketing infrastructure and incentive schemes[10] for farmers, and the weak institutional capacity of local and national actors (extension workers) to develop market strategies for agro biodiverse products continue to challenge the development of the oasis systems. Although in the past ten years Morocco has developed a significant regulatory and legal arsenal for the labelling of local products, boosting recovery in 16 of the country's regions, some shortcomings and gaps have however emerged with regard to the structure and implementing of certification systems, recognising labels for Moroccan consumers, and in particular connections between valuation measures and protecting genetic and agricultural resources, which lie at the basis of primary production. In relation to labelling mechanisms of agricultural products the following barriers have been identified:

- Traditional local products enjoy quality labels linked to origin but implementing these labels has not become entrenched. As a result, the impact of labelling on the revenue of relevant sectors has not yet been felt by producers;
- Key product sectors are not or poorly structured. They suffer from a lack of integration between upstream and downstream production processes. The PPG studies have demonstrated weak dynamics of professional organisation alongside the dominance of the associative model and weak regrouping in cooperatives and groupings of economic interest in all project sites;
- Valuation through agro-food processing is poorly developed;
- Commercialization is essentially carried out through intermediaries. There are however cases in which commercialization via short circuits has been adopted and;
- Aggregation projects are inexistent.

c) Incremental/additional reasoning (added value of the GEF/LDCF/SCCF financing)

Without this FAO- GEF intervention, the awareness of the need for conservation of agricultural biodiversity products in oasis systems will remain low, traditional water collection and irrigation systems will continue to deteriorate, loss of crop production will continue to endanger endemic seed varieties, severely threatening species and genetic resources, the institutional capacities for conservation activities and the resources committed will remain inadequate and the economic incentives necessary to encourage changes in human behavior will remain unshaped.

The GEF financing will support the initiatives and efforts initiated by the government to promote sustainable agriculture and improve agricultural production in Oasis systems and will provide incremental value by reinforcing an integrated approach increasing the multiple benefits and services derived from the Oasis systems. Through interventions aimed at

[10] Incentive schemes from the government to farmers include provision of free equipment for conversion to drip irrigation, digging equipment for wells and some support to the enhancement of production through labialization.

preserving water and soil resources, and at the same time valuating bio diverse crops and products, the project will reverse land degradation trends and promote biodiversity.

1.1.2 FAO's comparative advantages

FAO's Strategic Framework (2010-2019) specifically highlights the twin objectives of sustainable intensification of production to reduce hunger and poverty and sustainable management and use of natural resources. In adopting this Framework, FAO assists member countries in their pursuit of food security, sustainable rural livelihoods, equitable access to resources, and promotion of multidisciplinary and ecosystem-based approaches on sustainable agricultural and rural development. In the area of sustainable land management, FAO has a long history supporting member countries on a wide range of complementary SLM technologies and approaches, through training, information, communication, tools and equipment, advisory services for institutional strengthening, policy reforms and national programming. FAO has introduced and promotes a range of SLM programs and approaches, such as farmer field schools, conservation agriculture, catchment and farming systems approaches to integrated land and water management and better land husbandry, ″gestion des terroirs″ and local land planning, integrated plant and pest management (IPPM) and sustainable forest management.

As an intergovernmental body, FAO facilitates the promotion of sustainable traditional agricultural practices to its member constituencies (such as ministries of agriculture, forestry and fisheries) in different fora through intergovernmental bodies. FAO continues to enhance awareness, knowledge and understanding of crop-associated biological diversity providing ecosystem services to sustainable agricultural production; demonstrate methods for conservation, and sustainable management of agro-biodiversity; and promote mainstreaming of biodiversity conservation in sectoral plans and policies. FAO is already playing a pivotal role in the management of natural resources through a number of initiatives and projects in Morocco. It recently implemented the GIAHS project in selected pilot countries including a small UCODEP grant in Morocco to preliminary assess the oases agro-ecosystems. The gained experience and established network with national partners in Morocco are important elements of FAO's comparative advantage to implement the proposed project. This project intends to build on the foundation of lessons learned and good practices to broaden its adaptive approach towards sustainable land and water management and valuing agricultural heritage of the oases community.

FAO expertise in support to this project will be a combination of a biodiversity specialist, from the Plant Production and Protection Division (AGP) of the Sub-Regional Office for Near East, former regional coordinator of project GEF-PNUD-Bioversity *Maghreb Date Palm project*; as well as by a Land and Water specialist, also from the Sub-Regional Office for Near East. From HQs, when and if needed, the Territorial Development Officer of the Land and Water Division, NRL, will also be available for technical assistance.

1.1.3 Participants and other stakeholders

The key stakeholders involved in project activities are mentioned in the table below (see section 5 for more details).

Table1: Project Stakeholders

Institution/ Stakeholder	Institutional role	Role in the project

National Institute for Agricultural Research (INRA)	Lead agricultural research institute administered by the MAPM and governed by a Board of Directors representing several ministries and producer organizations. Responsible for coordination of programmes on agriculture and related environmental research. Main facilitator of policy and technical dialogues.	INRA will be the lead government counterpart and the Project Executing Partner with technical responsibility for the Project.
Ministry of Agriculture, and Marine Fisheries /ADA	State agency responsible for revitalizing agriculture, and responsible for sector policies on agricultural biodiversity and natural resource management. It is an Agency of the MAPM, established to support the implementation of the Green Plan Morocco.	ADA will be part of the PMCU and will mainly be responsible for providing technical assistance, supervision and monitoring of Component 3 on activities related to agricultural transformation and valuation of agricultural products.
Regional and Provincial Directorates of Agriculture (DRA/DPA)	Decentralized MAPM directorates responsible for operationalizing national strategies and policies as well as supervising county programme's at regional and provincial level.	DRAs and DPAs will coordinate activities at the regional/project site level. They will chair the Regional Project Management committees (RPMC) and coordinate activities amongst local stakeholders.
Ministry of Energy, Mining , Water and the Environment.	Ministry responsible for the conservation, management, development and proper use of the country's environment and natural resources, including those protected areas, watershed areas and lands of the public domain, as well as the licensing and regulation of all natural resources utilization.	The Ministry of the Environment acts as GEF Operational Focal Point and it is responsible for the coordination of all GEF activities in Morocco. It will be part of the PSC.
Agency for the Promotion and the Economic and Social Development of the Southern Provinces of the Kingdom (APDESPS)	State agency responsible for the economic and social development especially in the southern provinces. Policy advice.	APDESPS will be part of the PMCU and will provide technical support to all project activities implemented in the southern oasis of Figuig, Assa and Akka.
Agency for the Development of Oases zones and the Argan (ANDZOA)	State agency responsible for the oases region, and for the promotion of the economic and social development. Lobby and public awareness. Policy advice.	ANDZOA will be part of the PMCU and will mainly be responsible for providing technical assistance, supervision and monitoring of Component 2 (all outputs with the exception of output 2.1).
The National Food Safety Authority (ONSSA)	State agency responsible in charge of regulating, implementing, and controlling conformity of products with the local regulations, including standards, labelling, and packaging.	ONSSA will be part of the PMCU and will mainly be responsible for providing technical assistance, supervision and monitoring of Component 1 and Component 3 Outputs.
The Office for Agricultural Extension Services (ONCA)	State agency responsible for improving the governance and efficiency of agricultural extension	ONCA will be part of the PMCU and will be responsible for providing technical assistance,

	services.	supervision and monitoring of all project activities related to capacity building.
High Commission for Water, Forests and Desertification Control (HCEFLCD)	High level cabinet appointed agency, with oversight responsibilities on departments in charge of any aspect related to environmental management. Responsible for regulation and coordination of development activities in rural areas to ensure development which is economically and environmentally sustainable.	HCEFLCD will be part of the PMCU and the Technical Working Groups (TWGs) to provide technical guidance on Component 2 activities.
Regional Office for the agricultural development of the Tafilalet region (ORMVA-T).	Technical support during the project life, in different administrative areas.	ORMVA-T will chair the RPMC of Imilchil- Amellago and will be the focal point of the site of Imilchil in the PSC and PMCU.
Non-Governmental organizations working directly with local communities (among others to be identified, ADRAR and OXFAM Italia).	Community mobilization, local capacity building, sharing lessons learnt. A vast number of NGOs providing agricultural/pastoral extension services are present in the pilot sites.	Local NGOs will be part of the PSC as well as, the RPMCs. They will have a key role in implementing and monitoring activities at pilot site level. They will be engaged through LOAs.
Small-scale farm households in pilot sites.	Main beneficiaries and key partners. Most of them are farmer-herders and belong to several ethnic groups subdivided in several clans. They are generally dependant on integrated crop-livestock systems. Across the Oasis systems, Women's role in breeding and farming is significant. Women are of key importance as they are the ones who are generally responsible for the small herds: collecting fodder, taking care of the animals. And they are the ones taking care of the small truck farming and fruit harvests (i.e gathering dates). Women are also active in handicraft activities (mats made of palm, sewing).	Direct beneficiaries of the project. Representatives of producers organizations will be part of the PSC and will have an active role in decision-making processes within the RPMCs. Women cooperatives will be targeted and representatives from women cooperatives will be part of the RPMC.
Traditional customary rights associations (Jmaa)	Local planning and community mobilization. They control the maintenance of the irrigation system and the repartition of the water rights. They are custodians of valuable cultural practices and traditional knowledge systems.	Will be part of the RPMCs, and will be actively involved in Component 2 activities.
Economic Interest Groups (GIE) of small scale producers.	Constituted by two or more legal entities for a determined or undetermined period of time. The uniqueness of GIEs is that they bring about cooperation between public and private agents. Their objective is to facilitate or develop the economic activity of its members without profiting except on an ancillary basis.	Representatives of GIEs will be part of the PSC as well as the RPMCs.

1.1.4 Links to national development goals, strategies, plans, policy and legislation, GEF and FAO's Strategic Objectives

The proposed project is fully aligned with a wide range of progressive national development priorities, strategies and plans of the Government of Morocco. In 2009, Morocco elaborated the fourth national report showing that the country's development depends, in large part, on its ability to better manage all its resources and natural areas. However, the challenge is not only to reconcile between "development" and "environmental protection", but also to achieve a balanced human development in stringent environmental conditions in semi-arid provinces.

As a signatory Party of the Convention on Biological Diversity (CBD) since 1992 (ratified in 1995), Morocco developed the country's National Biodiversity Strategy and Action Plan (NBSAP) in 2004. In line with Morocco's priority areas, the project emphasizes the conservation and sustainable use of biodiversity through holistic approaches and multi-stakeholder participatory processes (sensitisation-programmes) that engage the oases local communities (women groups, community based organizations) as well as private and public sectors (component 1, 2 and 3 of the proposed project). In this context, the project is perfectly aligned with the Nagoya Protocol underlining and recognizing the importance of conserving genetic diversity to put in place effective strategies to prevent further losses of genetic diversity and therefore increase the likelihood of long term persistence.

Furthermore, the project is consistent with the National Initiative for Human Development (INDH), a World Bank funded project, which was launched in 2005 to alleviate poverty and exclusion. The INDH lead to Morocco's agricultural strategy, the "Plan Maroc Vert", which was adopted in 2008. The project will mainly contribute to Pillar II of the Plan ″support to small scale farming in less favorable rural areas (mountains, oases, semi-arid land) to enhance production and improve and maintain farm income and the fight against poverty″ and its 6th component: ″sustain Moroccan agricultural development″. One of the main challenges the Plan is addressing is the utilization of water resources for agriculture. In order to cope with drastic water scarcity, over exploitation of ground water and increased competition among users, the Plan is aiming at a reorientation of the water management policy.

In this context, the second component of the proposed project is coherent with the existing agricultural strategy. The Moroccan Government places significant importance on integrated rural development, income generating activities from agro-ecosystem services and conservation of natural resources as it ratified the UN Convention to Combat Desertification (UNCCD) and adopted, in 2001, the National Action Plan for Combating Desertification (NAPCD). The main principle of the NAPCD is that it recognizes the eminent role of the local population and entities have to play in reversing the detrimental trend of land degradation and desertification. The second and third component of the proposed project are harmonized with the conservation of natural resources component and the capacity building of local actors component of the NAPCD.

The project will contribute to the National Strategy for the Protection of the Environment and Sustainable Development's goal of reducing the environmental degradation to the 1992 levels by 2020. It is consistent with the strategy's environmental priority of ″Protection and conservation of soils and coastlines″, and more specifically with its quality objectives of: a) conservation and sustainable use of biodiversity and natural resources and b) conservation and rehabilitation of rangelands, the improvement of anti-erosive soils. Moreover, the proposed project is also in line with the two main areas under the sustainable management of soil

resources, sustainable water management and, sustainable management of natural environment under the National Action Plan for the Environment (NEAP).

The project is fully consistent with Moroccan development Charte-communale, launched to enhance and modernize the legal structure to manage the local governance and contribute to the optimization of its economic potential including agricultural, industrial, handicraft, tourism and services. Through this Convention and through the local development plans, the proposed project will develop a real participatory approach which takes into account the needs of populations but also the objectives of the elected.

Furthermore, the project is in line with a number of national and local policies, plans and initiatives that have been initiated to address the environmental problems like deforestation, erosion and flooding, particularly in promoting integrated and participatory approaches such as the National Strategy for Sustainable management of Oases.

The proposed GEF project is finally in harmony with the **United Nations Development Assistance Framework (UNDAF)** targeting poverty reduction, decentralization to local level to allow development actions to be adapted to specific problems, partnership approaches to program development and execution using participatory mechanisms together with the beneficiaries. One of the main outcomes of the environmental component of the UNDAF will be the implementation of the principles of the Charte nationale de l'environnement et du développement durable (National Charter for Environment and Sustainable Development), which has been adopted in 2011.

The project is in line with the Country Programming Framework jointly elaborated between FAO and the Government of Morocco, in particular with Priority Area N. 1 "Development for all, without exclusion of vulnerable groups and women in agriculture and fishery as a driver of economic and social development" and Priority Area N. 2 Sustainable management of natural resources and improving livelihoods of rural people, especially more vulnerable groups, in a context of climate change".

The project is aligned with FAO Strategic Objective 2 (SO2: *Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner*), Organizational Outcome 1 (OO1: *Producers and natural resource managers adopt practices that increase and improve agricultural sector production in a sustainable manner*).

SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS

2.1 PROJECT STRATEGY

To achieve its objectives, the project will adopt a holistic approach focusing on sustainable management of land and water resources for biodiversity conservation and diversified agricultural production. The project will hence address land degradation and biodiversity loss in oasis systems by focusing on three main intervention areas.
It will work in creating an enabling environment to promote globally significant agricultural biodiversity by:

(i) Targeting national and local regulatory frameworks for the development of the seed sector;
(ii) Building local and institutional capacity on in-situ conservation of traditional varieties and participatory plant breeding techniques; and
(iii) Supporting development of local seed growers associations and networks.

The project aims at improving the provision of agro-ecosystem services in oasis systems, such as water and climate regulation and land productivity, by promoting the sustainable management of land and water resources, including good agricultural practices to improve soil fertility (i.e. crop rotation, organic farming, composting), integrated livestock management with crop production, protecting fields and irrigation systems against flooding and building local institutional capacity for the maintenance of traditional irrigation systems.

Furthermore, support will be provided for the establishment of a biodiversity-friendly market mechanism aimed at enhancing the income of local communities and fostering investment and partnerships for oases development. As a cross-cutting activity, awareness will be raised on the importance of oases agricultural biodiversity and traditional practices to ensure the long-term engagement and commitment of local communities, institutions and governmental departments. Overall, the project's strategy lies on the concept of adapting agricultural practices based on the communities' culture, traditional knowledge and needs, for the integration of agro-biodiversity in the local economy as an engine of local development.

The project will engage government officials, agricultural producers, communities and local authorities in five selected oasis systems, namely: 1) Assa, 2), Akka, 3) Ait Mansour, 4) Imilchil-Amellago and 5) Figuig (see 7 and 8 for detailed information) . The approximate cultivated surface and population per site are detailed in Table 2. The area of intervention includes the perimeter of Utilisable Agricultural Area (UAA) within the five targeted Oasis systems.

Table 2. Project sites.

Site	Province	Cultivated Surface (ha)	Surface covered by the project (ha)	Population
Ait Mansour	Gulemim	140	140	1,500
Akka	Tata	6,626	80	7,365
Assa	Assa-Zag	6,718	40	17,977
Figuig	Figuig	1,125	557	12,577

Imilchil	Midelt-Errachidia	6,180	300	39,000
Total		21,116	1,117	78,419

Particular attention will be paid to the significant role played by women in the selected agricultural systems. In Morocco and in Oasis systems in particular, women's role in breeding and farming is significant. They are the ones who are generally responsible for the small herds: collecting fodder, taking care of the animals. They are the ones taking care of the small truck farming and fruit harvests (i.e gathering dates). Women from the poorest families are authorized to cut herbs or collect fodder from farmers' plots. This way, they can feed their animals and participate in maintaining the plots. Women are also active in handicraft activities (mats made of palm, sewing). And of course, they are responsible for all domestic work. The project wishes to improve women's socio-economic empowerment by targeting women cooperatives and groups.

2.2 PROJECT OBJECTIVES

Global Environmental Objective:
To contribute to arresting and reversing current global trends in land degradation through the promotion of sustainable land and water management practices and conservation of biodiversity in oasis systems in Morocco.

Project Development Objective:
Enhance food production and improve the livelihoods of local communities by supporting improved soil health and fertility and promoting sustainable agricultural practices in five oasis ecosystems: Ait Monsur, Akka, Assa, Figuig and Imilichil.

Specific Project Objective:
Enhance the conservation and sustainable management of five oasis systems-including their revival and the support of the role these systems play in household food security and in the maintenance of agricultural biodiversity, as well as their contribution to natural, landscape and cultural heritage and indigenous knowledge systems.

2.3 EXPECTED PROJECT OUTCOMES

In line with the three core components, the three expected Project Outcomes are as follows:

Outcome 1: The enabling environment to support the conservation of agro biodiversity has been enhanced through targeting regulatory frameworks, local institutional capacity building and collection and storage of data.

Indicators
Score 4. A seed regulatory framework is formally adopted by the Government.
[LD PMAT LD1. i)].

Baseline
Agricultural framework enhancement: Score 1. No seed policy/regulation framework in place.
[LD PMAT LD1. i)].

Outcome 2: Agricultural production is enhanced and allows alleviation of land degradation in the oasis systems.

Indicators
Measures to reduce degradation, conserve and sustainably use of 1,117ha of land (LD3. ii) lead to improvement of soil fertility, resilience and an increase of productivity by 15% in 640 ha (certified land). (LD1. ii.).

Baseline
1,117 ha of land degradation within the project boundary (LD PMAT I. 3.a).

Outcome 3: Biodiversity conservation and sustainable use have been integrated into alternative income-generating mechanisms, with the participation of local communities living in the oases landscapes.

Indicators
5 specifications submitted for application for the labelling of local products, including dates, cereals, apples and wool;
640 Ha in Oases-Ecosystems under certification/labelling scheme;
At least 500 quintals of local seed varieties are conserved involving 75 farmers.

Baseline
Farmers are involved in organic farming practices however their products are not labelled organic.
Farmers are not involved in seed conservation activities.

2.4 PROJECT COMPONENTS AND OUTPUTS

Project overview
To achieve the objectives and expected outcomes indicated above, the project has been structured into three main interlinked and mutually reinforcing components with their respective outputs as described below.

Component 1: Creating the enabling environment to maintain the flow of agro-ecosystems services in Oases systems, sustaining local communities' livelihoods

This component will enhance the capacity of government and local institutions in their efforts to promote oasis agricultural biodiversity conservation and strengthen local seed supply and distribution systems. An **inventory** identifying traditional seed varieties will be compiled and a **mapping** exercise to localize seed stock growers will be conducted. Based on the inventory and mapping exercise a **regulatory framework** for the development of the local seed sector will be developed based on multi-stakeholder consultations with government officials, local authorities and local producers. To strengthen information management and exchange of seeds amongst local producers, **local seed growers' organizations** will be established as well as **seed growers' networks**.

Component 1 will be complemented with a total co-financing of USD 1,425,000 distributed as follows: USD 100,000 from FAO contribution, USD 425,000 (in-cash) from the *Improvement of Agricultural Production Initiative* from ANDZOA, USD 125,000 (in-kind services) from the *Agricultural and Environmental Research Program* from INRA, USD 350,000 (in-cash) from the Development of the Southern Oases Program of the Agency for the promotion and the Economic and Social Development of the South Provinces of the Kingdom, and around USD 400,000 (in-cash), from the *Pillar II of the Green Morocco Plan* supported by the national agency, ADA.

Output 1.1: Databases and catalogues on local seed varieties including plant genetic resources and pollinators are developed.

Baseline: A census on the number and type of local seed varieties available and currently in use by agricultural producers in the project target zones does not currently exist. Farmers have limited knowledge on harvesting, stocking and propagation techniques of cultivars and landraces.

The proposed GEF project will support the development of databases and catalogues that collect, categorize and make available for use, information on landraces, traditional cultivars and plant genetic resources.

Main activities under this output will include:

- Development of questionnaires and surveys for collecting existing information on local seed varieties and plant genetic resources ;
- Seeds and seedlings from local landraces are identified and a mapping exercise to locate seed growers is conducted in the 5 pilot sites ;
- Tracking and monitoring of seed exchange and seed flow in the targeted oasis systems;
- Multi-stakeholder workshops with seed growers, extension agents, relevant local authorities; and partner institutions to discuss findings and assess outreach strategies to neighboring communities ;
- Development of practical guide books/catalogues on local seeds and seedlings varieties, as well as on seed breeding and stocking techniques for biodiversity conservation to be distributed among seed grower's cooperatives and networks.

Output 1.2: A regulatory framework for the development of local seed varieties is established and the seed sector is strengthened.

Baseline:
The local seed sector is currently not regulated. In most of the oasis systems, the seed supply system is informal and farmers produce, disseminate, and access seeds directly from their own harvest.

The proposed project will assist government authorities in developing a seed regulatory framework for variety choice selection, testing, introduction, multiplication, dissemination and storage of local seed varieties especially issued from the participatory plant breeding (output 3.5). The regulatory framework will be developed through a participatory process, involving all stakeholders and will ensure that varietal identity and purity are maintained

throughout the various generations of seed multiplication as well as, that quality control measures are taken at various stages of the operation.

Activities will include:

- Multi-stakeholder workshops (at least 2) to draft a regulatory framework for local seed varieties with seed growers (men and women), local authorities and government officials.
- Validation workshop of the regulatory framework with key stakeholders.

Output 1.3: Seed growers' cooperatives and seed growers' networks are established.

Baseline: For a minority of farmers who benefit from multiple cultivated surfaces, long term stocking of seeds is difficult in the absence of a supportive structure for seed stockpiling.

With project support, seed grower's cooperatives and networks will be established to encourage farmer's participation in collective management of the local seed supply.
The establishment of a network of seed growers will facilitate the exchange of seeds as well as knowledge on harvesting and storage techniques. 15 training sessions, targeting 75 seed growers, will be organized in each project site, on how to increase production and yields and improve the availability of seeds and seedlings.

Farmers will receive training on techniques for participatory seed selection, to improve local varieties and maintain a broad genetic base for in situ conservation.

Activities will include:

- Production of training material on participatory plant breeding and in-situ conservation in five pilot sites.
- Five seed growers cooperative (50% women) are formed, one in each pilot site.
- Five seed growers networks (50% women) are created (one in each project site) to promote and organise the preservation, free distribution and exchange of open-pollinated seeds.

Component 2: Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology.

Under this component the project will focus on reducing the degradation of the natural resources, through the implementation of locally adapted sustainable land and water management practices in the targeted Oases systems, with an aggregated area of 1,117ha. The objective of this component is to revitalize oasis systems restoring soil fertility and water retention capacity towards improved production of agro-bio diverse products. Interventions will focus on the improvement and rehabilitation of crop systems, control of water and soil salinity, protection and management of floodwaters and protection against silting.

The national initiatives complementing component 2 include: *Improvement of Agricultural Production Initiative* (ANDZOA) with USD 3,400,000 (in-cash), *Agricultural and Environmental Research Programme* (INRA), with USD 125,000 (in-kind services), and the

FAO contribution of approximately USD 75,000. The total co-financing for Component 2 is USD 3,600,000

Output 2.1.1: Sustainable land and water management practices targeting the reversion of land degradation trends implemented in five selected pilot sites in Oases systems.

Baseline: Great efforts are being made by the MAPM and its agencies to support sustainable agricultural practices in fragile oasis systems through a multitude of programs / projects. However, interventions tend to lack an integrated approach targeting isolated and specific agricultural systems without taking into account the greater agro ecological context.

Within the framework of agro-ecology, the project will support the development of agro-diverse productive systems whose products that will then be labelled under component 3. Some of the sustainable land and water management practices to be implemented by the project include the rehabilitation of palm groves, organic farming, planting of water current banks, construction of protection walls against floods, biological stabilization via reforestation and strengthening institutional capacities for the maintenance of traditional water management systems (Khettaras), among others.

Activities will include:

- Supporting local agents in pruning and cleaning palm groves to avoid fire hazards and make space for production, and pollination to ensure a high quality of dates, in Ait Mansour, Assa, Figuig and Akka;
- Supporting farmers in understanding the advantages of crop rotation of leguminous vegetables such as lentils, chickpeas, peas and beans;
- Training farmers on use of organic fertilisers (compost from palm tree waste, manure), pollination and crop management;
- Installation and maintenance of drip irrigation systems in three pilot date palm orchards in Ait Mansour, Assa and Figuig ;
- Training farmers on phyto-technical management techniques for palm dates and crops, including pollination in Ait Mansour, Figuig and Assa;
- Training on integrated livestock management with crop production including fencing livestock away from stream banks for improving water quality in pastured stream corridors;
- Training farmers on good practices for management and organic production of palm dates in Figuig; and Aït Mansour
- Direct (zero tillage) seeding of small grain cereals using animal traction in two demonstrative plots (0.25ha each) one in Imilchil the other in Ammellagou.

Output 2.1.2: Farmers are coached on flood control techniques and on measures against land degradation/desertification in the five pilot locations.

This output will promote the maintenance of the Oases ecosystems' services and enhance the community's institutional arrangement. Capacity building will be conducted in the areas of rehabilitation and development of dykes, water diversion and khetarras, and soil fertility.

Baseline: In most project sites, farm fields are severely damaged due to sand deposition caused by floods. Efforts to improve and repair damaged infrastructure are limited and tend to

concentrate on construction of large scale infrastructure not paying enough attention to rehabilitation of small infrastructure at village level and on maintenance support.

With project support, farmers will be trained on sustainable flood control techniques and will be involved in the construction, rehabilitation and maintenance of small and damaged infrastructure.

Activities will include:

- Rehabilitation and construction of gabionades and reduction of the effects of floods based on detailed hydrological studies in Akka, Figuig et Imilchil-Amellago;
- Gully correction via reforestation in Imilchil- Amellago and training on gully vegetation techniques for stream control and rehabilitation (correction) of gullies in Imilchil;
- Planting of poplars for stream bank control in Imilchil ;
- Training of agents on the ″Palmivelle system″ on re-vegetating sandy areas in Akka and Figuig and coaching on preventive measures against salinity formation.

Output 2.1.3: Local producers are coached on conservation and water use efficiency practices and on hydro-agricultural development measures based on traditional irrigation systems.

This output will focus on revitalizing and adapting traditional knowledge practices of sustainable water management, placing emphasis on collective action.

Baseline: In all project sites, traditional water collection and irrigation systems are highly deteriorated. Insufficient water (from the dam) and non-sustainable methods of groundwater use (overuse of diesel pumps) are resulting in a dramatic lowering of the water table underlying the oasis systems. Although the government is supporting initiatives to rehabilitate damaged traditional infrastructure, limited resources are being invested in activities supporting community based maintenance and collective management of water systems.

With project support, local producers will receive capacity building on the collective management of traditional water harvesting systems and will take active participation in maintenance and rehabilitation activities.

Activities will include:

- Training on rehabilitation and management of Khettaras and waterways (seguias) in Imilchil- Amellago, Figuig, Ait Mansour, Assa and Akka ;
- Rehabilitation of water diversion structures in Imilchil ;
- Training on economical use of irrigation water and hydro-agricultural adjustments in Imilchil.

Component 3: Mainstreaming of the biodiversity conservation and sustainable use into the local communities' strategies for economy diversification in Oases landscapes.

This component will capitalize on the PMV and support actions that will redirect the issue of biodiversity, soil and water to the centre of producer's interests. The project will support three kinds of interventions: activities aiming to strengthen local capacities in implementing

existing quality control labels; activities aiming to develop new Geographical indication (GI) and Organic labels in order to strengthen the labeling momentum initiated within the PMV context; as well as activities aiming to transform and valuate small-scale agro-biodiversity food production. Component 3 addresses the need to strengthen the capacity of local communities in integrating local products to the market, and the urgency of ensuring the integration of in-situ conservation in the new market access legislations for local products such as local seeds (organization, production standards, labeling, and distribution). With project support appropriate knowledge will be transferred to local authorities and producer organizations on sustainable harvesting and product marketing at national and international level.

Component 3 will be supported by the FAO contribution of USD 75,000, the *Improvement of Agricultural Production Initiative* (ANDZOA) with USD 175,000 (in-cash), *Agricultural and Environmental Research Program* (INRA), with approximately USD 125,000 (in-kind services), the Development of the Southern Oases Program with USD 325,000, and *Pillar II of the Morocco Green Plan* (ADA), with USD1,220,000 (in-cash). The total co-financing for Component 3 is USD 1,925,000

Output 3.1.1: Enhanced local capacity for implementing existing labelled local Oases products in the five pilot sites. The labelling criteria will include sustainable production standards in view of biodiversity conservation.

Baseline: A few local agricultural products enjoy quality labels linked to origin but implementing these labels has not become entrenched. As a result, the impact of labelling on the revenue of relevant sectors has not yet been felt by producers. This is the case for three local varieties of dates in Akka as well as honey in Assa, certified with GI labels since 2013 but that have never been implemented since then.

With project support, farmers involved in the production of labelled products, will receive training and mentoring on labelling processes, packaging, implementing chain of supply traceability methods, as well as marketing trainings to better prepare for creating and maintaining profitable market linkages at national and international level.

Activities will include:

- Training of local producers on creating cooperatives and forming ″Groups of Economic Interest″ (GEI) engaging the public and private sector;
- Creation of four cooperatives and three GEI groups;
- Training local actors in implementing traceability systems of labelled products and managing the chain of supply documentation;
- Training on label use, packaging and marketing strategies.

Output 3.1.2: Applications are submitted to the competent authorities for labelling of local Oases products, on the distinctive signs of origin and quality of the food and agricultural products (cereals and apples in Imilchil, Assianedates in Figuig and wool in Imilchil and Figuig).

A rigorous assessment of possible agricultural products to target with the activities of this project, based on ecological, economic and social criteria, was used to determine the kind of

labels, products and sites. Based on the assessment exercise, five products were selected for potential labelling.

Baseline: Valuable agro-biodiversity products with significant commercial valueare under estimated and are not being exploited.

With project support 5 specifications will be submitted for the application for the labelling of local products (dates, cereals, apple, and wool).

Activities will include:

- Development of a GI label for the Assiane date of Figuig (preparation of labelling requirements and request letters for government endorsement);
- Development of a GI label for cereals in Imilchil;
- Development of a AL label for cereals in Imilchil;
- Development of a AL label for apples in Imilchil;
- Development of a AL label for wool in Imilchil;
- Development of a AL label for wool in Figuig;
- Training of local producers (50% women) on GI and AL labelling requirements and standards and on sustainable production practices;
- Assistance for 100 producers of dates, 50 producers of cereals and 50 producers (50% women) of apples in order to set up a follow up and monitoring system ;
- Support from 3 GEI in the packing of local products and the use of the IGP logo and agricultural label.

Output 3.1.3: Agricultural products from local crop varieties are labelled organic.

Baseline: Traditional cropping systems based on local knowledge, low input crop management and traditional agricultural technology, are widely adopted in all of the project sites. Farmers are involved in organic farming practices however their produce is not labelled organic.

With project support, 640ha of agricultural productive land in the targeted oasis systems will be labelled organic. Local producers will be trained on organic labelling specificities and on the implementation of traceability systems and procedures, such as record-keeping, that improve their ability to track and orchestrate the movement of their products along the value chain.

Activities wil include:

- Organic certification of 640ha out of which 140ha in Ait Mansour,40ha in Assa, 80ha in Akka, 100ha in Figuig and 280ha in Imilchil;
- 100 date producers, 50 apple producers, 50 organic cereals producers and 100 organic wool producers (50% women), receive training on organic farming techniques, labelling requirements and label use;
- Local exchange/study tours involving a group of 60 participants (50% women) to organic farms in the region of Agadir and El Jadida;
- Training of 100 date producers, 50 cereal producers, 50 apple producers and 100 wool producers (50% women) , on the establishment of a traceability system of organic agricultural products.

Output 3.1.4: Valuation of local agrifood products such as dates and durum is enhanced.

Baseline: In all the project sites, valuation through agro-food transformation is poorly developed. Commercialization is essentially carried out through intermediaries and aggregation projects are inexistent.

With project support, local producers and especially women cooperatives will be trained on value adding techniques and on agricultural transformation processes.

Activities will include:

- Training a women cooperative in Imilchil on value adding techniques to improve agrifood production (Couscous and pasta);
- Training of 20 local producers on the transformation of date production (production of syrup and pasta)

Output 3.1.5: Product benchmarking of labelled agro-biodiversity products.

Baseline: Producers groups all over the country are lacking the resources and apparatus to check themselves whether their produce is saleable or not. Support to local producers by extension agents is limited to labelling related activities; local producers receive little or no training on value chain development, marketing strategies and on opportunities for the commercialization of labelled products.

With project support, local producers of certified products will be supported in accessing local and international markets and in identifying potential customers. This output will assist local producers in developing sales contracts.

Activities will include:

- Conducting a benchmarking exercise to assess market opportunities for each labelled product;
- Based on the benchmarking exercise, training of local producers in developing action plans that will improve the competitiveness of agro-biodiversity products ;
- Training local producers in developing sales contracts.

Output 3.1.6: Local producers are trained on seed conservation and participatory plant breeding techniques through demonstration plots.

Baseline: While labelling strategies and marketing services are being improved, the project will provide assistance in increasing seed availability and production. This output wishes to emphasize the need and urgency of integrating in-situ conservation in local and national market strategies and policies targeting local seeds (organization, production standards, labelling, and distribution).

With project support, local producers and seed growers will receive training on participatory plant breeding techniques. Participatory plant breeding with local cereals and leguminous vegetable varieties (beans, lentils and chickpeas) will be pilot tested in two demonstration

farm plots. This exercise will result in the participatory selection of landraces and cultivars for multiplication and distribution.

Activities will include:

- Five training sessions (one in each site) on participatory plant breeding methods for organic products (involving man and women seed growers);
- Preparation of guidelines on methodologies for seed conservation ;
- Collection of pollinators, landraces and cultivars and pilot harvesting of local varieties of cereals, pies, lentils and chickpeas in Imilchil and Akka ;
- Participatory seed evaluation and selection for distribution.

Component 4: Project monitoring and evaluation

The objective of Component 4 is to ensure a systematic results-based monitoring and evaluation of project progress. Thus achieving project outputs and outcome targets that are established in the Project Results Framework, as well as promoting the wider dissemination of project information, data and lessons learned for replication in other areas.

Component 4 will be supported by the FAO contribution of USD 100,000, the *Agricultural and Environmental Research Programme* (INRA), with USD125,000 (in-kind services), the *Development of the Southern Oases Programme* with around USD 325,000, and *Pillar II of the Green Morocco Plan* (ADA), with USD380,000 (in-cash). The total co-financing for Component 4 is USD 930,000.

Output 4.1: System for systematic collection of field-based data to monitor project outcome indicators made operational

The Project Coordinator will be responsible for preparing a Project Progress Report (PPR, six-monthly) in close cooperation with the PSC and the PMCU. The PPR includes the project results framework with project output and outcome indicators, baseline, and six-monthly target indicators, the risk matrix monitoring, and identification of potential risks and mitigation measures for unexpected risks reduction.

On an annual basis, the Lead Technical Officer (LTO) in FAO will prepare the Project Implementation Report (PIR). The PIR includes the project results framework with project output and outcome indicators, baseline and yearly target indicators, the monitoring of the risk matrix, and identification of potential risks and mitigation measures to reduce those unexpected risks. The LTO will be supported by the project coordinator and PMCU.

Output 4.1: Final evaluation conducted.

At the end of project implementation, a final project evaluation will be conducted by an international external consultant under the supervision of the FAO Independent Evaluation Office, and in consultation with the project team including the FAO-GEF Coordination Unit, the LTO, and other partners.

Output 4.3: Information dissemination.

Project-related best-practices and lessons-learned for enhanced adaptation to climate risk of the agricultural sector are disseminated via publications, project website and others.

A project website will be maintained and updated by Project staff during Project implementation in order to share experiences and lessons learned.

Over the course of the Project, at least five publications will be issued on best practices and lessons learned through the Project. All publications will be uploaded on the Project website, and will be distributed through printed and electronic copies to local partners and government staff.

2.5 GLOBAL ENVIRONMENTAL BENEFITS/ADAPTATION BENEFITS

The government of Morocco gives particular emphasis to conserving and promoting food products of agricultural biodiversity, particularly local produce with high nutritional value for sustainable diets. By supporting an improved soil health and fertility and promoting sustainable agricultural practices, the project will enhance food production and improve the livelihood of the local communities. Moreover, the project will improve the sustainability of highly valuabe oasis systems by supporting the conservation of biodiversity in the selected project sites, which are located in natural reserves. More specifically, the project will deliver the following GEBs: i) in situ conservation of selected crops/plants including staple foods such as local durum wheat, local vegetables, leguminous crops which are important for nutrition and food security; ii) improvement of soil health and fertility, enhancement of soil resilience to increase organic matter; iii) reduction of soil erosion in mountain ouadi valleys, iv) mainstreaming of conservation and sustainable use of biodiversity into regulatory frameworks, v) mainstreaming of biodiversity considerations into market mechanisms and increased investments in SLM (product labeling). The benefits will be verified by monitoring: i) the number of local varieties preserved and cultivated, the number of drafted and submitted applications for product labelling (incl. seeds); ii) the agricultural area covering 1,117ha benefitting from improved agricultural practices and labelled production standards, iii) agricultural area (1,117ha) protected against flooding ; and iv) the adoption of SLM and sustainable production intensification practices by at least 500 rural farmers in the 5 selected project sites.

This proposed project will also generate GEBs by contributing to Aichi Targets #1 and 2 by i) raising awareness on the value of biodiversity and the necessary steps to safeguard it and sustainably manage it, and ii) supporting the integration of biodiversity conservation and its value into national policies and strategies in Morocco, through policy recommendations and advocacy.

2.6 COST EFFECTIVENESS (alternative strategies and methodologies considered)

The proposed project is expected to be highly cost effective as it builds on ongoing national initiatives with similar objectives. It seeks to redirect investments in the adaption of good agricultural practices based on traditional knowledge systems hence, piggy backing on institutional structures that are already existent. Moreover, the project will introduce new practices proven to be cost-effective such as participatory plant breeding which could offer a rapid, cost effective strategy for developing farmer-preferred cultivars. Farmers' direct

involvement in setting breeding goals, in selecting early generation and segregating materials could greatly increase the efficiency of developing varieties that meet local needs. Participatory plant breeding methods will be applied in the project Oasis systems, to develop seed varieties suitable for sustainable harvesting and for product marketing. If this approach is successful in the project sites, then national dissemination of the knowledge gained, and the varieties produced, would encourage the adoption of these methods in other target sites.

Furthermore, will channel funds the project will directly include local authorities and NGOs that are already active in similar activities in the project intervention area. Hence there will be few start-up costs and few costs related to the mobilization of expertise from outside the region or country.

The Project also intends to minimize the use of international consultants where national expertise is available. This will reduce the travel costs and the costs of consultancy fees. Notwithstanding, where international expertise is unique or exceptionally credible, it will be utilized.

2.7 INNOVATIVENESS

The project will be innovative in the adoption of an holistic approach that simultaneously promotes oases agricultural biodiversity, sustainable management of land and water reources and oases agricultural transformation. Agricultural products deriving from local seed variaties and cultivars will be sustainably harvested through the adoption of SLM and water management practices based on local traditional knowledge, and linked to local and international markets through valuation and agricultural transformation. The innovation lies in the integration of agro-biodiversity in the local economy as an engine of local development and biodiversity conservation. Indeed, the project will be innovative in the establishment of a biodiversity-friendly market mechanism aimed at enhancing the income of local communities and fostering investment and partnerships for oases development.

Moreover, the project is innovative in its recognition that the stability and capacity of oasis systems to provide goods and services critically depend on rural communities having sustaining diverse and complex forms of social organization, culture, modes of production, labor allocation, technologies and practices. It therefore, promotes ingenous systems and technologies of land and water management that can be used to improve management of modern oasis agroecosystems.

SECTION 3 – FEASIBILITY (FUNDAMENTAL DIMENSIONS FOR HIGH QUALITY DELIVERY)

3.1 ENVIRONMENTAL IMPACT ASSESSMENT

Following FAO's Environmental Impact Assessment (EIA): *Guidelines for FAO Field Projects*[11], the proposed Project is classified under Category C[12], and therefore does not require a full scale EIA. The Environmental and Social Review Form[13] is attached in Appendix 9.

3.2 RISK MANAGEMENT

Project risks have been identified and analyzed during the full project preparation and mitigation measures have been incorporated into the project design (see sub-section 3.2.1 below). The Project Management Coordination Unit (PMCU, composed of MAPM and its agencies, INRA, FAO, and the Project Coordinator – see details in Section 4) will be responsible for the day-to-day management of these risks and the effective implementation of mitigation measures. A Monitoring and Evaluation (M&E) system will be designed in Project Year 1 (PY1) by a short-term M&E Specialist, under the general oversight of the PMCU (see Section 4). The M&E system will serve to monitor project outcomes and outputs indicators, project risks and mitigation measures. The PMCU will also be responsible for monitoring the effectiveness of mitigation measures and adjusting mitigation strategies as needed, and identify and manage any eventual new risks not foreseen during project development, in dialogue with other project partners.

The six-monthly Project Progress Report (PPR, see sub-section 4.5.3) is the main tool for project risk monitoring and management. These reports include a section on systematic follow-up of risks and mitigation actions identified in previous reporting periods. The PPRs also include a section for identification of eventual new risks or risks that still need attention, their rating and mitigation actions, as well as the responsibility for monitoring those actions,

[11] See http://www.fao.org/docrep/016/i2802e/i2802e.pdf

[12] Category C projects should have minimal or no potential negative environmental or social impacts, either individually or cumulatively. They should not be controversial in terms of the interests of key stakeholders. According to FAO's guidelines (see previous footnote), in these projects no further environmental and/or social analysis or assessment is required. This is an indicative list of projects under Category C, which is periodically updated by FAO based on experience: i) Natural resource assessments and monitoring; ii) Environmental and sustainable development analysis; iii) Monitoring and evaluation exercises; iv) Research and extension in agriculture, forestry and fisheries; v) Capacity development, communication and outreach programmes, including training; vi) Minor construction activities and maintenance of installations; vii) Institutional development, including norms and standards; viii) Support to the development of income-generating activities at household or Farmer-Based Organization (FBO) level (i.e. small-scale "cottage industries"); ix) Distribution of agricultural inputs to vulnerable or disaster-affected households (seeds, fertilizer, tools, small livestock) that are already known by the target groups and which are available locally; among others.

[13] Ranking under Category C should be certified by the FAO Lead Technical Officer (LTO).The FAO LTO has carefully filled-in the FAO Environmental and Social Review Form – see Appendix 9.

and the expected timeline. FAO will monitor the project risk management closely and follow up if needed by providing support for the adjustment and implementation of risk mitigation strategies. Reporting on risk monitoring and rating will also be part of the annual Project Implementation Review (PIR) prepared by FAO and submitted to the GEF Secretariat (see sub-section 4.5.3).

3.2.1 Risks and mitigation measures

Table 3: Risks and Risk Mitigation Measures

Risk	Rating	Risk Mitigation measures
Climate shocks risk: high-probability of occurrence of extreme weather events which may affect crop and livestock cycles and increase food/nutritional insecurity, as well as natural climate shocks which may cause contingencies and emergencies during project operations	M	The project will mitigate this risk by providing capacity building to local communities on flood control techniques and on measures against land degradation/ desertification. With project support, local communities will be engaged in the rehabilitation and construction of gabionades and will receive training on organic techniques for stream control and rehabilitation of ravines.
Institutional risk: Decrease in project ownership and support from governmental agencies	L	The government agencies (INRA, MAPM, DPAs, ORMVAT, ANDZOA, ADA, APDSEPS) have been fully involved in the project preparation and are expected to be fully involved in project implementation through the PMCU. FAO will provide technical assistance. The project design takes into consideration the need of achieving results in the short-term to show the importance of project objectives, results, and activities to local and national governmental agencies.
Institutional risk: Low involvement and participation of local institutions in micro-watershed coordination and monitoring mechanisms.	M	The Project will encourage local participation, empowerment and ownership by supporting multi-stakeholder processes for the development of regulatory frameworks and for the coordination of project activities. Site level operational committees will be put in place ensuring a bottom up approach.
Social risk: Lack of participation of beneficiaries	L	Awareness-raising workshops on the local negative impacts of land degradation and loss of biodiversity in oasis systems will be conducted involving institutions and local stakeholders. The local approach will stimulate local participation, since problems to be addressed are highly known and visible in local population's everyday life.

3.2.2 Fiduciary risk analysis and mitigation measures

Not required as this is not a NEX project.

SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 INSTITUTIONAL ARRANGEMENTS

a) *General institutional context and responsibilities*

The Project will be technically executed by the Government of Morocco represented by the Ministry of Agriculture and Marine Fisheries (MAPM) with its Regional and Provincial Directorates (DPATiznit, DPA Figuig, DRA Guelmin- Smara), its Regional Office for the agricultural development of the Tafilalet region (ORMVA/TF),and its agencies including: The Agency for Agricultural Development (ADA), the National Agency for the Development of Oasis and Arganier Areas (ANDZOA), The National Food Safety Authority (ONSSA), The Office for Agricultural Extension Services (ONCA), the Agency for the Promotion and Economic and Social Development of the Southern of the Kingdom (APDESPS) and the National Institute for Agricultural Research (INRA). In addition, local authorities, grass root NGOs, producer's organizations and national associations, as well as cooperatives and customary institutions located in the five targeted Oasis systems will participate in project implementation. FAO will be responsible for the financial and operational execution of the project in addition to being the GEF implementing agency providing supervision and technical advice services to the project (see figure 4.1 below).

INRA will be the lead government counterpart and the Project Executing Partner with technical responsibility for the Project. The Project Management Coordination Unit (PMCU) will be composed of the national focal points of INRA, MAPM, ANDZOA, APDESPS and ONCA, which will ensure coordination and collaboration with the Project Management Regional Committees (PMRCs) in each of the five project sites for project implementation. FAO will provide procurement and contracting services of GEF TF resources, as well as supervision and technical guidance for the overall implementation process. Project implementation will follow a participatory and multi-stakeholder approach, involving traditional customary institutions (Qsour), women cooperatives and local NGOs (Adrar in Imilchil).

INRA is the main agricultural research and research for development institution in Morocco. INRA has greatly contributed to the modernization of the agricultural sector and agro-systems, and to the improvement of the competitiveness of the country's agriculture. Moreover, INRA is a member of several regional networks and maintains bilateral cooperation with several countries. In order to be responsive to different agricultural environments, INRA has an extensive capacity for field experiments: 10 Regional Agricultural Research Centres (RARC) encompassing all existing agro-systems; 23 experimental stations; 30 research units in charge of planning and implementing research activities; 10 services of research for development to serve as interface between research and development. Over the years, INRA has accumulated vast experience in legume improvement, and in studying legumes in cereal based cropping systems, crop rotations, mixed cropping, biological nitrogen fixation and diversifying agriculture for the benefit of farmers.

INRA and FAO will be responsible for providing technical assistance, supervision and monitoring of Project Component 1 (all Outputs), partly Component 2 (Output 2.1) and

Component 3 (Output 3.6). In addition, the Project Coordinator (financed by GEF resources) will be a Biodiversity expert, and will support the PMCU to achieve and monitor the aforementioned Project Outputs.
ANDZOA is an agency of the MAPM established in 2010 during the restructuring of the Department of Agriculture to support the implementation of the Morocco Green Plan. It is mainly responsible for promoting the management and sustainable development of oasis and Argan ecosystems. ANDZOA and FAO will be responsible for providing technical assistance, supervision and monitoring of Component 2 (all outputs with the exception of output 2.1).

ADA is mainly responsible for promoting the domestic supply of agricultural investments and organizing communication and information actions for investors and various stakeholders in the agricultural sector. It is an Agency of the MAPM, established to support the implementation of the Green Plan Morocco. It plays a key role in coordinating agricultural policy. ADA and FAO will mainly be responsible for providing technical assistance, supervision and monitoring of Component 3 Outputs and activities related to agricultural transformation and valuation of agricultural products.

ONSSA, under the direct guidance of the MAPM, has the mandate to ensure increased state policy integration and efficiency in terms of the quality control of animal and plant products.
It is in charge of regulating, implementing, and controlling conformity of products with the local regulations, including standards, labelling, and packaging. ONSSA will mainly be responsible for providing technical assistance, supervision and monitoring of Component 1 and Component 3 project Outputs.

ONCA is an agency of the MAPM, responsible for improving the governance and efficiency of agricultural extension services. ONCA and FAO will be responsible for providing technical assistance, supervision and monitoring of all project activities related to capacity building.

In addition a team of **agronomists**, a **sustainable land and watershed management specialist** a **value chain development specialist** and a **marketing specialist** (financed by GEF resources) will provide further technical support for the implementation of the project outputs, in close collaboration with the PMCU.

b) Coordination with other ongoing and planned related activities

The project will seek to coordinate with the projects mentioned below. The coordination will focus on exchanging lessons learned and sharing technical expertise and will be established through partnership agreements and joint work plans.

- *Social and Integrated Agriculture in Morocco* (**ASIMA**). This is a World Bank- GEF Project that will be implemented over the period 2013-2017. The ASIMA project will explore horizontal integration among agri-food chains by providing incentives to small farmers to produce animal feed using by-products of crops. The project will also support the vertical integration from production to commercialization of agri-food chains. The common aim will be to strengthen land and biodiversity conservation measure by farmers while making optimal use of the limited natural resources available. ASIMA is being implemented in the same project areas namely, the regions of Sous Massa and Haouz.

- *A circular economy approach to agro biodiversity conservation in the Souss-Massa Drâa Region of Morocco*. This is a UNDP- GEFproject that will be implemented over the period 2014-2019. This project seeks to ensure the promotion of an agricultural sector resilient to the impact of climate change and a low carbon economy. Activities include multiple aspects from the reutilisation of non-conventional water resources to the adoption of good agricultural practices that can resist climate change. The proposed project will establish a partnership agreement with the executing agency, UNDP, to share experiences in relation to the labelling of local production and mainstreaming biodiversity conservation in the market mechanisms.

- *Participatory Control of Desertification and Poverty Reduction in the Arid and Semi-Arid High Plateau Ecosystems of Eastern Morocco* (**MENARID**). This project falls under the wider umbrella of the GEF's MENARID Programme which aims at combating desertification and protecting ecosystems functions. The proposed project will complement the activities under MENARID through knowledge sharing and regular exchanges of experiences related to strengthening the enabling environment for SLM as a way of reducing desertification and land degradation.

- *Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems* (**GIAHS**). This is a FAO-GEF project with global coverage. The proposed project will benefit from lessons learned from the GIAHS project in Oases systems in Tunisia and Algeria. In the specific case of Morocco, FAO is engaging in awareness campaigns to promote the recognition of agricultural heritage systems across the country. This includes the project pilot sites.

- *Land Degradation Assessment and Monitoring for Sustainable Land Management Decision Support and Scaling up of Best Practices* (**LADA Phase II**). LADA is a FAO-GEF project with global coverage that aims at improving the capacities of the member countries of the UNCCD to assess and report on the status of their land resources and to adopt climate change resilient Sustainable Land Management (SLM) measures. The proposed project will seek coordination with LADA for sharing of best practices.

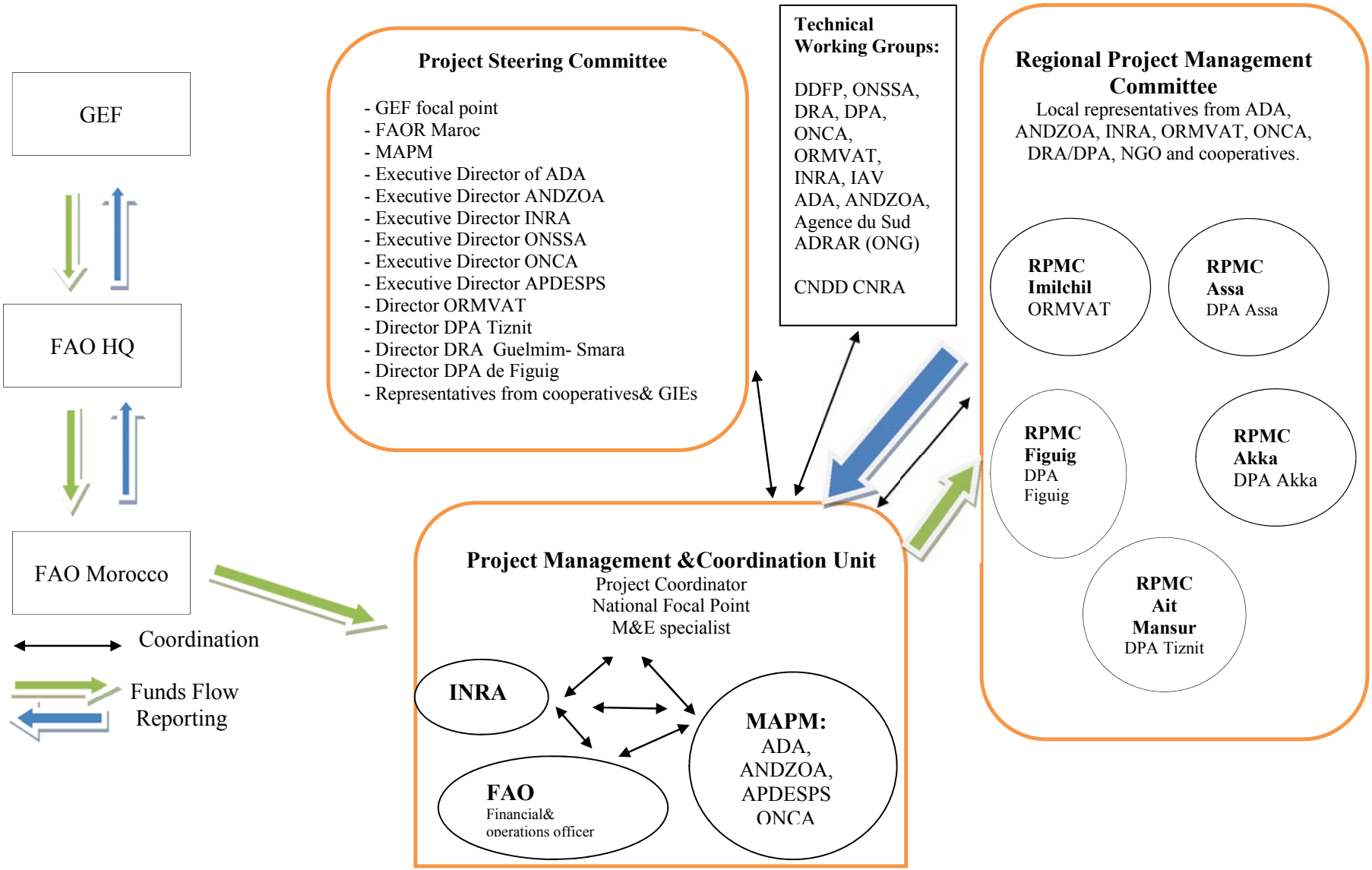
- *Integrated water resources management in Morocco*. This is a GIZ Project that will be implemented over the period 2008- 2018. The project concentrate on four main components: improving the monitoring and control systems in water management planning; protecting groundwater resources ; promoting the reuse of wastewater ; reinforcing the participation of the various actors to enhance water resources planning and management. The proposed project will seek coordination with the GIZ initiative for the implementation of Component 2 activities.

4.2 IMPLEMENTATION ARRANGEMENTS

The Food and Agriculture Organization of the United Nations (FAO) will be the GEF Agency responsible for supervision and provision of technical guidance during project implementation. In addition, FAO will act as financial and operational Executing Agency, and will delivery procurement and contracting services to the project using FAO rules and procedures, as well as financial services to manage GEF resources. The project will be technically executed by INRA, in coordination with MAPM and its agencies: ADA, ANDZOA, APDESPS and ONCA.

A Project Steering Committee (PSC) will be set up to provide oversight of and coordinate the planning of project implementation (see below). Stakeholders committees and technical working groups (TWGs) will be established as needed under the different components. The Project will be managed through the institutional structure depicted in Figure 4.1 below.

Figure 4.1. ***Institutional arrangements for the implementation of the project: Conservation of Biodiversity and Mitigation of Land Degradation Through adaptive Management of Agricultural Heritage Systems.***



The roles and responsibilities of the main institutional units involved in project implementation are the following:

National level

The **Ministry of Energy Mining, Water & Environment**is the GEF Operational Focal point of Morocco responsible for coordinating the programming of GEF resources and overseeing the Morocco GEF portfolio with the GEF Agencies.

INRA will be the **main Project Executing Partner** directly responsible for technical implementation of project activities, as well as day-to-day under the direct supervision of the **MAPM.** INRA will use its monitoring system to measure Project Outcome 1 and Outcome 2 activities related to: i) the number of local varieties preserved and cultivated and ii) the agricultural area benefitting from improved agricultural practices and labelled production standards. INRA will provide in-kind co-financing as office space, equipment, utilities, and will finance events logistics and local travels needed to carry out the project workshops and capacity-building activities. INRA will also make available a senior chief advisor who will provide technical assistance to the project coordinator and PMCU.

The Minister of Agriculture and Fisheries (**MAPM**) or his representative will chair the Project Steering Committee (PSC) and annual project review and planning meetings. FAO will sign a Government Cooperation Project (GCP) Agreement with the MAPM. The GCP Agreement will outline the roles and responsibilities of FAO and MAPM and legal aspects of collaboration such as responsibilities for facilitating inputs, copyrights among others. The MAPM will provide cash co-financing for the implementation of project activities across the four project components based on the institutional set up of its flagship program: the Plan Maroc Vert. MAPM will provide cash co-financing through the Plan Maroc Vert (PMV) institutional structure and its agencies: **ADA**, **ANDZOA and APDESPS**.

INRA, ADA, ANDZOA, APDESPS, ONCA, and **FAO** will be integrated through a **Project Management Coordination Unit (PMCU),** which will be responsible for day-to-day project operations. The role of the PMCU will be, in close consultation with the PSC and TWG members (see below), to ensure the coordination and execution of the Project through the timely and efficient implementation of annual work plans. The PMCU will act as secretariat to the PSC. It will coordinate work and follow closely the implementation of project activities, handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of national and local inter-institutional collaboration, monitor project progress and ensure the timely delivery of inputs and outputs. It will organize workshops and annual meetings for the Project for monitoring project progress and develop work plans with detailed budget for the next year to be approved by the PSC. It will be responsible for: i) implementing the Project M&E plan, supported by a short-term M&E specialist and the Project Coordinator; ii) managing its monitoring system and communication program; and iii) elaborating the six-monthly Project Progress reports and giving inputs to the annual Project Implementation Review (PIR) and the midterm and final evaluations, supported by the Project Coordinator. Project Progress Reports on implemented activities and progress in achieving project outputs and outcomes for the previous year will be submitted together with the Annual Work Plan and detailed Budget (AWP/B) to the PSC and FAO via the Project Coordinator.

The PMCU will have a **full-time Project Coordinator**[14] (financed by GEFTF funds), responsible for the overall coordination and supervision of the project in close coordination with the **National Focal Point** from the MAPM, as well as, ADA, ANDZOA, APDESPS and ONCA staff (financed by the Government co-financing). The Project Coordinator will be in charge of project daily management and technical supervision including: i) preparing AWP/B and allocating tasks to Project Executing Partners; ii) providing technical supervision and guidance to the Project Executing Partners in implementing project activities; iii) conducting regular field supervision visits and provide on-site guidance to technical staff from Project Executing Partners; iv) day-to-day coordination and communication with Project Executing Partners staff in charge of the GEF project; and v) preparing the Project Progress Reports.

The PMCU will incorporate a **short-term Monitoring and Evaluation Specialist**[15](financed by GEFTF funds) in charge of designing the Project M&E system. The M&E system will be used by the Project Coordinator when complying M&E tasks, as detailed: vi) conducting regularly field M&E visits to project sites, which information will be included into the six-monthly Project Progress Reports; vii) monitoring progress in achieving project outputs and outcome indicators; and viii) proposing eventual shifts in project implementation strategies if the project is not performing as planned.

The **National Budget and Operations Officer (part-time)** will be responsible for the day-to-day financial management and operation of the project including raising contracts and procure other needed inputs in accordance with the approved budget and annual work plans. The Budget and Operations Officer will work in close consultation with the Project Coordinator, BH, LTOs and executing partners, particularly with the FAO Representation in Morocco (FAOMA), and will take the operational responsibility for timely delivery of needed inputs to produce project outputs[16].

Regional/Project Site level

At the regional level, five Regional Project Management Committees (RPMC) will be established to coordinate activities at project site level. The RCCs will be headed by the Regional and Provincial Directorates of Agriculture (DRA/DPA) and will comprise local authorities, including representatives from the decentralized offices of ADA, ANDZOA, INRA, ORMVAT, ONCA, DRA/DPA, as well as a representative of APDESPS and a community based organizations, NGO's and producers organizations. Each RPMC will meet twice a month for planning and monitoring of project activities.

GEF Agency

FAO will be the GEF Agency of the Project as well as the financial and operational executing agency. As the financial and operational executing agency FAO will provide procurement and contracting services and financial management services of GEF resources. As the GEF Agency FAO will supervise and provide technical guidance for the overall implementation process. Administration of the GEF grants will be in compliance with the rules and procedures of FAO, and in accordance with the agreement between FAO and the GEF Trustee. As the GEF agency for the project, FAO will:

[14] Detailed TORs in Appendix 6
[15] Detailed TORs in Appendix 6
[16] Detailed TORs in Appendix 6

- Administrate funds from GEF in accordance with the rules and procedures of FAO;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all project activities and outputs;
- Carry out at least one supervision mission per year; and
- Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

Based on a request from the Government of Morocco, FAO will also be the financial and operational executer of the GEF resources including financial management, procurement of goods and contracting of services following FAO rules and procedures. As the financial executer, FAO will provide six-monthly financial reports including a statement of project expenditures to MAPM, INRA and other partners of the PMCU and the PSC. In accordance with the present project document, progress in the financial execution of the project, and the Annual Work Plan and Budget approved by the PSC, FAO will prepare budget revisions to maintain the budget current in the financial management system of FAO. The budget revisions will be provided to INRA, other partners of the PMCU, and the PSC to facilitate project planning and execution. FAO will, in collaboration with INRA and the other partners of the PMCU, participate in the planning and execution of contracting and procurement processes.

The FAO Representative in Morocco will be **the Budget Holder (BH)** and responsible for the management of the GEF resources. As a first step in project start-up, the FAO Representation in Morocco will establish an interdisciplinary Project Task Force within FAO to guide the implementation of the project. In consultation with the LTO (see below) the FAO Representative will be responsible for timely operational, administrative and financial management of the GEF project resources, including in particular: (1) contracting and procurement processes based on the request from the PMCU and in accordance with the approved Annual Work Plan and Budget; (2) process the payments corresponding to delivery of goods, services and technical products based on the prior clearance of the same by INRA and the other partners of the PMCU as applicable in each case; (3) provide six-monthly financial reports including a statement of project expenditures to INRA/PMCU and the PSC; and (4) at least one time per year or more frequent if required, prepare Budget Revisions for submission to TCI/GEF Coordination Unit for approval. The FAO Representation in Morocco will work in close consultation with INRA, MAPM, ANDZOA, ADA, APDESPS, ONCA, the FAO LTU (see below) and LTO, and the FAO GEF Coordination Unit for the management of GEF resources.

The FAO Representative will in consultation with the LTU, LTO and the FAO-GEF Coordination Unit give no-objection to AWP/B submitted by the Project Management Coordination Unit (PMCU) as well as to the Project Progress reports which should be approved by the LTO before they are submitted to the FAO-GEF Coordination Unit for final approval and upload in FPMIS.

The FAO Lead Technical Unit(s): The Land and Water Division (NRL) of the Natural Resources Department of FAO will be the Lead Technical Unit (LTU) for this project and will provide overall technical guidance to its implementation. The Subregional Office for North Africa (SNE) will be the Lead Technical Officer (LTO). The LTO will have specific

expertise in land and water management practices in degraded agricultural systems and be responsible for direct technical supervision of the project.

The FAO Lead Technical Officer (LTO): Under the general technical oversight of the LTU, the LTO will provide technical guidance to the project team to ensure delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical backstopping from all the concerned FAO units represented in the Project Task Force responding to requests from INRA/PMCU. The Project Task Force is thus composed of technical officers from the participating FAO units and of operational officers and is chaired by the BH. The LTO, supported by the LTU when needed, will be responsible for:

- Review and give no-objection to TORs for consultancies and contracts to be performed under the project and to CVs and technical proposals short-listed by the PMCU for key project positions, goods, minor works, and services to be financed by GEF resources ;
- Supported by the FAO Representation in Morocco, review and clear final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed ;
- Assist with review and provision of technical comments to draft technical products/reports on request from the PMCU during project execution ;
- Review and approve project progress reports submitted by the PMCU to the FAO Representation in Morocco ;
- Support the FAO Representative in reviewing, revising and giving no-objection to AWP/B submitted by the PMCU and to be approved by the Project Steering Committee ;
- Prepare the annual Project Implementation Review report, supported by the FAO Representation in Morocco and inputs from the PMCU, to be submitted for clearance and completion by the FAO GEF Coordination Unit (TCI) which will subsequently submit the PIR to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that PMCU has provided information on co-financing provided during the course of the year for inclusion in the PIR ;
- Field annual (or as needed) project supervision missions ;
- Participate in review mission including the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation supported by the FAO ;
- Review and revise TORs for the final evaluation, participate in the final project closure workshop with all key project stakeholders and the development of and follow up on recommendations on how to insure sustainability of project outputs and results after the end of the project.

The **FAO GEF Coordination Unit (TCI)** will review and approve project progress reports, project reviews, and financial reports and budget revisions. The FAO GEF Coordination Unit will review and clear the annual PIR and undertake supervision missions if considered necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the FAO GEF Coordination Unit. The FAO GEF Coordination Unit will also participate in the final evaluation and the development of corrective actions in the project implementation strategy in the case needed to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will in

collaboration with the FAO Finance Division request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed.

The FAO Finance Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO GEF Coordination Unit, call for project funds on a six-monthly basis from the GEF Trustee.

Committees and working groups

Project Steering Committee (PSC). A PSC will be established and chaired by the Minister of Agriculture and with the participation of the Minister of Environment or his/her delegate, the Executive Directors of ADA, ANDZOA, INRA, ONSSA, ONCA, APDESPS, ORMVAT-TF, DPA Tiznit, DRA Guelmim-Smara, DPA Figuig and the FAO Representative in Morocco. The PSC will meet minimally twice a year and its specific responsibilities will be: (i) overall oversight of project progress and achievement of planned results as presented in six-monthly Project Progress Reports; (ii) take decisions in the course of the practical organization, coordination and implementation of the project; (iii) facilitate cooperation between INRA, ADA, ANDZOA, APDESPS and ONCA, FAO and project participating partners and project support at the local level; (iv) advise the PMCU on other on-going and planned activities facilitating collaboration between the Project and other programs, projects and initiatives in the project sites; (v) facilitate that co-financing support is provided in a timely and effective manner; and (vi) review six-monthly Project Progress Reports and approve AWP/B.

Technical Working Groups (TWG) will be established to provide technical advice on specific project components and outputs and may be composed of technical staff from the Directorate of Production Chain development (DDFP), the national research institutes such as INRA and the Institute of Agronomy and Veterinary Hassan II (IAV), ONSSA, ONCA, FAO among others. The main tasks of the TWGs will be to provide technical advice to the PSC, backstop the PMCU on request, advise the PMCU on other on-going and planned activities and facilitate collaboration between the Project and other programs, projects, and initiatives of sector agencies and research institutions. The TWGs may also be involved in technical evaluation of project progress and outputs, and identification of possible solutions and/or changes in project activities when technical issues arise in the course of project implementation.

4.3 FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project will be USD 8.62 million, to be financed through a USD 771,918.00 GEF grant and USD 7.85 million in co-financing from: (i) FAO in-kind contribution (USD 350,000); (ii) ANDZOA *Improvement of Agricultural Production in Oasis* (USD 4 million); (iii) ADA *PMV/Pillar II* (USD 2 million); (iv) APDESPS *Development of the Southern Oases Programme* (USD 1 million); and (v) INRA in-kind contribution (USD 500,000). Table 4.3.1 below shows the cost by component and outputs and by sources of financing and type of confirmed co-financing. The FAO will, as the GEF Agency, only be responsible for the execution of the GEF resources and the FAO co-financing.

4.3.1 Financial plan (by component, outputs and co-financier)

Component/Output	FAO (in-kind)	INRA (in-kind)	ANDZOA (cash)	ADA (cash)	AgenceSud (cash)	GEF	Total	%
Component 1: Creating the enabling environment to maintain the flow of agro-ecosystems services in Oases systems, sustaining local communities' livelihoods.	**100,000**	**125,000**	**425,000**	**400,000**	**350,000**	**104,600**	**1,504,600**	**17%**
Output 1.1: Databases and catalogues on local seed varieties including plant genetic resources are developed.	-	-	-	-		25,750	**25,750**	**0%**
Output 1.2:A regulatory framework for the development of local seed varieties is established and the seed sector is strengthened.	-	-	-	-		17,600	**17,600**	**0%**
Output 1.3: Seed growers' organizations and seed growers' networks are established.	-	-	-	-		61,250	**61,250**	**1%**
Component 2: Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology.	**75,000**	**125,000**	**3,400,000**	**-**	**-**	**404,260**	**4,004,260**	**46%**
Output 2.1: Sustainable land and water management practices targeting the reversion of land degradation trends implemented in five selected pilot sites in Oases systems.	-	-	-	-		139,210	**139,210**	**2%**
Output 2.2:Farmers are coached on flood control techniques and on measures against land degradation/desertification.	-	-	-	-		154,250	**154,250**	**2%**
Output 2.3:Local producers are coached on conservation and water use efficiency practices and on hydro-agricultural development measures based on traditional irrigation systems	-	-	-	-		110,800	**110,800**	**1%**
Component 3: Mainstreaming of the biodiversity conservation and sustainable use into the local communities' strategies for economy diversification in Oases landscapes.	**75,000**	**125,000**	**175,000**	**1,220,000**	**325,000**	**142,300**	**2,062,300**	**24%**
Output 3.1:Enhanced local capacity for implementing existing labelled local Oases products	-	-	-	-		8,250	**8,250**	**0%**
Output 3.2:Applications are submitted to the competent authorities for labelling of local Oases products, on the distinctive signs of origin and						5,300	**5,300**	**0%**

quality of the food and agricultural products								
Output 3.3: Agricultural products from local crops and varieties are labelled organic.						2,950	**2,950**	**0%**
Output 3.4:Valorisation of local agrifood products such as dates and durum is enhanced						1,500	**1,500**	**0%**
Output 3.5: Product benchmarking of labelled agro-biodiversity products						11,400	**11,400**	**0%**
Output 3.6:Local producers are trained on seed conservation and participatory plant breeding techniques through demonstration plots	-	-	-	-		112,900	**112,900**	**1%**
Component 4: M&E and information dissemination	**100,000**	**125,000**	**-**	**380,000**	**325,000**	**47,397**	**977,397**	**11%**
Output 4.1: System for systematic collection of field-based data to monitor project outcome indicators made operational.	**-**	**-**	**-**	**-**		**10,000**	**10,000**	**0%**
Output 4.2:Final evaluation conducted						**30,000**		**0%**
Output 4.3: Information dissemination	**-**	**-**	**-**	**-**		**7,397**		**0%**
Project Management	**-**	**-**	**-**	**-**		**73,361**	**73,361**	**1%**
Total Project	**350,000**	**500,000**	**4,000,000**	**2,000,000**	**1,000,000**	**771,918**	**8,621,918**	**100%**

4.3.2 GEF inputs

The requested GEF grant will be allocated mainly in support of institutional capacity building at local and national level, including trainings on *in-situ* conservation, sustainable harvesting agro-ecology, SLM practices, sustainable water management and flood control, value chain development and marketing of labelled products.

4.3.3 Government inputs

The government in-kind co-financing will mainly consist in staff time, office space and utilities, and support for monitoring and technical outreach activities. The government Cash co-financing will support the supply of equipment for improving soil quality, improvement of water harvesting infrastructure, support to labelling of products activities, capacity building at central, local and grassroots level.

4.3.3 FAO inputs

FAO in-kind staff time co-financing will be used to support technical assistance and guidance to the project in areas such as sustainable land and water management practices, labelling of products, agro-ecology as well as gender mainstreaming.

FAO will also provide in-kind co-financing to the project.

4.3.5 Other co-financiers inputs

N/A

4.3.6 Financial management of and reporting on GEF/LDCF/SCCF resources

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO's rules and procedures.

All financial reporting shall be in US dollars. Within one month of the end of each six month, i.e. on or before 31 July and 31 January, the FAO Representation in Morocco shall submit six-monthly statements of expenditure of GEF resources to the PMCU and the PSC. The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis so as to monitor project progress and to reconcile outstanding advances during the six month period. The financial statement shall contain information that allows for a financial overview of the execution of the project.

FAO shall prepare annual financial reports on the use of the SCCF and GEF resources to be submitted with the 2nd six monthly Project Progress Report to the PSC, showing amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments) as follows: Details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in this Project Document Appendix 3, as at 31 December each year.

An annual budget revision will be prepared by the FAO Representation in Morocco and inserted in the GRIMS in collaboration with the PMCU for clearance by the LTO, and the FAO GEF Coordination Unit. The financial execution will be monitored by the LTO and the FAO GEF Coordination Unit.

Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the Financial Procedures Agreement with the GEF Trustee and submitted by the FAO Finance Division (CSFE).

Responsibility for cost overruns. The BH shall utilize the GEF project funds in strict compliance with the project document. The BH shall be authorized to make variations not exceeding 20 per cent on any total output budget line or any cost category line of the project budget provided that the total allocated for the specific budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework Appendix 1. Any variations exceeding 20 per cent on any total output budget line or any cost category line, that may be necessary for the proper and successful implementation of the project, shall be subject to prior consultations with the LTO and the FAO-GEF Coordination Unit. In such a case, a revision to the FAO-GEF budget in FPMIS should be prepared by the BH and approved by the LTO and the FAO-GEF Coordination Unit. Cost overruns shall be the sole responsibility of the BH.

4.4 PROCUREMENT

The Budget Holder, in close collaboration with the Project Coordinator, the LTO and the Budget and Operations Officer will procure the equipment and services provided for in the detailed budget in Appendix 3, in line with the Annual Work Plan and Budget and in accordance with FAO's rules and regulations.

Prior to commencement of procurement, the BH, in close consultation with the Project Coordinator and the LTO, will complete the procurement plan for all services and equipment to be procured by FAO.

The procurement plan shall be updated by the BH every 12 months and submitted to and cleared by the LTO with the AWP/B and annual financial statement of expenditures report for the next instalment of funds.

4.5 MONITORING AND REPORTING

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the Project Results Framework (Appendix 1 and described in section 2.3 and 2.4). The project Monitoring and Evaluation Plan has been budgeted at USD 128,968 (see Appendix 3, Component 5). Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines.

4.5.1 Oversight and monitoring responsibilities

At the initiation of implementation of the GEF Project (PY1), a short-term M&E Specialist will design and set up a project progress monitoring system, in close consultation with the PMCU. Participatory mechanisms and methodologies for systematic data collection and recording will be developed in support of outcome and output indicator monitoring and evaluation. During the inception workshop (see section 4.5.3 below), M&E related tasks to be addressed will include: (i) presentation and clarification (if needed) of the project Results framework with all project stakeholders; (ii) review of the M&E indicators and their baseline; (iii) drafting the required clauses to include in consultants' contracts to ensure they complete their M&E reporting functions (if relevant); and (iv) clarification of the respective M&E tasks among the Project different stakeholders. One of the main outputs of the workshop will be a detailed monitoring plan agreed to by all stakeholders based on the monitoring and evaluation plan summary.

The day-to-day monitoring of the Project implementation will be the responsibility of the PMCU driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The Project Coordinator will closely support the PMCU in the mentioned tasks. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project partners. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with local stakeholders and coordinated through the PMCU and facilitated through project planning and progress review workshops. An annual project progress review and planning meeting should be held with the participation of the PMCU. The AWP/B will be developed in a manner consistent with the project's Results Framework to ensure adequate fulfillment and monitoring of project outputs and outcomes.

Following the approval of the Project, the project's first year AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with an annual reporting calendar. In subsequent years, the work plan and budget will follow an annual planning and reporting cycle as specified in section 4.5.3 below.

4.5.2 Indicators and information sources

To monitor project outputs and outcomes including contributions to global environmental benefits and adaptation benefits, specific indicators have been established in the Project Results Framework (see Appendix 1). The Project Results Framework indicators and means of verification will be applied to monitor both project performance and impact. Following FAO monitoring procedures and progress reporting formats, data collected will be sufficiently detailed to track specific outputs and outcomes, and flag project risks early on. Output target indicators will be monitored on a six-monthly basis, and outcome target indicators will be monitored on an annual basis, if possible, or as part of the final evaluation. The project output and outcome indicators have been designed to monitor on-the-ground impacts and progress in building and consolidating capacities for in-situ conservation and participatory plant breeding, SLM and sustainable water management activities, both at national as well as local level. The baseline and target for these indicators are established in the Project Results Framework and will be fine-tuned and included in the M&E plan to be designed by the short-term M&E specialist in PY1.

The main sources of information to support the M&E program will be: (i) INRA's monitoring systems; (ii) participative progress monitoring and workshops with beneficiaries; (iii) on-site monitoring of the implementation of the SLWM practices as well good agricultural practices based on agro-ecology; (iv) project progress reports prepared by the Project Coordinator with inputs from INRA, ANDZOA, ADA, ONCA, APDESPS, the RPMC and project specialists; (v) consultants reports; (vi) participants training tests and evaluations; (vii) the final evaluation, as well as post project impact and evaluation studies completed by independent consultants; (viii) financial reports and budget revisions; (ix) Project Implementation Reviews prepared by the FAO Lead Technical Officer(s) supported by the FAO Representation in Morocco; and (ix) FAO supervision mission reports.

4.5.3 Reporting schedule

Specific reports that will be prepared under the M&E program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual Project Implementation Review (PIR); (v) Technical Reports; (vi) co-financing Reports; and (vii) Terminal Report. In addition, assessment of the SCCF and GEF Monitoring Evaluation Tracking Tools (METTs) against the baseline (completed during project preparation) will be required at project midterm and at the final project evaluation.

Project Inception Report. After FAO approval of the project and signature of the GCP Agreement an inception workshop will be held. Immediately after the workshop, the PMCU supported by the Project Coordinator will prepare a project inception report in consultation with the FAO Representation in Morocco and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan based on the monitoring and evaluation plan summary presented in section 4.5.4 below. The draft inception report will be circulated to FAO and the Project Steering Committee for review and comments before its finalization, no later than three months after project start-up. The report should be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit and uploaded in FPMIS by the LTO.

Annual Work Plan and Budget (AWP/B). The PMCU will submit to the FAO Representation in Morocco a draft Annual Work Plan and Budget no later than 10 January. The AWP/B should include detailed activities to be implemented by project outputs and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The draft AWP/B is circulated to and reviewed by the FAO Representation in Morocco, PMCU incorporates eventual comments and the final AWP/B is send to the PSC for approval and to the FAO for final no-objection and upload in FPMIS by the FAO GEF Coordination Unit.

Project Progress Reports (PPR): The PMCU will prepare six-monthly PPRs and submit them to the FAO Representation in Morocco no later than July 31 (covering the period January through June) and 31 January (covering the period July through December). The 1st semester six months report should be accompanied by the updated AWP/B, for review and no-objection by FAO. The PPR are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework Appendix 1). The FAO Representation in Morocco will review the progress reports and collect and consolidates eventual FAO comments from the LTU, LTO, and the FAO GEF Coordination Unit and provide these comments to the PMCU. When comments have been duly incorporated the LTO will give final approval and submit the final PPR to the FAO GEF coordination Unit for final clearance and upload in FPMIS.

Annual Project Implementation Review (PIR): The LTO supported by the LTU and the FAO Representation in Morocco and with inputs from the PMCU, will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the FAO GEF Coordination Unit for review and approval no later than 31 July. The FAO GEF Coordination Unit will upload the final report on FAO FPMIS and submit it to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The FAO GEF Coordination Unit will provide the updated format when the first PIR is due.

Technical Reports: Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by PMCU to the FAO Representation in Morocco who will share it with the LTO and the LTU for review and clearance and to the FAO GEF Coordination Unit for information and eventual comments, prior to finalization and publication. Copies of the

technical reports will be distributed to the PSC and other project partners as appropriate. The final reports will be posted on the FAO FPMIS by the LTO.

Co-financing Reports: The PMCU will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by INRA, ANDZOA, ADA, APDESPS and eventual other partners not foreseen in the Project Document. The PMCU will submit the report to the FAO Representation in Morocco in a timely manner on or before 31 July covering the period July (the previous year) through June (current year).

GEF LD and BD Tracking Tool: Following the GEF policies and procedures, the tracking tool for LD and BD focal areas will be submitted at three moments: (i) with the project document at CEO endorsement; (ii) at the project's mid-term; and (iii) with the project's terminal evaluation or final completion report.

Terminal Report: Within two months before the end date of the GCP Agreement, the PMCU will submit to the FAO Representation in Morocco a draft Terminal Report. The main purpose of the final report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. The terminal report is accordingly a concise account of the main **products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to the department's and country's further development of in-situ conservation, participatory plant breeding, SLM, sustainable water management, agroecology, value chain development and agricultural transformation in the context of their development priorities as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 4.6 below. A final project review meeting should be held to discuss the draft terminal report before it is finalized by the PMCU and approved by the FAO LTO, LTU and the FAO GEF Coordination Unit.

4.5.4 Monitoring and evaluation plan summary

The monitoring and evaluation plan will serve two functions: first, periodic assessment of project implementation and performance of activities and, second, evaluation of their outcomes in terms of relevance and effectiveness. Both will contribute to improved decision making and management, by keeping the project on track towards achieving the human development and global environmental goals/objectives and by feeding knowledge from experiences and lessons learnt into planned activities.

Monitoring will take place at two levels: project execution and project performance.

Project Execution: Monitoring at project execution level will involve collection of information on actual implementation of project activities compared to those scheduled in the work plan, including the delivery of quality outputs in a timely manner, identify problems and constraints (technical, human resource and financial), make clear recommendations for corrective actions, identify lessons learned and best practices.

Day-to-day monitoring of implementation progress will be the responsibility of the Project Coordinator, who reports directly to the Project Steering Committee and FAO. It is envisaged that the Project Coordinator will utilize a M&E system that will be designed and agreed in PY1. The system will allow the Project Coordinator to identify key milestones and outputs from each of the main components of the project as defined in the work plan. Each activity will have allocated a percentage score based on an evaluation of its contribution to the completion of each component.

Project Performance: Performance evaluation will assess the project's success in achieving its outcomes. Project performance will be monitored closely by FAO and by the Project Steering Committee through semi-annual project progress reports (PPRs), annual project implementation reviews (PIRs), technical reports, and technical supervision missions. The overall achievement of the project's outcomes will be evaluated at the end of the project through an independent terminal evaluation (see section 4.6).

The **Table 5** below provides a summary of the main M&E reports, responsible parties and timeframe

Type of M&E Activity	Responsible Parties	Time-frame	Estimated of costs (USD)
Inception Workshop	PMCU, supported by the FAO LTU, BH, and the FAO GEF Coordination Unit	Within two months of project start up	2,000
Project Inception Report	PMCU, cleared by FAO LTU, BH, and the FAO GEF Coordination Unit	Immediately after workshop	The visits of the LTO will be paid by GEF agency fee
Field-based impact monitoring	PMCU, participating executing partners and other relevant institutions.	Continually	8,000
Supervision visits and rating of progress in PPRs and PIRs	PMCU, FAOMA, FAO LTU and FAO GEF Coordination Unit.	Annual or as required	The visits of the LTO will be paid by GEF agency fee. The visits of the NPC and Technical Assistants will be paid from the project travel budget
Project Progress Reports	PMCU and Project Coordinator with inputs from other partners.	Six-monthly	0 (as completed by NPC and Technical Assistants)
Project Implementation Review report	Inputs provided by the Project Coordinator. FAOMA and LTUs supported by the PMCU. PIRs cleared and submitted by the FAO GEF Coordination Unit to the GEF Secretariat	Annual	Completed by NPC and National Technical Assistants. LTO's involvement is covered by the fee.
Co-financing Reports	PMCU	Annual	Completed by NPC and Technical Assistants
Technical reports	PMCU, LTU	As appropriate	Covered by NPC and National Technical Assistants salaries. LTO's involvement is covered by the fee.

Type of M&E Activity	Responsible Parties	Time-frame	Estimated of costs (USD)
Final evaluation	External Consultant, FAO independent Evaluation Office in consultation with the project team including the FAO GEF Coordination Unit, the LTU, and other partners	At the end of project implementation	30,000 for external, independent consultants and associated costs. In addition the agency fee will pay for expenditures of FAO staff time and travel
Terminal Report	PMCU, FAOMA, LTUs, TSCR report Unit	At least two months before the end date of the GCP Agreement	Covered by NPC and National Technical Assistants salaries. LTO's involvement is covered by the fee
Best practices publication	PCU, LTO & Participating Units	Between the second and last year	7,397 for publication preparation and printing
		Total	**47,397**

4.6 PROVISION FOR EVALUATIONS

An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting of the project partners. The FE would aim to identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This Evaluation would also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities to assure continuity of the processes initiated by the Project.

The FAO LTO will prepare the first draft of the Terms of Reference for the final evaluation and consult with and incorporate comments from MAG/PMCU, the FAO budget holder, the FAO Lead Technical Unit, and the FAO GEF Coordination Unit. Subsequently, in the case of the final evaluation, the TORs will be sent to the FAO Office of Evaluation for finalization, in accordance with FAO evaluation procedures and taking into consideration evolving guidance from the GEF Evaluation Office. The TORs and the reports will be discussed with and commented upon by the project partners. Critical issues to be included in the TORs for the evaluation in the final evaluation will in particular be the ones captured by the outcome indicators.

4.7 COMMUNICATION AND VISIBILITY

Giving high visibility to the project and ensuring effective communications in support of the Project's message is to be addressed through a number of activities that have been incorporated into the Project design. These include: (i) the recruitment of one PMCU staff member responsible (inter alia) for communications and knowledge management; (ii) the preparation of documents and communication tools that capture the Project's economic, ecological and social benefits; (iii) several regional and national workshops to raise awareness and lobby, and; (iv) several awareness raising activities.

These inputs and activities will be integrated into the Project Work plan, and, as such, will come out of the Project's technical activities rather than be stand-alone activities. Notably, under Component 2, the support to oasis farmers will include: (i) communication and multi-

media training materials; (ii) demonstration material to increase the visibility of the use of landraces and local cultivars; (iii) multiple training workshops including local institutions, stakeholders and populations in the project intervention areas, that will raise awareness among participants; and (iv) and preparation of a project website that will help disseminate periodic project newsletters and specific publications on project-related best practices, including lessons learned and short stories with photos.
Component 4 will result in the development of three policy briefs on mainstreaming biodiversity into SLM and agricultural valuation and transformation practices.

SECTION 5 – SUSTAINABILITY OF RESULTS

5.1 SOCIAL SUSTAINABILITY

The social sustainability of project results will be achieved through the introduction and adoption of a multi-stakeholder, bottom-up and gender-sensitive planning approach that focuses on the preservation of valuable traditional knowledge and cultural practices in Oasis systems. Direct beneficiaries will be empowered to take ownership over the formulation of regulatory frameworks affecting their livelihoods. Indeed, seed growers and small scale producers will be fully involved in the formulation of the seed sector regulatory framework resulting from the participatory plant breeding exercise. Moreover, the project respects and strengthens existing decision making processes and best practices rooted in traditional customary law and other cultural practices such as community organisation to manage water, soil and pasture (agdal) and the collective management of water irrigation and harvesting systems (khettaras).

The project will focus on the human management and knowledge systems, including their socio-organizational, economic and cultural features that underpin the conservation and adaptation processes in highly valuable agricultural systems without compromising their resilience, sustainability and integrity. The innovative feature of the project allows the integration of these local agricultural and livelihood systems to global environmental markets such as the labelling of agricultural products linked to biodiversity conservation and sustainable harvesting, thereby ensuring the sustainability of traditional knowledge systems without their fossilization.

5.2 ENVIRONMENTAL SUSTAINABILITY

The project's main objective is to strengthen SLM and sustainable water management practices as well as to mainstream biodiversity conservation in agricultural valuation and transformation processes to increasing the natural capital of vulnerable communities living in degraded oasis systems. It directly addresses the issue of land degradation and biodiversity loss and proposes integrated activities promoting low input-based production systems based on organic farming and agro-ecology. Several aspects illustrate environmental sustainability:

- Many of the project intervention areas currently consist of large areas of already degraded

land. In those areas, the aim of the project is to improve natural and agricultural resources management. Several approaches will be demonstrated under Outcome 2. These approaches build on indigenous knowledge and the use of indigenous and local adapted species and varieties/cultivars;

- Many of the project intervention areas also include degraded agricultural land, due to over-exploitation and inadequate management. The project will introduce alternatives and technological improvements to reverse this land degradation tendency;
- The large body of training material to be developed by the project will cover environmentally sustainable practices and measures. This will include low-input farming, sustainable crops production intensification techniques, sustainable land management, water conservation measures, etc.;
- The Project supports the conservation of genetic diversity through the participatory plant breeding approach, and through in-situ conservation of local seeds.

5.3 FINANCIAL AND ECONOMIC SUSTAINABILITY

Financial and economic sustainability of project supported activities will be achieved to the extent that these activities are financially and economically viable for the parties involved, including small-scale farmers, producer organizations and local authorities.

The project will introduce methods, measures and practices that contribute to the economic development of the targeted agro-pastoralist communities living in the oasis systems. Accordingly, some 500farmers will benefit from increased knowledge and increased ability to generate revenue in a sustainable manner, and in a manner that preserves oasis biodiversity. Moreover, the changes introduced by the project will be developed through a participatory and multi-stakeholder approach and will respect local needs, local resources and local capacity. Hence, the local communities will be able to sustain the economic improvements after the project. This is mostly the focus of Outcome 2 and Outcome 3.

Overall, the economic improvements introduced by the project (see previous two paragraphs) will contribute to the financial sustainability of many of the project interventions.

5.4 SUSTAINABILITY OF CAPACITIES DEVELOPED

The project will address the three dimensions of capacity development (CD) identified in *FAO's Approach to Sustainability*[17]: i) individuals (small-scale farmers); ii) institutions (local authorities, regional and provincial directorates and local offices of MAPM, ANDZOA and ADA, APDESPS, cooperatives, NGOs and customary institutions); and iii) the policy enabling environment (new seed regulatory framework based on participatory selection of seeds and multi-stakeholder evaluations; enhanced institutional capacities through trainings on SLM sustainable harvesting practice, and valuation of agricultural products based on SLM and biodiversity conservation criteria's). The interaction between community members and local CSOs, and between CSOs and municipal governments will be also addressed.

[17]http://www.fao.org/capacitydevelopment/the-three-dimensions-of-the-fao-capacity-development-framework/en/20

The project will develop capacity at many levels which will contribute to the overall body of capacity related to sustainable land management, biodiversity and product labelling. This capacity will all be aligned to, and integrated into, existing organizations, both governmental and non-governmental, and so will have a sustained use after the project.

With the aim of mainstreaming biodiversity into national regulatory frameworks, SLM interventions and agricultural valuation and transformation processes, the project will build the capacity of planners and technical decision makers on agro ecology and sustainable practices to increase productivity. It will develop catalogues and databases (Output 1.1) and training materials that can be used for training, awareness raising and dissemination, and which (based on past experience) will continue to be used after the project. In each case the training will be designed in a participatory manner to respond to the needs and resources of the direct beneficiaries, it will be focussed, demand-driven and needs-driven. The recipients of the training will be well placed to immediately apply the contents of the training to their work. Through practical and learning-by-doing activities the target population will be incentivized to participate in project activities.

5.5 APPROPRIATENESS OF TECHNOLOGY INTRODUCED

The project will mainly validate, promote and adapt traditional knowledge based agricultural practices to increase sustainability and diversify production. These will be based on past experience and should therefore be locally appropriate.

The project will implement a holistic approach, and promote a better coordination between traditional institutions and regulations with ″modern″ ones, as well as more efficient processes which builds on the lessons learned and experiences of the project executed by the Government of Morocco and FAO (funded by IFAD through UCODEP, presently OXFAM Italia) in the site Imichil-Amellagou.

5.6 REPLICABILITY AND SCALING UP

The potential for scaling up the project's approach will be encouraged through the dissemination of lessons learned and experiences, to raise awareness and ensure that the local communities and stakeholders understand and adopt, with the Government support, the dynamic development model, to manage it and to promote it in the neighbouring areas. This model will be proposed to national and local authorities to create synergies and match their needs and strategies and ensure the appropriation of the development approach.

Building on the lessons learned from past projects mentioned above, the proposed project has potentialities of up-scaling the approach in a broader landscape, and provide the necessary focus to the once valued oases agricultural practices which include conserving ancient efficient irrigation and water management systems, farming and sheep breeding practices, and strengthen the customary community participatory management practices for natural resources.

APPENDICES

APPENDIX 1: RESULTS MATRIX

Project outcomes and impacts:

Objective/Impact	Baseline	Outcome indicators	Assumptions
Global Environmental Objective: To contribute to arresting and reversing current global trends in land degradation through the promotion of sustainable land and water management practices and conservation of biodiversity in oasis systems in Morocco.	**Component 1:** Agricultural framework enhancement: Score 1. No seed policy/regulation framework in place. [LD PMAT LD1. i)]. Local catalogues of seed varieties and cultivars do not exist in the targeted project area.	**Component 1:** Agricultural framework enhancement: Score 4. A seed regulatory framework is formally adopted by the Government. [LD PMAT LD1. i)]. At least 500 qx local seed varieties are identified, classified and georeferenced in local seed catalogues.	**Component 1:** High involvement and participation of local institutions and government authorities in supporting the development of the seed sector.
Project Development Objective:[18] Enhance food production and improve the livelihoods of local communities by supporting an improved soil health and fertility and promoting sustainable agricultural practices in five oasis ecosystems: Ait Monsur, Akka, Assa, Figuig and Imilichil.	**Component 2:** 1117 ha of land degradation within the project boundary (LD PMAT I. 3.a). Baseline indicators on soil fertility will be further developed during PY1. Less than 10% of agricultural land is involved in diversified and integrated agricultural production. [LD PMAT LD1. iii)].	**Component 2:** Measures to reduce degradation, conserve and sustainably use 1117 ha of land lead to improvement of soil fertility, resilience and an increase of productivity by 15% in 640ha (certified land). 25% of agricultural land is involved in diversified and integrated agricultural production. [LD PMAT LD1. iii)].	**Component 2:** The national government (ANDZOA, ADA, INRA, Agence Sud) supports project activities through the Plan Maroc Vert. Local producers actively contribute to the sustainability of project outputs during project implementation.
	Component 3: Farmers are involved in organic farming practices however their	**Component 3:** 640ha in oases-ecosystems under certification/labelling scheme.	**Component 3:** Climate related shocks and/or epidemic outbreaks do not cause

[18]In line with FAO SOs

	produce is not labelled organic. Farmers are not involved in local seed conservation activities.	5 specifications submitted for application for the labelling of local products, including: dates, cereals, apples and wool. At least 500 qx local seed varieties are conserved involving 75 farmers (out of which 50% are women).	shortages or unavailability of crop seeds that could negatively impact distribution and adoption of local crop varieties.
	Component 4: N/A	**Component 4:** Project implementation based on results-based management.	**Component 4:** FAO will execute the project budget and is providing technical backstopping to the overall project cycle. The M&E system will be designed by the M&E Specialist

Project outputs and outcomes:

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
Component 1: Creating the enabling environment to maintain the flow of agro-ecosystems services in Oases systems, sustaining local communities' livelihoods							
Outcome 1 The enabling environment to support the conservation of agro biodiversity has been enhanced through targeting regulatory frameworks, local institution building and collection and storage of data.	Agricultural framework enhancement: Score 1. No seed policy/regulation framework in place. [LD PMAT LD1. i)] Local catalogues of seed varieties and cultivars do not exist in the targeted project area.	Agricultural framework enhancement: Score 4. A seed regulatory framework is formally adopted by the Government. [LD PMAT LD1. i)] At least 500 qx local seed varieties are identified, classified and georeferenced in local seed catalogues.	Draft document is prepared and submitted to the competent institution.	The framework is validated. At least 250 qx local seed varieties are identified, classified and georeferenced in local seed catalogues.	The framework is formally adopted by the Government. At least 500 qx local seed varieties are identified, classified and georeferenced in local seed catalogues	The official framework document. Minutes of stakeholder meetings and consultations. Project final evaluation; PPRs; PIRs.	Experts from ONSSA, INRA, DDFP, DSS ONSSA. PMCU, PRMCs, Project Coordinator.
Output 1.1 Databases and catalogues on local seed varieties including plant genetic resources and pollinators are developed	A census on the number and type of local seed varieties available in the project area does not currently exist. Farmers have limited knowledge on harvesting, stocking and propagation techniques of cultivars and landraces.	Local varieties and cultivars of vegetable crops, forage, cereal and date palm are catalogued in the 5 pilot sites. Seed growers are identified. A tool for tracking and monitoring seed exchange and seed flow is devised in the targeted oasis systems. Strategies to mainstream	Questionnaires and surveys for collecting existing information on local seed varieties and plant genetic resources are developed. Mapping exercise to locate seed growers is conducted in the 5 pilot sites. Seed exchange and seed flow is monitored.	Validation workshop of identified seed varieties to be included in the catalogues.	Practical guide books/catalogues on local seeds and seedlings varieties are distributed among seed growers cooperatives and networks.	Data collection surveys/questionnaires. Maps on identified seed growers. Local seed catalogues.	INRA, PMRCs, PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
		biodiversity conservation into agricultural production are discussed.					
Output 1.2 A regulatory framework for the development of local seed varieties is established and the seed sector is strengthened	Agricultural framework enhancement: Score 1. No seed policy/regulation framework in place. [LD PMAT LD1. i)]	Agricultural framework enhancement: Score 4. A seed regulatory framework is formally adopted by the Government. [LD PMAT LD1. i)]	Multi-stakeholder workshop s(at least 2) for the elaboration of the seed regulatory framework are held. Draft document is prepared and submitted to the competent institution	Multi-stakeholder workshops (at least 2) are held to validate the regulatory framework document.	The framework is formally adopted by the Government.	The official framework document. List of participants to workshops.	Experts from ONSSA, INRA, DDFP, DSS ONSSA. Project Coordinator.
Output 1.3 Seed growers' cooperatives and seed growers' networks are established.	No structure in place for seed growers in the targeted project area.	5 seed growers' cooperatives are formed and 5 seed growers' networks (50% women) are established (1 cooperative and 1 network per each pilot site)	Training material on participatory plant breeding and in-situ conservation in the five pilot sites is designed. Formation of 5 cooperatives (50% women)	Trainings for newly formed cooperatives. Establishment of 5 seed growers' networks (50% women).		Training material on in-situ conservation. Trainings attendance sheet. Legal document for cooperative formation Seed growing networks schedules	Experts from DRAs INRA ONCA. Project Coordinator.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
Component 2: Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology.							
Outcome 2.1 Agricultural production is enhanced and allows alleviation of land degradation in the oasis systems.	About 1117ha of land degradation within the project boundary (LD PMAT I. 3.a). Baseline indicators will be further measured in PY1	Measures to reduce degradation conserve and sustainably use of 1117 ha of land lead to improvement of soil fertility, resilience and an increase of productivity by 15% in 640he (certified land).		10% increase in productivity in 640ha		INRA monitoring system and year reports. Project final evaluation; PPRs; PIRs.	INRA, ANDZOA, ADA PMRC , PMCU, Project Coordinator.
Output 2.1.1 Sustainable land and water management practices targeting the reversion of land degradation trends implemented in five selected pilot sites in Oases systems	Insufficient local knowledge on the benefits of intensification systems based on agro-ecology. Less than 10% of agricultural land is involved in diversified and integrated agricultural production. [LD PMAT LD1. iii)] Limited adoption of integrated crop/plant management. Phyto-technical management of palm grove systems are not applied. Agricultural yields are low and of poor quality. Limited knowledge of no-	500 farmers are trained on SLM and water management practices. 25% of agricultural land is involved in diversified and integrated agricultural production. [LD PMAT LD1. iii)]	Pruning and cleaning of palm groves in Ait Mansour, Assa, Figuig and Imilchil. Installation of drip irrigation systems in three pilot date palm orchards in Ait Mansour, Assa and Figuig. Training of 100 date producers (20 per site) on phyto-technical management of palm grove systems and integrated plant/crop management. Training of farmers on use of organic fertilisers (compost from palm tree waste, manure) and	Pruning and cleaning of palm groves in Ait Mansour, Assa, Figuig and Imilchil. Training on maintenance of drip irrigation systems in three pilot date palm orchards and training on best practices for fertililzation and pollination, including study tours in demonstration plots in Ait Mansour, Assa and Figuig. Trainings on ditch composting. 1 training session of 10 date producers on	Pruning and cleaning of palm groves in Ait Mansour, Assa, Figuig and Imilchil. +1 training session (2 in	List of participants to trainings. Training material. PPRs; PIRs	INRA, ONCA, ANDZOA, Agronomist, PMCU, PMRC.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
	till system. In 4 of the project sites (with the exception of Imilchil-Amellago), traditional date palm production is the main source of income of local farmers. Fruit tree production is scattered and and is not sustainably managed. In the project site of Ait Mansour, less than 5ha (out of a total of 140ha) employs crop rotation with leguminous vegetables.		testing of ditch composting in demonstrative plots. Testing direct-seed cropping in two demonstrative plots in Imilchil (0.25ha). Trainings on crop rotation of leguminous vegetables such as lentils, chickpeas, peas and beans – in all the project sites. Trainings on integrated livestock management with crop production including fencing livestock away from stream banks for improving water quality in pastured stream corridors.	organic farming of dates in Figuig. Monitoring direct-seeding in Imilchil	total) of 10 date producers (20 in total) on organic farming of dates in Figuig.		
Output 2.1.2 Farmers are coached on flood control techniques and on measures against land degradation/ desertification in the five pilot locations.	In most of the project sites, farm fields are severely damaged due to sand deposition caused by floods. Flood defence infrastructure, such as dykes and gabions are severely damaged.	Agricultural area (200ha) protected against flooding. Correction of ravines and stream bank planting (50 ha) in Imilchil-Amellago.	Damaged gabions are rehabilitated. Construction of concrete and dry stone dykes. A detailed hydrological study is conducted in Akka, Figuig et Imilchil-Amellago Training of 10 local extension agents on	Maintenance of rehabilitated gabions.	Impact assessment of the use of concrete and dry stone dykes.	Hydrological studies. Technical reports on the "Palmivelle" system. List of participants to trainings. Training	INRA, ONCA. Palmivelle System expert, Agronomist, PMRC, PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
			organic techniques for stream control and rehabilitation (correction) of ravines Training of agents on the "Palmivelle system" and pilot testing in Akka (80 ha)	 Monitoring and maintenance of the "Palmivelle system" in Akka (80 ha)		material. PPRs; PIRs	
Output 2.1.3 Local producers are coached on conservation and water use efficiency practices and on hydro-agricultural development measures based on traditional irrigation systems.	In all project sites, traditional water collection, and irrigation systems are highly deteriorated. Insufficient water (from the dam) and non-sustainable methods of groundwater use (overuse of diesel pumps) are resulting in a dramatic lowering of the water table underlying the oasis systems. In the project site of Imilchil-Amellago water erosion is estimated at 50-90 ton /ha/yr. Traditional water harvesting systems are highly damaged in all project sites. In Figuig, 20 "Khettaras" are functional and in good shape. In Akka, most of the khettaras have been	Traditional irrigation systems are restored and the local community is involved in maintenance activities. Traditional structures for water diversion are rehabilitated in Imilchil and the local community is involved in maintenance activities. Local capacity enhanced on economical use of irrigation water and hydro-agricultural adjustments in Imilchil. A community based drip irrigation system is introduced in Imilchil	Training on the rehabilitation and management of Khettaras and seguias in Imilchil-Amellago, Figuig, Ait Mansour, Assa and Akka; Trainings on the rehabilitation of water diversion structures (seguisas- Ougoug) in Imilchil; Training on economical use of irrigation water and hydro-agricultural adjustments in Imilchil	Training on the rehabilitation and management of Khettaras and seguias in Imilchil- Amellago, Figuig, Ait Mansour, Assa and Akka. Trainings on maintenance of seguias in Imilchil.	Seguias and water diversion systems in Imilchilare restored.	Training material. Community maintenance schedules for the rehabilitation of Khettaras and seguias. Field visits to monitor the implementation of the drip irrigation system. PPRs; PIRs	INRA, ANDZOA, Hydrologist, PMRCs, PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
	abandoned- less than 10% of the traditional khettara system is functional.						

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
Component 3: Mainstreaming of the biodiversity conservation and sustainable use into the local communities' strategies for economy diversification in Oases landscapes.							
<u>Outcome 3.1</u> Enhanced local capacity for implementing existing labelled local Oases products in the five pilot sites.	Farmers are involved in organic farming practices however their produce is not labelled organic. Farmers are not involved in local seed conservation activities.	640Ha in Oases-Ecosystems under certification/labelling scheme. 5 Specifications submitted for application for the labelling of local products (dates, cereals, apple, wool). At least 500 qx local seed varieties are conserved involving 75 farmers.	At least 200qx local seed varieties are conserved.	640Ha in Oases-Ecosystems under certification/labelling scheme. 5 specifications are submitted for the labelling of local products. At least 200qx local seed varieties are conserved	5 specifications for the labelling of local products are approved.	Official labelling documents; Official document testifying that 640ha. are labelled organic. PPRs, PIRs; Final evaluation.	
<u>Output 3.1.1</u> Enhanced local capacity for implementing existing	4 date varieties are labelled IG in Akka and Figuig as well as honey in Assa,	3 GIE involved in the sustainable harvesting and labelling of local	4 training sessions (2 per project site) targeting local producers, on	3 GIE of date producers and 1 GIE of local crop producers are formed.	Cooperatives involved in the production of labelled products receive training	List of participants to trainings;	ADA; ORMVAT ;

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
labelled local Oases products in the five pilot sites. The labelling criteria will include sustainable production standards in view of biodiversity conservation	however, local producers are not aware on how to implement label specifications contracts.	varieties of dates are formed in Akka and Figuig as well as 1 GIE involved in honey production in Akka. (50% women) 3 cooperatives are trained on the implementation of label specification contracts (cahiers de charge) of GI labelled products. (50% women) 100 date producers and 50 local crop farmers are trained on the management of label specification contracts (cahiers de charge). (50% women)	cooperative and "Groups of Economic Interest" (GIE) formation. 3 training sessions targeting date producing cooperatives in Akka and Figuig, on how to implement GI label specification contracts and on how to manage the chain of supply documentation. 2 training sessions (1 in Akka and 1 in Figuig) on how to implement traceability systems of labelled products	6training sessions targeting date producing cooperatives in Akka and Figuig 1 training session in Assa targeting honey producers, on how to implement a traceability systems. Cooperatives involved in the production of labelled products receive training on label use, packaging and marketing strategies.	on label use, packaging and marketing strategies.	GIE formation certification and minutes of meetings as well as attendance sheets to meetings; training material; planning documents of marketing strategies.	PMRCs ; PMCU.
Output 3.1.2 Applications are submitted to the competent authorities for labelling of local Oases products, on the distinctive signs of origin and quality of the food and agricultural products (cereals and apples in Imilchil, Assiane dates in Figuig and wool in Imilchil and Figuig).	Valuable agro biodiversity products with significant commercial value are not labelled.	5 specifications are submitted for the labelling of local products including dates, crops, apple, and wool. These include: GI label for local crops in Imilchil; GI label for the Assiane date of Figuig; AL label for apples in	2 cooperatives involved in the production of local crops receive training (3 sessions/50 producers/50% women) on the development of specifications for the labelling of local crops.	1 GIE of labelled crop producers (including 2 cooperatives) is formed. Specification for GI labelling of local varieties of crops in Imilchil is submitted to the national authorities. Crop producers (50) are trained (3 sessions) on the "management plan" (plan de control) of GI labelled crops.	GI labelling of local varieties crops in Imilchil is approved. 10% of cereal production is commercialized thanks to GI labelling.	Training attendance lists; Specification documents; GIE's management plans; PPRs, PIRs.	ORMVAT PMRCs; GIE's; Value chain development Expert; PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
		Imilchil; AL label for wool in Imilchil; AL label for wool in Figuig;	50 producers of Assianedates in Figuig are trainedon GI labelling specifications. 50 farmer/herders are trained on AL labelling specifications of wool in Imilchil. A women cooperative involved in valuation of local wool production will be trained on labelling specifications. A guidebook on good practices for product valuation and labelling of local products is developed.	Specification for GI labelling of Assiane dates in Figuigis submitted to the national authorities. Specification for AL labelling of apples in Imilchilis submitted to the national authorities Specification for AL labelling of wool in Imilchil is submitted to the national authorities. 10% of wool produced by the women cooperative is labelled, Specification for AL labelling of wool in Figuig is submitted to the national authorities.	GI labelling of Assiane dates in Figuig is approved. AL labelling of apples in Imilchil is approved. AL labelling of wool in Imilchil is approved and 50 % of wool produced by the cooperative is labelled. AL labelling of wool in Figuig is approved.		
Output 3.1.3 Agricultural products from local crop varieties are labelled organic.	Traditional cropping systems based on local knowledge, low input crop management and traditional agricultural technology, are widely adopted in all of the project sites. Farmers are involved in organic farming practices however their produce is not labelled	Organic certification of 640ha (including 140ha in Ait Mansour, 40ha in Assa, 80ha in Akka, 100ha in Figuig and 280ha in Imilchil).	640ha adopt organic farming and are labelled organic. 2 training sessions on organic date palm	Training of 100 date producers, 50 cereal producers, 50 apple producers on the establishment of a traceability system of organic agricultural products. 1 training sessions	1 training session on agro ecology in all the project sites. 2 training sessions	Trainings attendance list; Organic labelling certification.	ADA; GIE's; Value chain development Expert; PMRCs;

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
	organic.		cultivation involving 100 date producers in Figuig, Akka, Ait Mansour and Assa.(50% women)	involving 50 local crop producers on organic crop production in Imilchil. 1 training session involving 50 apple producers receive technical training on organic agriculture. Local exchange/study tours involving a group of 60 participants to organic farms in the region of Agadir and El Jadida.	involving 50 local crop producers on organic crop production in Imilchil. 2 training sessions involving 50 local crop producers on organic crop production in Imilchil.		PMCU.
Outcome 3.1.4 Valuation of local agrifood products such as dates and durum is enhanced.	In all the project sites, valuation through agro-food transformation is poorly developed. Commercialization is essentially carried out through intermediaries and aggregation projects are inexistent	100% of the agricultural produce of the women cooperative of Imilchil, is transformed and valued. 50% of the agricultural produce of date producers is valued and transformed (i.e production of date paste and syrup).	Training a women cooperative in Imilchil on value adding techniques to improve agrifood production (Couscous, and spaghetti); Training of 20 local producers on the transformation of date production (i.e paste and syrup)	50% of the agricultural produce of the women cooperative of Imilchil, is transformed and valued. 50% of the agricultural produce of date producers is valued and transformed (i.e production of date paste and syrup).	100% of the agricultural produce of the women cooperative of Imilchil, is transformed and valued.	Training attendance lists; PPRs, PIRs.	ORMAVAT; ADA; Value chain development Expert; PMRCs; PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
Output 3.1.5 Product benchmarking of labelled agro-biodiversity products.	Local producers are lacking the resources and apparatus to check themselves whether their produce is saleable or not. Local producers receive little or no training on marketing strategies and on opportunities for the commercialization of labelled products.	A benchmarking for each labelled product is developed. A sale contract is developed for each labelled product.	Benchmarking study for each labelled product.	Training of local producers in developing action plans that will improve the competitiveness of agro-biodiversity products; Training local producers in developing sales contracts.	Sale contracts are prepared for each labelled product.	Sale contract documents; Benchmarking studies; Training attendance lists; PPRs, PIRs.	ADA; Marketing Expert; PMRCs; PMCU.
Output 3.1.6 Local producers are trained on seed conservation and participatory plant breeding techniques through demonstration plots	Local producers and seed growers have limited awareness on seed conservation techniques as well as, limited knowledge on methods for seed stocking, sustainable harvesting and dissemination.	At least 500 qx local seed varieties are conserved involving 75 local producers. 75 local producers in each project site are familiar with local seed conservation techniques and participatory plant breeding. (50% women) 2 demonstrative plots implement participatory plant breeding (Imilchil and Akka). 4 sessions for participatory selection and preparation of seeds are organized.	5 training sessions (1 in each site) on participatory plant breeding methods for organic products are conducted. Collection and selection of landraces and cultivars of local varieties of cereals, pies, lentils and chickpeas in Imilchil and Akka.	+5 training sessions (1 in each site/10 in total) on participatory plant breeding methods for organic products are conducted. Preparation of guidelines on methodologies for seed conservation. Harvesting of selected local varieties on demonstrative plots in Imilchil. Participatory seed evaluation and selection for distribution in Imilchil.	Harvesting of selected local varieties on demonstrative plots in Akka. Participatory seed evaluation and selection for distribution in Akka.		Project Coordinator; INRA; PMRCs; PMCU.

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets			Data Collection and Reporting	
			Year 1	Year 2	Year 3	Means of verification	Responsible for Data Collection
Component 4: Project monitoring and evaluation							
Outcome 4.1 Project implementation based on results-based management		Project outcomes achieved and showing sustainability		50% progress in achieving project outcomes	Project outcomes achieved and showing sustainability.	PIRs; final evaluations.	Project Coordinator, PMCU, FAO.
Output 4.1 System for systematic collection of field-based data to monitor project outcome indicators made operational		Project outcomes achieved and showing sustainability		50% progress in achieving project outcomes	Project outcomes achieved and showing sustainability.	PIRs; Final evaluation.	Project Coordinator, PMCU, FAO.
Output 4.2 Final evaluation conducted					Final evaluation report.	Evaluation report.	Project Coordinator, PMCU, Evaluation expert, FAO.
Output 4.3 Information dissemination			Project web page is created. Publication on project experiences and best practices on sustainable production of local seeds and agricultural transformation of organic production. Dissemination through the project website	Publication on project best practices and lessons learned on mainstreaming biodiversity in soil and water conservation and in local production systems. Dissemination through the project website	Publication on comprehensive project lessons learnt, including successes and failures. Dissemination through the project website	Publications PPRs, PIRs	Communications expert/web design specialist, Project Coordinator, PMCU, FAO.

APPENDIX 2: WORK PLAN (RESULTS BASED)

Outputs	Activities	Responsible Institution	Year 1			Year 2			Year 3		
			Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
Component 1: Creating the enabling environment to maintain the flow of agro-ecosystems services in Oases systems, sustaining local communities' livelihoods											
Output 1.1: Databases and catalogues on local seed varieties including plant genetic resources are developed	Development of questionnaires and surveys for collecting existing information on local seed varieties and plant genetic resources.	INRA, Project Management Regional Project Management Committees (RPMCs).									
	Seeds and seedlings from local landraces are identified and a mapping exercise to locate seed growers is conducted in the 5 pilot sites.	INRA, RPMCs, Project Coordinator.									
	Tracking and monitoring of seed exchange and seed flow in the targeted oasis systems.	INRA, RPMCs, Project Coordinator.									
	Multi-stakeholder workshops with seed growers, extension agents, relevant local authorities; and partner institutions to discuss findings and assess outreach strategies to neighbouring communities	INRA, RPMCs, ONSSA, DDFP, Local NGOs, Cooperatives									
	Validation workshop.	INRA, Project Coordinator, ONSSA, DDFP, Local NGOs, Cooperatives.									
	Development of practical guide books/catalogues on local seeds and seedlings varieties.	INRA , RPMCSs.									

Output 1.2: A regulatory framework for the development of local seed varieties is established and the seed sector is strengthened.	Multi-stakeholder workshops (at least 2) to draft a regulatory framework for local seed varieties with seed growers, local authorities and government officials.	ONSSA, INRA, DDFP, DSS, DAAJ, Cooperatives, NGOs.											
	Validation workshop of the regulatory framework with key stakeholders	ONSSA.											
Output 1.3: Seed growers' cooperatives and seed growers' networks are established.	Production of training material on participatory plant breeding and in-situ conservation in five pilot sites	ONCA, RPMCS.											
	Five seed growers cooperative are formed in each pilot site	DRA, RPMCS											
	Five seed growers networks are created (one in each project site) to promote and organise the preservation, free distribution and exchange of open-pollinated seeds.	DRA, RPMCS											
Component 2: Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology.													
Output 2.1.1: Sustainable land and water management practices targeting the reversion of land degradation trends implemented in five selected pilot sites in Oases systems. • ;	Supporting local agents in pruning and cleaning palm groves to avoid fire hazards and make space for production, and pollination to ensure a high quality of dates, in Ait Mansour, Assa, Figuig and Imilchil.	DRA, RPMCS											

	Supporting farmers in understanding the advantages of crop rotation of leguminous vegetables such as lentils, chickpeas, peas and beans. Training farmers on use of organic fertilisers (compost from palm tree waste, manure), pollination and crop management;	DRA, INRA, RPMCS, ORMVAT, cooperatives and local NGO.										
	Installation and maintenance of drip irrigation systems in three pilot date palm orchards in Ait Mansour, Assa and Figuig ; and training farmers on phyto-technical management techniques for palm dates and crops, including pollination in Ait Mansour and Assa	INRA, ONCA, Agronomist.										
	Training on integrated livestock management with crop production including fencing livestock away from stream banks for improving water quality in pastured stream corridors.	DRA, HCEFLCD, INRA, ORMVAT, Coopératives and local NGOs, RPMCS.										
	Formation des producteurs sur les bonnes pratiques de gestion et de production biologique des dattes à Figuig	DRA de Figuig, ONCA, INRA, RPMCS.										
	Achat d'un semoir direct à traction animale et Installation de deux parcelles de semis direct sur céréales chez deux agriculteurs leader (0.25 ha) un à Imilchil et l'autre à Amellagou.	DRA, RPMCS, INRA, ONCA, ORMVAT.										
	Maintaining and improving soil organic matter through the use of compost in Ait Mansour, Assa, Figuig et Akka.	DRA, RPMCS, INRA, ONCA, Cooperatives and local NGO, RPMCS,ORMVAT.										

Produit 2.1.2:Farmers are coached on flood control techniques and on measures against land degradation/desertification in the five pilot locations	Rehabilitation and construction of gabionades and reduction of the effects of floods based on detailed hydrological studies in Akka, Figuig et Imilchil-Amellago	DRA, Bureau d'étude, INRA, RPMCS.											
	Correction of ravines and organic stabilisation via reforestation in Imilchil- Amellago and training on organic techniques for stream control and rehabilitation (correction) of ravines in Imilchil. Planting of poplars for stream bank control in Imilchil.	ORMVAT, Bureau d'étude, IAVH2.											
	Training of agents on the "Palmivelle system" on re-vegetating sandy areas in Akka and Figuig and coaching on preventive measures against salinity formation.	DRA, ORMVAT, Bureau d'étude, IAVH2.											
Output 2.1.3: Local producers are coached on conservation and water use efficiency practices and on hydro-agricultural development measures based on traditional irrigation systems.	Training on the rehabilitation and management of Khettaras and seguias in Imilchil- Amellago, Figuig, Ait Mansour, Assa and Akka;	DRA, ORMVAT, Bureau d'étude, IAVH2.											
	Rehabilitation of water diversion structures in Imilchil.	ORMVAT, ENA.											
	Training on economical use of irrigation water and hydro-agricultural adjustments in Imilchil.	ORMVAT, INRA, cooperatives and local NGOs.											
Component 3: Mainstreaming of the biodiversity conservation and sustainable use into the local communities' strategies for economy diversification in Oases landscapes.													

Output 3.1.1: Enhanced local capacity for implementing existing labelled local Oases products in the five pilot sites.	Training of local producers on creating cooperatives and forming "Groups of Economic Interest" (GIE) engaging the public and private sector.	DRA, ORMVAT, DDFP,ONCA GIE Cereale										
	Creation of four cooperatives and three GIE groups.	DRA, ORMVAT, DDFP,ONCA, DRA Figuig.										
	Training local actors in implementing traceability systems of labelled products and managing the chain of supply documentation.	DRA, ORMVAT, DDFP, ONCA.										
	Training on label use, packaging and marketing strategies	DRA, ORMVAT, DDFP, ONCA.										
Output 3.1.2: Applications are submitted to the competent authorities for labelling of local Oases products, on the distinctive signs of origin and quality of the food and agricultural products (cereals and apples in Imilchil, Assiane dates in Figuig and wool in Imilchil and Figuig).	Development of a GI label for the Assiane date of Figuig (preparing labelling requirements and the request letter for government endorsement).	DRA Figuig.										
	Development of a GI label for cereals in Imilchil (preparing labelling requirements and the request letter for government endorsement).	ORMVAT.										
	Development of a LA label for apples in Imilchil (preparing labelling requirements and the request letter for government endorsement).											
	Development of a LA label for wool in Imilchil (preparing labelling requirements and the request letter for government endorsement).	ORMVAT Tafilalet.										
	Development of a LA label for wool in Figuig.	DRA Figuig.										
	Formation et sensibilisation de 100	ORMVAT.										

	producteurs de dattes, 50 producteurs de céréales et 50 producteurs de pommes sur les IG et le lien avec la protection de la biodiversité et les ressources agricoles.	DRA Figuig.										
	Accompagnement de 100 producteurs de dattes, 50 producteurs de céréales et 50 producteurs de pommes sur la mise en place du système de traçabilité.	DRA, ORMVAT.										
	Appuis de 3 GIE dans le conditionnement des produits locaux et l'utilisation des logo IGP et label agricole.	ORMVAT, DRA, GIEs.										
Output 3.1.3: Agricultural products from local crop varieties are labelled organic.	Organic certification of 640 Ha out of which 140Ha in Ait Mansour, 40Ha in Assa, 80Ha in Akka, 100Ha in Figuig and 300Ha in Imilchil.	GIEs, value chain development expert.										
	100 date producers, 50 apple producers, 50 organic cereals producers and 100 organic wool producers, receive training on organic farming techniques, labelling requirements and label use.	GIEs, value chain development expert.										
	Local exchange/study tours involving a group of 60 participants to organic farms in the region of Agadir and El Jadida.	GIE, value chain development expert										
	Training of 100 date producers, 50 cereal producers, 50 apple producers and 100 wool producers, on the establishment of a traceability system of organic agricultural products.	ORMVAT, DRA.										

Output 3.1.4: Valuation of local agrifood products such as dates and durum is enhanced.	Training a women cooperative in Imilchil on value adding techniques to improve agrifood production (Couscous, and spaghetti).	ORMVAT, Cooperatives.										
	Training of 20 local producers on the transformation of date production (paste and syrup production).	ORMVAT, DRA Figuig.										
Output 3.1.5: Product benchmarking of labelled agro-biodiversity products.	Conducting a benchmarking exercise to assess market opportunities for each labelled product.	Marketing specialist, DRAs.										
	Based on the benchmarking exercise, training of local producers in developing action plans that will improve the competitiveness of agro-bio diverse products	Marketing specialist, DRAs.										
	Training local producers in developing sales contracts.	Marketing specialist, DRAs, ONCA.										
Output 3.1.6: Local producers are trained on seed conservation and participatory plant breeding techniques through demonstration plots.	Five training sessions (one in each site) on participatory plant breeding methods for organic products.	DRA, ONCA, ORMVAT										
	Preparation of guidelines on methodologies for seed conservation.	DRA , ONCA, ORMVAT										
	Collection of landraces and cultivars and pilot harvesting of local variaties of cereals, pies, lentils and chickpeas in Imilchil and Akka.	DRA, ORMVAT, INRA, ONCA, Cooperatives, local NGOs.										
	Participatory seed evaluation and selection in for distribution.	INRA, cooperatives, NGO, DRA, ORMVAT, ONCA										
Component 4: Project monitoring and evaluation.												
Output 4.1.1: System for systematic collection of field-based data to monitor project outcome indicators made operational.	Inception workshop	M&E specialist, Project Coordinator, PMCU.										

	Preparation and validation of the AWP/B.											
	Preparation and validation of the M&E plan.	M&E specialist, Project Coordinator PMCU.										
	Regular monitoring and reporting requirements (PPRs).	Project Coordinator PMCU.										
Output 4.1.2 : Final evaluation.	Evaluation.	Project Coordinator, PMCU, Evaluation expert, FAO.										
Produit 4.1.3 : Information dissemination	Preparation of technical reports on best practices and lessons learnt for dissemination.	Communications expert/web designer, Project Coordinator, PMCU, FAO.										
Project Management	Contracting of project management staff	FAOMOR										
	PSC bi-annual meetings	PSC Chairperson Project Coordinator PMCU										

APPENDIX 3: RESULTS BUDGET

OracleBudget.MSPM orocco.final.xlsx

Component 1*:* The enabling environment to support the conservation of agro biodiversity has been enhanced through targeting regulatory frameworks, local institution building and collection and storage of data	***Component 2:*** Reducing pressures on natural resources from competing land uses, to reverse land degradation trends in the Oases landscapes through the application of good agricultural practices and agro-ecology.	***Component 3:*** Mainstreaming of the biodivesity conservation and sustainable use into the local communities' strategies for economy diversification in Oases landscapes.	***Component 4***: Project monitoring and evaluation
Output 1.1:Databases and catalogues on local seed varieties including plant genetic resources are developed	**Output 2.1:** Sustainable land and water management practices targeting the reversion of land degradation trends implemented in five selected pilot sites in Oases systems.	**Output 3.1:** Enhanced local capacity for implementing existing labelled local Oases products in the five pilot sites. The labelling criteria will include sustainable production standards in view of biodiversity conservation	**Output 4.1:** System for systematic collection of field-based data to monitor project outcome indicators made operational
Output 1.2: A regulatory framework for the development of local seed varieties is established and the seed sector is strengthened	**Output 2.2:** Farmers are coached on flood control techniques and on measures against land degradation/desertification in the five pilot locations	**Output 3.2**: Applications are submitted to the competent authorities for labelling of local Oases products, on the distinctive signs of origin and quality of the food and agricultural products (cereals and apples in Imilchil, Assiane dates in Figuig and wool in Imilchil and Figuig).	**Output 4.2:**Final evaluation conducted
Output 1.3: Seed growers' cooperatives and seed growers' networks are established.	**Output 2.3:** Local producers are coached on conservation and water use efficiency practices and on hydro-agricultural development measures based on traditional irrigation systems.	**Output 3.3:** Agricultural products from local crop varieties are labelled organic	**Output 4.3:** Information dissemination
		Output 3.4: Valuation of local agrifood products such as dates and durum is enhanced.	
		Output 3.5: Product benchmarking of labelled agro-biodiversity products.	
		Output 3.6: Local producers are trained on seed conservation and participatory plant breeding techniques through demonstration plots	

BUDGET (GEF FINANCING)

Oracle code and description	Unit	No. of unit	Unit cost	Outputs - Component 1	Outputs - Component 2	Outputs - Component 3	Outputs - Component 4	PMC	Total GEF

		s		1.1	1.2	1.3	Total	2.1	2.2	2.3	Total	3.1	3.2	3.3	3.4	3.5	3.6	Total	4.1	4.2	4.3	Total		
5300 Salaries professionals																								
Finance and Operations Assistant (NAT)	month						0				0							0				0		
5300 Sub-total salaries professionals				0	0	0	0	0	0	0	0	0					0	0	0		0	0		
5570 Consultants																								
Project Coorindator	year	3	52,800	11,250	8,600	30,000	49,850	73,853		1,800	75,653						27,500	27,500	2,500		2,897	5,397	15,761	174,161
Operations and Administrations (TAP)	year	3	19,200								0							0				0	57,600	57,600
Agronomist	day	40	250					10,000			10,000							0				0		10,000
Agronomist	day	75	250					18,750			18,750							0				0		18,750
Hydrologist	day	140	250						35,000		35,000							0				0		35,000
soil erosion expert	day	50	250						12,500		12,500							0				0		12,500
Water management expert	day	190	250							47,500	47,500							0				0		47,500
Value chain development expert	day	45	250									6,500	2,500	750		1,500		11,250				0		11,250
M&E Specialist	day	30	250															0	7,500			7,500		7,500
Communication expert/web page designer	day	30	150															0			4,500	4,500		4,500
Drivers	day	450	50		400	2,000	2,400	1,697	2,400	4,000	8,097						12,000	12,000				0		22,497
Sub-total national Consultants				11,250	9,000	32,000	52,250	104,300	49,900	53,300	207,500	6,500	2,500	750	0	1,500	39,500	50,750	10,000		7,397	17,397	73,361	401,258
Water management expert	day	5	500				0		2,500		2,500							0				0		2,500
Palmville system expert	day	20	500				0		10,000		10,000							0				0		10,000
Marketing expert	day	8	300				0				0					2,400		2,400				0		2,400
Sub-total International Consultants				0	0	0	0	0	12,500	0	12,500	0	0	0	0	2,400	0	2,400	0		0	0	0	14,900

5570 Sub-total consultants				11,250	9,000	32,000	52,250	104,300	62,400	53,300	220,000	6,500	2,500	750	0	3,900	39,500	53,150	10,000		7,397	17,397	73,361	416,158
5650 Contracts																						0		
Palm grove rehabilitation activities (Output 1.1)	lumpsum	1	3,750					3,750			3,750							0				0		3,750
Seed inventory (output 1.1)	lumpsum	1	2,500	2,500			2,500				0							0				0		2,500
Seed regulatory framework (1.2)	lumpsum	1	1,000		1,000		1,000				0							0				0		1,000
Seed growers cooperatives and networks (1.3)	lumpsum	1	1,000			1,000	1,000				0							0				0		1,000
Training on phytotechniques for palm grove management (2.1)	lumpsum	1	4,500				0	4,500			4,500							0				0		4,500
Activities on SLM and agroecology (2.1)	lumpsum	1	6,000				0	6,000			6,000							0				0		6,000
Activities on flood control techniques (2.2)	lumpsum	1	32,000						32,000		32,000							0				0		32,000
Activities on improving soil erosion (2.2)	lumpsum	1	4,000						4,000		4,000							0				0		4,000
Rehabiliatation of water collection systems (2.3)	lumpsum	1	18,000				0			18,000	18,000							0				0		18,000
Activities on labelling of products (3.2)	lumpsum	1	300										300		1,500			1,800				0		1,800
Participatory Plant Breeding activities (3.6)	lumpsum	1	1,900														1,900	1,900				0		1,900
Final Evaluation	lumpsum	1	30,000															0		30,000		30,000		30,000
5650 Sub-total Contracts				2,500	1,000	1,000	4,500	14,250	36,000	18,000	68,250	0	300	0	1,500	0	1,900	3,700		30,000	0	30,000	0	72,750
5900 Travel																								

Palm grove rehabilitation activities (Output 2.1)	DSA	322	30					9,660			9,660							0				0		9,660
Seeds inventory (output 1.1)	DSA	150	30	4,500			4,500				0							0				0		4,500
Seed regulatory framework (1.2)	DSA	20	30		600		600				0							0				0		600
Seed growers cooperatives and networks (1.3)	DSA	175	30			5,250	5,250				0							0				0		5,250
Flood control (2.2)	DSA	420	30				0		12,600		12,600							0				0		12,600
Soil erosion (2.2)	DSA	200	30				0		6,000		6,000							0				0		6,000
Rehabiliation of khettaras (2.3)	DSA	270	30				0			8,100	8,100							0				0		8,100
Rehabiliation of water diversion systems (2.3)	DSA	55	30				0			1,650	1,650							0				0		1,650
Support to implementation of labelled products (3.1)	DSA	8	150									750		450				1,200				0		1,200
Support to benchmarking of labelled products (3.5)	DSA		7,500													7,500		7,500				0		7,500
Support to participatory plant breeding	DSA	450	30														13,500	13,500				0		13,500
5900 Sub-total travel				4,500	600	5,250	10,350	9,660	18,600	9,750	38,010	750	0	450	0	7,500	13,500	22,200	0		0	0	0	20,010
5023 Training																								
Seminars on seed inventory (1.1)	day	2	1,500	3,000			3,000				0							0				0		3,000
Trainings on seed inventory (1.1)	day	3	500	1,500			1,500				0							0				0		1,500
Seminar on regulatory framework (1.2)	day	2	1,500		3,000		3,000				0							0				0		3,000

Training on regulatory framework (1.2)	day	4	500		2,000		2,000				0							0				0		2,000
Seminar on seed growers cooperatives and networks (1.3)	day	6	1,500			9,000	9,000				0							0				0		9,000
Training on seed growers cooperatovies and networks (3.3)	day	20	500			10,000	10,000				0							0				0		10,000
Training on SLM and agroecology (2.1)	day	21	500				0	10,500			10,500							0				0		10,500
Seminars on SLM and agroecology practices (2.1)	day	5	1,500				0	7,500			7,500							0				0		7,500
Seminars on flood control techniques (2.2)	day	6	1,500				0		9,000		9,000							0				0		9,000
Trainings on flood control techniques (2.2)	day	6	500				0		3,000		3,000							0				0		3,000
Seminars on erosion control methods	day	1	1,500				0		1,500		1,500							0				0		1,500
Trainings on erosion control methods (2.2)	day	3	500				0		1,500		1,500							0				0		1,500
Seminar on rehabilitation of khettaras (2.3)	day	1	1,500				0			1,500	1,500							0				0		1,500
Trainings on rehabilitation of khettaras	day	1	500				0			500	500							0				0		500
Seminar on rehabiliation and maintenance of water diversion systems	day	1	1,500				0			1,500	1,500							0				0		1,500
Trainings on rehabilitation and maintenance	day	1	500				0			500	500							0				0		500

of water diversion systems (2.3)																								
Trainings on implementation of labelled products (3.1)	day	3	500				0				0	1,000						1,000				0		1,000
Seminar on labellling of agricultaral products (3.2)	day	1	2,500										2,500					2,500						2,500
Seminars on oragnic labelling (3.3)	day	3	250											750				750						750
Trainings on organic labelling (3.3)	day	2	500											1,000				1,000						1,000
Seminars on participatory plant breeding (3.6)	day	14	1,500														21,000	21,000						21,000
Training on participatory plant breeding	day	60	500														30,000	30,000						30,000
5023 Sub-total training				4,500	5,000	19,000	28,500	18,000	15,000	4,000	37,000	1,000	2,500	1,750	0	0	51,000	56,250	0		0	0	0	66,500
6000 Expendable procurement																								
Palm grove rehabiliation equipment (Ouput 1.1)	lump sum	14	1,000.0	0				14,000			14,000							0				0		14,000
Miscellaneous supplies for trainings on seed inventory (1.1)	lump sum	3	1,000	3,000			3,000				0	0						0				0		3,000
Miscellaneous supplies for trainings on regulatory framework (1.2)	lumpsum	2	1,000.0		2,000		2,000				0							0				0		2,000
Miscellaneous supplies for trainings on seed growers coopertives and networks(1.3)	lumpsum	4	1,000			4,000	4,000				0							0				0		4,000
Miscellaneous supplies for training on	lumpsum	4	1,000				0	4,000			4,000							0				0		4,000

SLM and agroecology (2.1)																								
Miscellaneous supplies for flood control techniques (2.1)	lumpsum	7	1,000						7,000		7,000							0				0		7,000
Miscellaneous supplies for erosion control methods (2.2)	lumpsum	4	1,000						4,000		4,000							0				0		4,000
Miscellaneous supplies for rehabilitation of water systems	lumpsum	6	1,000							6,000	6,000							0				0		6,000
Supplies for rehabilitation of water diversion systems (seguias)	lumpsum	6	1,000							6,000	6,000							0				0		6,000
Miscellaneous supplies for participatory plant breeding	lupsum	7	1,000														7,000	7,000						7,000
6000 Sub-total expendable procurement				3,000	2,000	4,000	9,000	18,000	11,000	12,000	41,000	0	0	0	0	0	7,000	7,000	0		0	0		50,000
6100 Non-expendable procurement																								
6100 Sub-total non-expendable procurement				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
6300 GOE budget																								
							0				0							0				0	0	0
6300 Sub-total GOE budget				0	0	0	0	0	0	0	0	0					0	0	0		0	0	0	0
TOTAL				25,750	17,600	61,250	104,600	164,210	143,000	97,050	404,260	8,250	5,300	2,950	1,500	11,400	112,900	142,300	10,000	30,000	7,397	47,397	73,361	625,418
SUBTOTAL Comp 1			104,600	13.6 %																				
SUBTOTAL Comp 2			404,260	52.4 %																				
SUBTOTAL Comp 3			142,300	18.4 %																				
SUBTOTAL Comp 4			47,397	6.1%																				

SUBTOTAL Project Management			73,361	9.5%
TOTAL GEF			771,918	100.0 %

APPENDIX 4: RISK MATRIX

Please use format from the "FAO Guide to the Project Cycle"

APPENDIX 5: PROCUREMENT PLAN

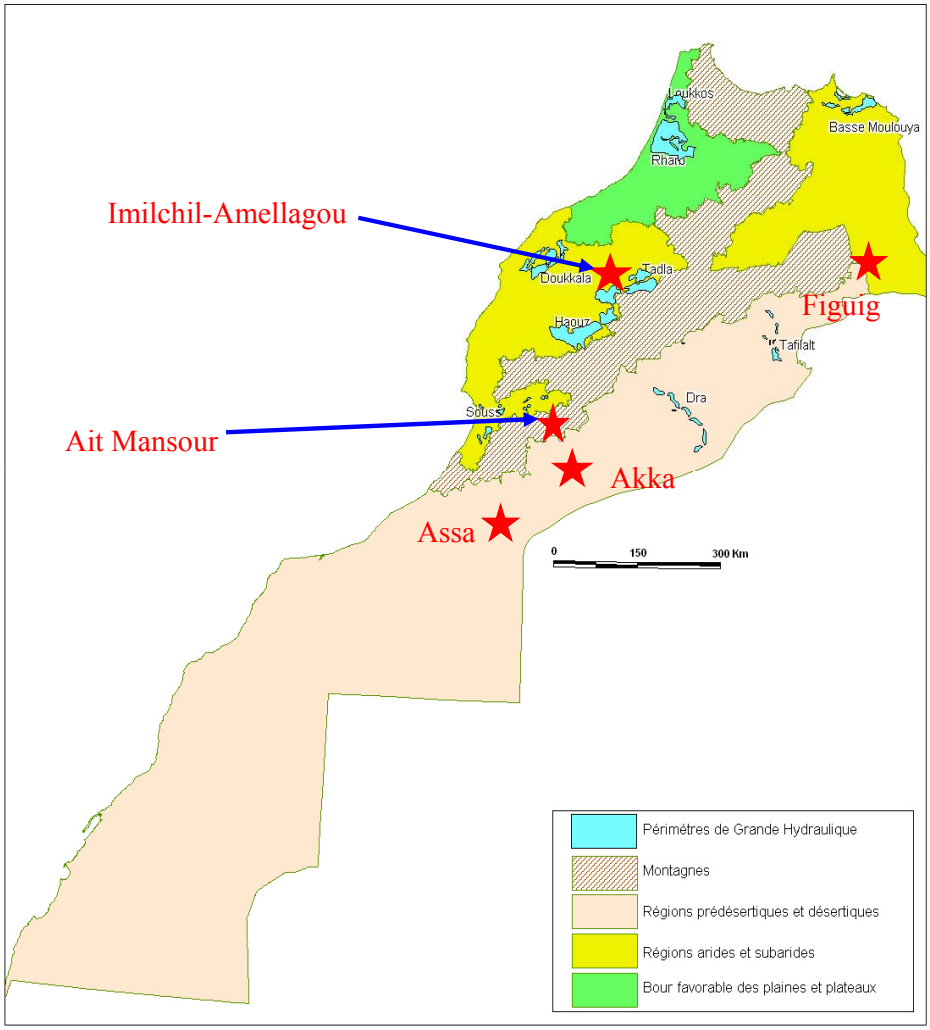
Please use format from the "FAO Guide to the Project Cycle"

APPENDIX 6: TERMS OF REFERENCE (TORS)

Position Titles	Unit	N. of units	Unit Cost	Tasks to be performed
For Project Management				
Local				
Project Coordinator	Year	3	52,800	Overall project management, interface with local counterparts, responsible for all project deliverables, reporting. The project coordinator will also have technical responsibility over Component 1 activities.
Operations and Admin	Year	3	19,200	Administrative services, office operations, procurement and financial reporting
Travel: Travel will be required to coordinate with project local stakeholders in the RPMCs (in the pilot areas targeted by the project). There will be trainings in the field and needs for the Rabat based team to attend and coordinate activities in the targeted regions. There will also be times when the Project staff in the field that are being paid by project partners, will be needed to assist in activities in Rabat. The project will be requested to cover this travel as well.				
For Technical Assistance				
Local				
Agronomist, specialised in palm grove management	Day	40	250	Providing targeted trainings on sustainable management of palm grove systems in the five project sites.
Agronomist, specialized in organic production	Day	75	250	Providing targeted trainings on organic production systems, organic labelling, sustainable agricultural practices and agro-ecology in the five project sites.
Soil erosion expert	Day	50	250	Provide training on SLM measures to improve soil fertility.
Hydrologist	Day	140	250	To undertake hydrological studies for flood control strategies and provide training on flood control techniques.

Water Management expert	Day	190	250	Providing training on sustainable water management techniques based on traditional knowledge.
Value Chain expert	Day	45	250	Leading project team in collecting all required information for value chain analysis and labelling steps and procedures, training, presentations and reporting.
Communications expert	Day	30	150	Setting up the project web page and assisting project team with communication strategy development, tools creation and networking activities.
M&E expert	Day	30	250	Setting up the project M&E system.
International				
Marketing Specialist	Day	8	300	Conducting the Benchmarking exercise for labelled products and providing trainings in marketing and market access when required by the project.
Palmivelle system Specialist	Day	20	500	Providing targeting training on the Palmivelle system on re-vegetating sandy areas in Akka and Figuig and coaching on preventive measures against salinity formation.
Water Management Expert	day	5	500	Provide assistance in conducting hydrological studies for flood control and disaster risk prevention.
Travel: International consultants will be required to travel to Morocco and spend their assignment in-country. Travel within Morocco when in assignment will be paid by the project. Local consultants hired for technical assistance will need to travel to the field most of the time to implement trainings or collect necessary information. The project will cover all project related travel costs.				

APPENDIX 7: PROJECT SITES MAP



APPENDIX 8: DESCRIPTION OF PROJECT SITES.

Ait Mansour

Le site Ait Mansour est situé sur le flanc Sud des montagnes de l'Anti Atlas, à 30 km de la ville de Tafraout. il renferme une population de 2000 habitants répartie sur 14 villages. L'oasis suit le lit du fleuve Oued Issi, sur une distance de 14km et sur une largeur de 100m en moyenne, soit une superficie de près de 140ha. La végétation est à dominance arboricole, notamment le palmier dattier, l'olivier, l'amandier, et autres de faible importance. Les cultures sont composées selon leur importance par la luzerne, ce qui reflète la pratique d'élevage sédentaire, les cultures maraichères (carottes, navet, oignon, haricot, pomme de terre, tomate, et autres). L'irrigation est assurée par un ensemble de 14 sources ayant un débit variable de 1 à 5l/s, totalisant un débit d'environ 50l/s. Par ailleurs, le site renferme 3 ouvrages de captage et de dérivation des eaux de crue. Le réseau d'irrigation est composé de 5,4 km des Khettara et 36km des canaux d'irrigation (Seguia) dont 24km sont bétonnés

Biodiversité du site

Espèces végétales

La zone du site compte 150 espèces végétales dont 31 espèces endémiques appartenant à 12 familles, les plus représentées sont *Apiaceae* par 3espèces, *Fabaceae* par 7 espèces, les *Lamiaceae*par 3 espèces et *Asteraceae* par 8 espèces. Ces espèces sont listées ci-dessous :

Apiaceae : *Bupleurumatlanticumsspatlanticum, Bupleurumdumosum, Daucus tenuisectus*
Chenopodiacea : *Cistuscreticusssptrabutii, Halimiumantiatlanticum*
Crassulaceae : *Sedum jahandiezii*
Fabaceae : *Adenocarpusanagyrifolium, Argylobiumzanoniisspfallax , Lotus maroccanus, Lotus pseudocreticus, Onabrychis humilis sspjahandiezii, Telinesegonnei, Vicia murbeckii*
Geraniaceae : *Erodiumjahandiezianum*
Lamiaceae : *Lavandularejdalii, Sideritisochrolencassptafraoutiana, Teuntricumwerneri*
Sapotaceae : *Arganiaspinosa*
Zygophillaceae : *Fagoniazilloides*
Asteraceae : *Artemesiamesatlantica, Cheirolophusbenoistii, Cheliadenusantiatlanticus, Cladanthusflahaultii, Phagnalonlatifolium, Pulicariagalandulosa, Rhaponticumcossonianum, Rhodantemumkesticum*
Alliacea: *Allium paniculatumsspantiatlanticum*
Amaryllidaceae: *Narcissusperoccidentalis*
Juncaceae : *Luzula atlanticasspatlantica*

Biodiversité agricole

Les terres cultivables très limitées sont situées dans les dépressions (vallées) entre les chaînes de montagne. Les conditions édapho-climatique de ces vallées favorisent le développement de l'arboriculture fruitière en particulier le palmier dattier, l'olivier, l'amandier, le figuier et autres. En ce qui concerne les cultures basses, la céréaliculture est dominée par l'orge, on trouve aussi les cultures fourragères et maraîchères. Toutes ces cultures annuelles sont intercalaires avec les arbres.

On y trouve une diversité exceptionnelle des variétés locales de toutes les espèces arboricoles cultivées. En tout, 60 variétés cultivées sont reparties sur 35 espèces (Tableau 1). La richesse en agrobiodiversité de la zone se manifeste à travers l'importance du matériel d'origine locale dominant de 100% pour le palmier dattier, 70% chez les céréales, 90% pour les légumineuses, 80% chez les cultures maraîchères et de 86% chez les cultures fruitières.

Le palmier dattier compte une dizaines de variétés dont deux sont endémiques de cette région à savoir Boukemoud et Bidoubane.

Tableau 1: Espèces et variétés cultivées dans le site Ait Mansour

Culture	Nombre d'espèces cultivées	Nombre de variétés utilisées
Céréales	4	7
Légumineuses	7	15
Maraichères	11	13
Arboriculture	13	22
Total	35	60

Akka

La région d'Akka est située dans le Sud-Est de l'Anti-Atlas. La région présente une homogénéité physique avec un paysage oasien dans les endroits où le potentiel hydrique est facilement exploitable, et un autre désertique dans les zones sahariennes et rocailleuses. Le climat est de type saharien continental, la température varie entre 49°C durant la saison d'été et 12°C en hiver. La moyenne des précipitations enregistrées dépasse rarement 100 mm/an. Le potentiel hydrique est constitué des rivières et des eaux souterraines, les crues constituent une importante ressource pour l'agriculture vivrière et l'enrichissement de la nappe phréatique. Malgré l'adversité des conditions climatiques, le secteur agricole joue un rôle déterminant dans le tissu économique local, il occupe environ 80 % de la population active. Le secteur est aussi dominé par une activité pastorale issue d'une vocation traditionnelle

enracinée dans le mode de vie nomade en raison de la disponibilité des parcours et de la pratique de la transhumance.

Biodiversité du site

Espèces végétales
Les principales formations végétales identifiées dans le site d'Akkaa sont diversifiées. Il s'agit notamment de :

- la formation relique d'Arganier et d'Acacia avec une strate basse dominée par *Hamada scoparia* et *Artemisia herba-alba,*
- la formation dominée par des chenaux à base de diverses espèces notamment *Atriplexhalimus, Launeaarborexen, Zygophyllum gaetulum, Salsolalongifolia, SuedaMonodiana et PeganumHarmala,*
- la formation à base d'*Euphorbiabeaumeruene*, *ZillaMacroptera*,
- la formation de chenaux, dominée par *Atriplexhalimus, Tamarix gallica*.
- la formation à base d'armoise blanche,
- la formation à base de *Withaniaadpresa, Launeaarboresens* et *Atriplexhalimus*.

La flore est constituée des espèces typiquement sahariennes autochtones ayant un rôle écologique notamment : *Acacia raddiana, Acacia ehrenbergiana, Tamarix aphylla, Balanites aegyptiaca, Genevrier rouge, Arganier, Maeriacrassifolia*. Toutes ces espèces ont une importance primordiale pour les populations riveraines au niveau de l'approvisionnement en bois de feu, en fourrage et en plantes médicinales. La région d'Akka abrite une flore très riche composée de plus de 165 espèces végétales dont une trentaine est endémique. Nous citons les suivantes :

***Apiaceae** : Bupleurum album, Foeniculumvulgaresspsubinodorum, Stoibraxinvolucratum*
***Brassicaceae** : Diplotaxisberthautii, Matthiolalongipetalasspviridis*
***Chenopodiaceae** : Traganopsisglomerata*
***Fabaceae** :Genistaifniensis, Lotus simoneae, Onabrychishumilissspjahandiezii, Ononisnatrixssparganietorum*
***Sapotaceae**: Arganiaspinosa*
***Asteraceae**: Artemesiamesatlantica, Artemesiahuguetii, Asteriscuspinifolius, Asteriscusimbricatus, Andopappusmarcocarpusmaroccanus, Petziahesperidum*
***Hyacinthaceae**: Dipcadi panousei, Drimia aurantiacus, Drimia ollivieri.*

Le Haut-Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification (HCEFLCD) restaure annuellement dans la région une superficie moyenne de 150 ha de *Accaciaraddiana*. La mise en défense de ces parcelles a permis aux espèces inféodées à cette formation végétale

de régénérer, parmi lesquelles les espèces endémiques *Artemesiamesatlantica et Artemesiahuguetii*ont été observées en train de reconquérir leur espace naturel.

Espèces animales

Akka abrite une faune sauvage, riche et diversifiée. Elle est composé de 147 espèces dont 9 sont endémiques et 41 sont menacées de disparition, d'autres sont déjà disparues (guépard, lynx, autruche). La distribution des espèces endémiques est présentée dans le Tableau 2.

Tableau 2 : Espèces animales, endémiques et menacées d'Akka

Animaux	Nombre d'espèces	Espèces endémiques	Liste rouge
Oiseaux	66	3	22
Mammifères	44	3	12
Amphibiens et Reptiles	37	3	7
Total	147	9	41

Les espèces endémiques sont reparties comme suit :

Oiseaux :*Chlamydotisundulata, Phoenicurusmoussieriet Sylvia deserticola*
Mammifères:*Elephantilusrozeti*,*Crocidurawhitakeri, et Atlantoxerusgetulus*
Amphibiens et Reptiles :*Bufo brongersmai, Tarentolaboehmei, Tropiocolotestripolitanus*

Espèces cultivées

Le site d'Akka est constitué des oasis à base de palmier dattier. Cet écosystème est basé sur une association harmonieuse de cultures et d'élevage. Les systèmes de cultures pratiqués sont organisés en général autour de l'arbre de providence, le palmier dattier. Ce dernier, en assurant la protection contre l'ardeur du soleil, constitue le pivot du système oasien, au-dessous duquel d'autres arbres fruitiers et cultures sous-jacentes sont pratiqués (Tableau 3). Le système oasien peut se présenter en trois étages de végétation, qui se protègent les unes des autres contre les influences du désert.

Les espèces cultivées en state basse ou la troisième strate de végétation, concernent la céréaliculture, la luzerne et les espèces maraîchères. D'autres espèces sont cultivées dans cette strate, le henné et le safran. Les espèces fruitières occupent la deuxième strate de végétation dans l'écosystème oasien. On y trouve, dans l'ordre d'importance, olivier, amandier, figuier, vigne, abricotier, grenadier, prunier et pêcher. En dehors du blé tendre, toutes ces espèces sont représentées par des variétés locales spécifiques à ces régions, ayant un haut niveau de diversité. D'autres espèces sont exploitées en végétation naturelle telle le cactus, l'arganier et le câprier.

Tableau 3 : Espèces et variétés cultivées dans le site d'Akka

Culture	Nombre d'espèces cultivées	Nombre de variétés/culture
Céréales	4	5
Légumineuses	7	10
Maraichères	13	20
fourrages	2	2
Henné	1	1
Safran	1	1
Arboricultures	11	28
Condimentaires	8	8
Total	47	75

Le palmier dattier constitue l'espèce arboricole principale d'Akka et compte environ 15000 pieds repartis sur 13 variétés toutes locales. La variété noble et endémique à Akka est Bouittoub. Celle-ci est labellisée comme indication géographique.

Les variétés les plus présentes sont Boufeggous, Jihel, le Bousekri et Sayers. Ces derniers sont en fait des hybrides comportant plusieurs clones comme partout dans les autres oasis. A l'échelle de l'ensemble de la zone, les Sayers sont les plus dominants avec près de 37,5%. Les autres variétés représentent le reste : Boufeggous avec 24%, Bouzekri avec 7,5%, Jihel avec 12%, Bouittoub avec 11,5%, Admam 3% et autres 4,5%.

Assa

Le site d'Assa est situé dans la région du Sud Est, à une cinquantaine de kilomètre de la frontière avec la l'Algérie. Cette région est répartie en deux grandes zones naturelles : subsaharienne au Nord et Nord Est et saharienne au Sud et Sud-Ouest. On distingue trois composantes bien différenciées, la première est une zone de pâturage qui domine. La deuxième est une zone de culture avec les eaux de crues d'Oued Draa. La troisième composante du paysage est constituée des oasis. Le climat de la zone est de type présaharien, la pluviométrie moyenne annuelle est de l'ordre de 100 mm, caractérisée par des variations intenses intra et interannuelles. La saison pluvieuse ne dure que quelques jours (15 jours). La température moyenne maximale est de 49°C en juillet-août, la température moyenne minimale est de 4°C en décembre-janvier. Les vents sont très fréquents et soufflent pendant toutes les saisons provoquant des accumulations sableuses.

Biodiversité du site

Espèces végétales

Le cortège floristique de cette zone compte plus de 134 espèces végétales réparties sur 41 familles. Plusieurs espèces sont devenues rares et menacées de disparition et d'autres présentant un grand intérêt en biodiversité par leur statut d'endémiques à l'échelle locale ou nationale. Ces espèces endémiques sont présentées par familles comme suit:

Apiaceae : Stoibraxinvolucratum
Brassicacea : Matthiolalongipetalassp viridis
Boragincaea :Echiumhumilesspcaespitosum, Echiumhumilesspcaespitosum , Heliotropiumantiatlanticum

Chenopodiacea :Traganopsisglomerata
Fabaceae :Genistaifniensis, Lotus simoneae , Ononisnatrixsparganietorum
Lamiacrae :Dracocephalumrenati
Asteraceae: Artemesiahuguetii, Asteriscuspinifolius, Asteriscusimbricatus ,Andopappusmarcocarpusmaroccanus, Petziahesperidum
Hyacinthaceae : Dipcadi panousei, Drimia aurantiacus, Drimia ollivieri.

Espèces animales
La faune du site Assa compte 144 espèces animales dont 9 sont endémiques à la région. Bien que diversifiée, cette faune est menacée en grande partie. La distribution des espèces endémiques est présentée dans le Tableau 4.

Tableau 4 : Espèces animales endémiques et menacées de la région d'Assa.

Animaux	Nombre d'espèces	Espèces endémiques	Liste rouge
Oiseaux	102	3	22
Mammifères	44	3	12
Amphibiens et Reptiles	37	3	7
Total	143	9	41

Les espèces endémiques sont reparties comme suit :
Oiseaux :*Chlamydotisundulata, Phoenicurusmoussieri,Sylviadeserticola*
Mammifères *: Elephantilusrozeti, Crocidurawhitakeri, Atlantoxerusgetulus*
Reptiles : *Bufo brongersmai, Tarentolaboehmei, Tropiocolotestripolitanus*

Espèces cultivées
L'agro biodiversité locale dans ce site est diversifiée. On y trouve une diversité des cultures arboricoles, céréalières, maraîchères, fourragères, légumineuses et le henné. En tout, 42

variétés cultivées sont reparties sur 36 espèces (Tableau 5). La richesse en agro biodiversité de la zone se manifeste à travers l'importance du matériel d'origine local dominant à 100% pour le palmier dattier, 80% chez les céréales et légumineuses, 81,8% chez les cultures maraîchères et de 100% chez les cultures fruitières.

La culture de henné (cosmétique) est bien développée dans le site et contribue substantiellement aux revenus des ménages. Elle représente une filière importante pour ce site.

Tableau.5 : Espèces et variétés cultivées dans le site d'Assa

Culture	Nombre d'espèces cultivées	Nombre de variétés/culture
Céréales	3	5
Légumineuses	7	7
Maraichères	13	17
fourrages	2	2
Arboricultures	10	10
Henné	1	1
Total	36	42

Assa est une zone d'élevage extensif conduit sur parcours ou en étable. Au sein des oasis, on retrouve l'élevage sédentaire, constitué de petits troupeaux généralement de race D'man et de vaches laitières tout récemment. Ce type d'élevage est bien intégré avec l'agriculture, qui utilise le fumier et les sous-produits des cultures sont valorisés comme fourrage. Cet élevage est basé sur la culture de luzerne, le sorgho et la paille des céréales. Sur les parcours, c'est l'élevage de troupeaux transhumants de taille plus ou moins importante, d'ovins, caprins, et camelins.

Figuig

La zone de Figuig est située à l'Est du Maroc sur la frontière avec l'Algérie. Elle est constituée par deux types de reliefs: les hauts plateaux et la chaîne montagneuse de l'extrémité Est du Haut Atlas. Le climat prédominant dans la province de Figuig est semi-aride et caractérisé par le froid en hiver et la chaleur en été avec des vents fréquents le long de l'année. De même, il connaît de faibles précipitations généralement mal réparties dans le temps et dans l'espace. La pluviométrie moyenne annuelle oscille entre 25 mm en années de sécheresse et 150 mm en années normales.

Biodiversité du site

Espèces végétales

La flore locale compte 258 espèces, réparties sur 43 familles. Huit grandes familles constituent le fonds botanique: Asteraceae (54%), Brassicaceae (31%), Poaceae (21%), Caryophyllaceae (19%), Cistaceae (16%), Lamiceae (14%) et Fabaceae (17%). On compte environ une trentaine d'espèces endémiques, surtout des endémiques algéro-marocaines, avec quelques rares ibériques témoins reculés de l'influence méditerranéenne. Treize taxons de la flore locale peuvent être considérés comme rares.

Les espèces endémiques :

Boragincaea : Borago trabutii, Echium petiolatum
Brassicacea: Erucaria pinnana ssp pinna, Erucatrum rifanun
Crassulaceae : Kalanchoe laciniata ssp faustii
Euphorbiceae : Euphorbia megalatlantica
Fabaceae : Accacia gummifera, Astragalus reesei
Lamiacae : Lavandula mairei, Lavandula tenuisecta, Nepeta stachyoides
Asteraceae : Echinops spinosisimus, Hertia maroccana, Calendula maroccana

Les espèces animales

La faune de la région de Figuig compte 239 espèces animales dont 14 sont endémiques à la région. Bien qu'elle soit diversifiée, cette faune est menacée en grande partie. La distribution des espèces endémiques est présentée dans le Tableau 6.

Tableau 6 : Espèces animales, endémiques et menacées de Figuig

Animaux	Nombre d'espèces	Espèces endémiques	Liste rouge
Oiseaux	171	3	10
Mammifères	43	5	8
Amphibiens et Reptiles	25	6	6
Total	239	14	24

Les espèces endémiques sont reparties comme suit :

Oiseaux :*Chersophilusduponti, Phoenicurusmoussieri, Sylvia nana deserti*
Mammifères :*Gazellacuvieri, Atlantoxerusgetulus, Ctenodactylusgundi, Elephantilusrozeti, Gerbillusocciduus*

Amphibiens et Reptiles :*Bufo brongersmai, Ptyodactylusoudrii, Acanthodactylusmaculatus, Sphenopsboulengeri, Eumecesalgeriensis, Uromastyxacanthinura*

Biodiversité agricole

L'agrobiodiversité locale est constituée essentiellement des céréales, des légumineuses, des cultures maraîchères, et quelques espèces fruitières (amandier, olivier, figuiers autres) dominées par le palmier dattier. Celui-ci est représenté par une vingtaine de variétés locales, celles endémiques de Figuig sont Aziza, Assian et Afroukh N'tijent. La variété Aziza est labélisée produit du terroir. En tout, 75 variétés cultivées sont reparties sur 45 espèces (Tableau 7). Les variétés locales utilisées sont présentes à 100% pour le palmier dattier, à plus de 80% pour les cultures maraichères, les légumineuses et l'arboriculture et moins de 40% pour les céréales.

Tableau 7 : Espèces et variétés cultivées à Figuig

Culture	Nombre d'espèces cultivées	Nombre de variétés utilisées
Céréales	4	10
Légumineuses	7	7
Fourrages	5	5
Maraichères	9	13
Arboriculture	11	31
Condiments	9	9
Total	45	75

L'élevage

L'élevage est de type extensif et constitue l'assise économique des revenus d'une proportion importante de la population. Cette activité est favorisée par l'existence d'une vaste étendue de terrain de parcours, couvert en majeur partie par l'alfa et l'armoise, et d'un cheptel de race locale ovine Beni-Guil rustique et adaptée aux conditions du milieu. L'exploitation des parcours avoisinants, a des conséquences directes et indirectes sur l'oasis qui touchent aux ressources hydriques et à la conservation des sols.

Imilchil

Le site d'Imilchil-Amellago est situé dans le parc national du Haut Atlas Oriental à une altitude de 2000m. Grace à sa riche biodiversité, le site fait partie aussi de la zone A de la

Réserve de Biosphère des Oasis du Sud du Maroc. Il comprend des oasis froides, vallées, lacs et zones humides et les pâturages semi-désertiques. Le site comprend le Cercle d'Imilchil qui se compose de cinq municipalités rurales, et est administrativement fait partie de la province de Midelt et Amellagou relève de la province d'Errachidia. La population est d'environ 39.000 habitants, répartis sur 6255 ménages. L'agriculture et l'élevage occupent 65% de la population active. L'agro biodiversité locale dans ce site est très diversifiée. On y trouve une diversité exceptionnelle des cultures arboricoles, céréalières, maraîchères, fourragères et d'autres espèces aromatiques, tinctoriales et médicinales.

Biodiversité du site

Espèces végétales

La zone du site comprend 139 espèces végétales dont 56 espèces endémiques. Nous citons entre autres les :

Apiaceae : *Bupleurum album, Bupleurumatlanticumsspaiouense, Carumproliferum, Bupleurumbenoistii, Laserpitiumemillianum,*
Brassicacea : *Arabishumbertii, Drabahederifoliasspcossoniana, Drabahederifoliasspcossoniana, Erucatrumrifanun, Sisymbriummaurum, Vella anremirica*
Lamiaceae : *Dracocephalum renati,*
Asteraceae : *Artemesia mesatlantica, Rhodantemum mesatlanticum, Anvillea radiate, Ormenis scariosa*
Alliacea: *Allium valdecallosum.*

Espèces animales

La faune du site Imilchil renferme 144 espèces animales dont 16 sont endémiques à la région. Bien que diversifiée, cette faune est menacée en grande partie**.** La distribution des espèces endémiques est présentée dans le Tableau 8.

Tableau 8 : Espèces animales, endémiques et menacées du site Imilchil-Amellago.

Animaux	Nombre d'espèces	Espèces endémiques	Liste rouge
Oiseaux	83	4	2
Mammifères	27	4	9
Amphibiens et Reptiles	34	6	1
Poissons	4	1	-
Total	144	15	12

Les espèces endémiques sont reparties comme suit :

Oiseaux :*Chlamydotisundulata, Picusvaillatii,* Sylvia deserticola, *Phoenicurusmoussieri*
Mammifères :*Elephantilusrozeti, Atlantoxerusgetulusz, Gazellacuvieri, Ammotrguslervia*
Reptiles : *Bufo brongersmai, Quedenfeltiamoerens, QuedenfeltiaTarachyblepharus, Lacertaandreanszkyi, Chalcidesmontanus, Viperamonticola*
Poissons : *Barbus Lepineyi*

Biodiversité agricole

L'agro biodiversité locale dans ce site est très diversifiée. On y trouve une diversité exceptionnelle des cultures arboricoles, céréalières, maraîchères, fourragères et d'autres espèces aromatiques, tinctoriales et médicinales. En tout, 105 variétés cultivées sont reparties sur 53 espèces (Tableau 9). La richesse en agrobiodiversité de la zone se manifeste à travers l'importance du matériel d'origine local dominant de 63,3% chez les céréales et légumineuses, 81,8% chez les cultures maraîchères et condiments et de 86,6% chez les cultures fruitières.

Tableau 9: Espèces et variétés cultivées dans le site d'Imilchil-Amellago

Culture	Nombre d'espèces cultivées	Nombre de variétés utilisées
Céréales	7	14
Légumineuses	7	25
Maraichères	11	20
Arboriculture	13	31
Espèces ligneuses	6	6
Condiments	9	9
Total	53	105

APPENDIX 9: ENVIRONMENTAL AND SOCIAL REVIEW FORM (ESRF)

ENVIRONMENTAL AND SOCIAL REVIEW FORM

PROJECT NAME: Conservation of biodiversity and mitigation of land degradation through adaptive management of agricultural heritage

Project description: (approximately 500 words or less)

Morocco is well known for its rich plant and animal biodiversity records in recent years. particularly at the Atlas Mountains; a gradual loss of its natural wealth. Nearly 25% of plant species are threatened and 600 species have reached the threshold of non-renewal. ie in the process of disappearing. and more pressure on natural resources significant increase. The causes of this are many and nonbalanced relate to overgrazing. over-exploitation. increased urbanization. agricultural pollution and the introduction of alien species to ecosystems. efforts have been made through government initiatives to respond to environmental challenges. but the efforts are more than needed to meet the challenges of sustainable development and the conservation of biodiversity. Proposed GEF project is a joint effort INRA. Ministry of Agriculture and its agencies and other national and international partners such as FAO to work together to improve the living conditions of vulnerable rural populations in the oasis. the oasis systems were chosen (Imelchil-Amellagou. Ait Mansour and agro ecological pre-Saharan zones (Figuig. Assa and Akka). A holistic and integrated approach has been adopted to improve the sustainable management of ecosystems and natural resources. strengthening institutional linkages for better coordination to allow the conservation of irrigation systems ancestral and water management. good agricultural practices and livestock and strengthening communities costumers participatory management of resources supporting natural resources. Improving the health and fertility of the soil and the promotion of sustainable agricultural practices. through the FAO global projects such as the LADA-WOCAT GIAHS for improved sustainable land management. project contributes to food security the sustainability of oasis systems and preservation of biodiversity and natural resources.

CERTIFICATION

Project Category C	Yes	No
I affirm that I have performed an environmental review of this project and certify that the project conforms to the pre approved list of projects excluded from environmental assessment and that the project will have minimal or no adverse environmental or social impacts. No further analysis is required.	Yes	

Title, name and signature of project leader:

Abdelwahab Belloum Land & Water Officer

Date: 01/20/2015