

# CBA Programme MOROCCO

## Project Proposal Complete Form

### SUMMARY PRESENTATION OF THE PROJECT

#### 1. Project Title

Strengthening the TARMGUISTE oasis ecosystem's resiliency to the impacts of climate change and improving the local community's capacity to adapt to reduced water resources and soil degradation.

#### 2. Project Site

TARMGUISTE Oasis, Rural Commune of Asrir, Province of Guelmim, MOROCCO

#### 3. Project Leader

**Association Espace Rural Tarmguiste (Tarmguiste rural area association)**

Oasis de Tarmguiste, CR Asrir

Province de Guelmim

Maroc

Tel. + 212 6 66 92 20 42

*Community based association created in 1998; the Espace Rural has been working to save the Tarmguiste oasis through social, economic and environmental development activities.*

#### 4. Project Goal

Build the Tarmguiste community's capacity to adapt to climate change related risks, including variability (particularly fewer water resources caused by a rise in temperatures along with reduced and unstable rainfall), through improved water management, development of the agroforestry system and the institution of a participative dialogue policy at the local level.

#### 5. Official Representative

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#### 6. Partner Organizations

**The Southern Oasis Programme (SOP)**

*(Agence pour la Promotion et le Développement Economique et social des Provinces du Sud du Royaume / United Nations Development Programme)*

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**Community-Based Adaptation Programme (CBA-Morocco)**

*(United Nations Development Programme – Global Environment Facility – United Nations Volunteers – The Global Environment Facility's Small Grants Programme)*

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**7. Date of Launch**

July 2010

**8. Project Duration**

18 months

**9. Project Total Cost**

1,067,542 MAD / \$122,284 US (dollar rate – end of May 2010)

**10. Amount Solicited from the CBA Programme**

415,422 MAD / \$47586 US (dollar rate – en of May 2010)

**11. Short Description of the Project**

The Oasis of Tarmguiste (Rural commune of Asrir, Province of Guelmim), is among the most vulnerable and oases in Morocco and the most affected by desertification and rural migration. The community today is made up only of about thirty homes (approximately 100 inhabitants), as opposed to 100 homes in the 1960s. This massive depopulation results mainly from the deterioration of local living conditions, including decreasing water resources, which are essential for an oasis' survival, and the lack of economic opportunities for residents.

Southern Morocco's oasis ecosystems, including that of Tarmguiste, rely on the management of the scarce water and seasonal variability of water resources. The climate change noted since the end of the 1970s and its expected increase has already had an impact and will increasingly harm the delicate balance that allows the oasis ecosystem to function, regenerate and nourish its inhabitants. The local farming, food-producing economy, which depends on the oasis' natural resources, is strongly affected by climate variations, and therefore very sensitive to the impacts of climate change. Oasis agricultural productivity has decreased because of the degradation of the conditions favorable for farming (increasing shortage and poor management of water, soil impoverishment), thus leading to the community's pauperization. Yet oases represent a vegetation and natural climate barrier against the advance of the desert. Their deterioration and gradual abandonment of the palm groves will make it difficult to fight against desertification.

The project aims to increase the Tarmguiste oasis ecosystem's resiliency toward the impacts of climate change, particularly in regard to scarce water resources and accelerated soil degradation. It is based on three components:

- Facilitating access to water and installing a well-planned irrigation system;

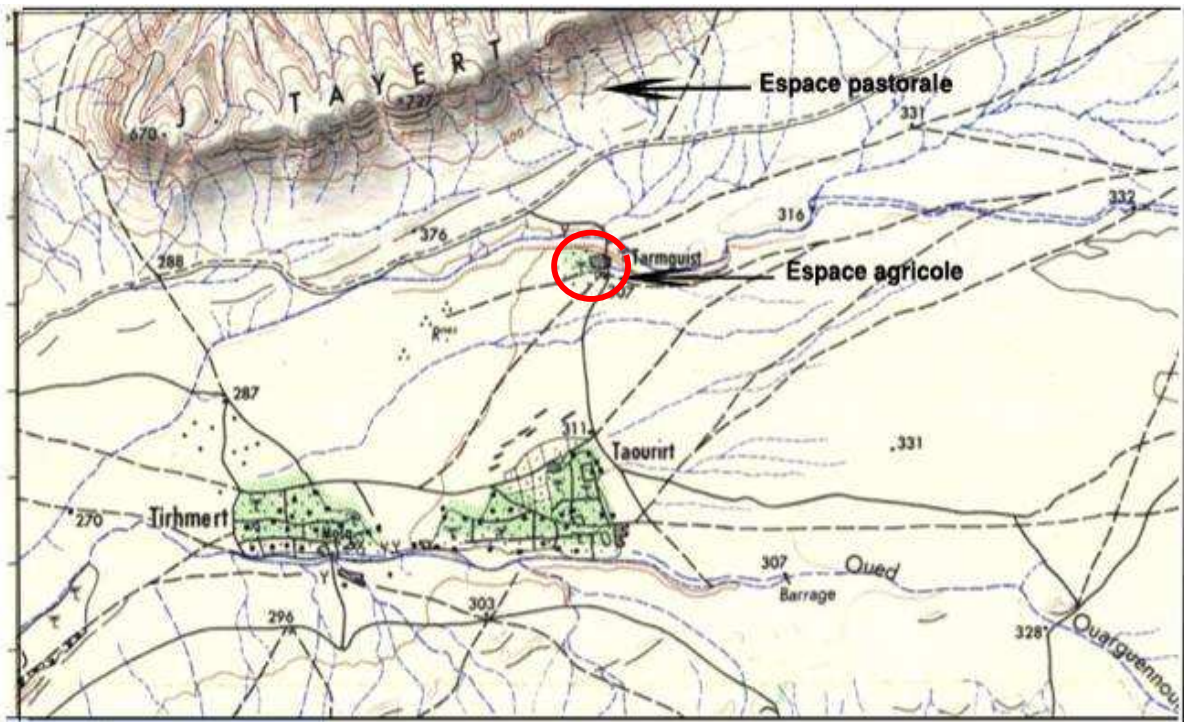
- Improving the oasis ecosystem's resiliency through experimental planting of farming and forestry species that are resistant to drought and favorable to soil stabilization and regeneration, while allowing the local community to develop revenue-generating activities;
- Implementing a training and capacity building programme for the community based on the following: collective and sustainable of water resources management, tree cultivation and reasoned cultivation, pastoral techniques and forestry ecosystem maintenance.

The lessons learned from the project will be capitalized throughout its completion, promoted and disseminated in order to encourage the consideration of adjustment to climate change in the local, regional and national policies, as well as other oasis communities.

## 1.0 JUSTIFICATION AND LOGIC OF THE PROJECT

### 1.1 Context: Community and Local Ecosystem

The Tarmguiste Oasis is one of the *douars* (villages) comprising the Rural Community of Asrir (province of Guelmim, in southern Morocco). It is made up of traditional adobe (mudbrick) houses and located in a sprawling valley on the left bank of the Seyad *oued* (river), on the edge of the Sahara.



It is part of the oasis villages most affected by the rural migration. The community in fact is comprised today of only thirty families (approximately 100 residents), down from 100 families in the 1960s. This massive depopulation is mainly the result of the deterioration of local living conditions – fewer water resources, which is essential for the survival of an oasis, and a lack of economic opportunities for residents.

Today, the village's subsistence economy relies on subsistence farming and breeding, but most of the village men work in neighboring towns. Since farming was no longer enough to guarantee acceptable living conditions, it has become secondary. In fact, the local subsistence farming economy, which relies on the oasis' natural resources, is highly dependent on climate variations, and therefore very vulnerable to the impacts of climate change. Oasis farming productivity is relatively poor as a result of the gradual disappearance of conditions favorable to agriculture (increasing shortage or poor management of water and soil degradation), which has led to the community's impoverishment.

Other than the scarcity of water resources, the Tarmguiste oasis has suffered from the destruction of the traditional underground (*Khettaras*) and ground (*Seguia*) canalizations resulting from the violent rises of the Seyad *oued*'s water level.

The drinking water supply has been secured since 2003 by a collective adduction network. All the homes are connected to the electricity network. Although the oasis has the basic infrastructures and though it is accessible by a paved road, it is

nonetheless under-equipped in comparison with other communities (difficult access to care, in particular), which reinforces its social, economic and climactic vulnerability.

The Tarmguiste Oasis has thus become a “dormitory oasis” as a number of its inhabitants live there only intermittently. This depopulation, resulting in part from the deterioration of the local resources, itself caused by climate change, has had two major consequences:

- **On the ecosystem – Abandonment of the palm grove**, pillar of the oasis ecosystem. Indeed, the oasis ecosystem’s functioning relies on use of the soil (unused soils deteriorate rapidly in this climate). This is possible only through cultivation of the date palm, which is central to the oasis system and economy. Disappearance of the palm grove intensifies soil degradation, thereby hastening the oasis into a vicious circle of degradation/impoverishment/abandonment.
- **On the community – Weakened traditional solidarities**. Traditional functioning of the Berber community of Tarmguiste is dependent on solidarity and collective management, particularly in regard to natural resources. Due to the current society and economic transformations, an individualist reasoning is beginning to override the collective approach. Scarce resources, the difficulty in ensuring acceptable living conditions in an increasingly hostile environment, the change of mentalities are all factors encouraging oasis inhabitants to favor a more individualist approach.

#### **Elders and Women: Foundation of the Oasis Community**

The oasis environment still enjoys the presence of old generations attached to the soil, perpetuating the traditional values of solidarity (*Touiza*), community (*Jemaa*), and collective resources management. With regard to climate change and adjustment, the elders are an essential group. Their concrete observations of the impacts of climate change will be extremely enlightening throughout the project, as well as the knowledge they will provide on the traditional resources management systems. The project will favor their knowledge and memory.

Women represent the keystone of the Berber oasis society. Their social and economic role is essential: they take care of seeding, harvesting, managing the herds, and gathering firewood and water. They participate in the local life and in a concrete manner in managing the ecosystem and natural resources. In regard to Tarmguiste, their role even more significant in that they constitute the stable core of the community. Indeed, if the men leave the village to seek work elsewhere, the women on the other hand remain in the village and contribute essentially to community life. They do not have direct access to ownership or decision-making, but have a potential of influence that the project will contribute to consolidating by giving them opportunities to express themselves and participate in the local debate. Women’s contribution to the adjustment is one of the major aspects of this project.

#### **Organization of the Oasis Ecosystem, an Integral Part of the Human Practices**

The oasis ecosystem overall is traditionally vulnerable, dependent on an always precarious balance between human activity and natural environment. Traditional farming practices have always relied on a durable natural ecosystem, cultivation and breeding, which depend on natural resources: water and soil. Oasis farming is actually irrigated farming, closely dependent on access to water. The deterioration of water resources has led to that of the local ecosystem and the disappearance of farming has led to the dissolution of ties between the community and the ecosystem on which it depends.

Traditionally, the Tarmguiste perimeter was irrigated by a gravity system that was fed by a source and resurgences of the Seyad oued (at approximately 1.6 km from the oasis). The water was led by an underground network of *khettara* (see diagram below). The source is now dry and today there remains only traces of water circulation and irrigation that were destroyed by the rises in water levels and unused for decades. Their rehabilitation cannot be considered because it is too costly and not wanted by the inhabitants.

The palm grove is currently irrigated only by spilling flood waters (once or twice a year) and individual wells pumping the underground water directly.

The traditional oasis farming system is organized around the date palm, which, by ensuring protection of the soil and cultivations against the sun, represents the basis of the oasis ecosystem and hard core of the community resources. An oasis' typical ecosystem is comprised of several layers of irrigated agriculture. The date palms provide shade to other fruit trees (almond, pomegranate trees), which in turn provide shade to cereal (corn, sorghum, wheat), market (onions, carrots, mint, squash) and fodder (alfalfa) crops.

In Tarmguiste, the source's drying up has led to near abandonment of annual and multi-year food crops. A few (poorly maintained) olive tree stumps persist, but the oasis' lower stratum has completely deteriorated (only a few minuscule cereal plots remain – tender wheat, barley, corn, sorghum; and even smaller fodder plots). The sole survivors of the water crisis are a few date palms maintained thanks to their powerful roots that draw deeply from the water table.

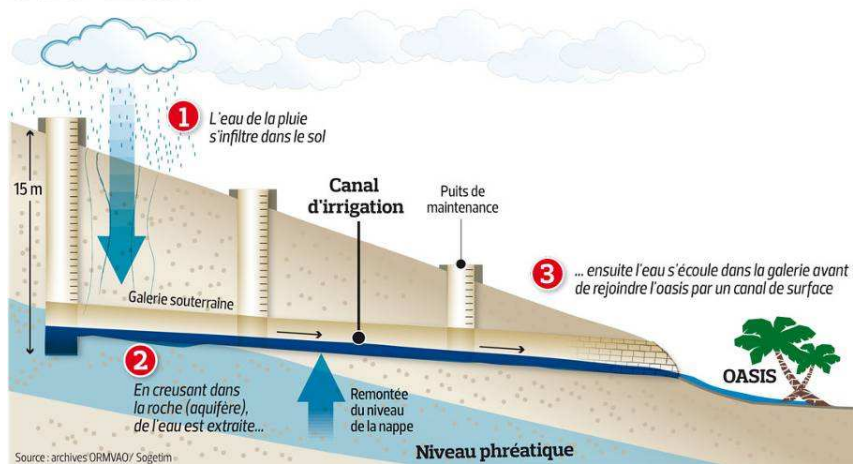
Current intensive pumping from the water table will reinforce the effects of climate change and cause resources to decrease, which will place the last palm trees (including some superior varieties such as Bouffegous, JibtI, Ratb, etc.) in danger. These trees are at the limit of their survival, their production is very weak both in quantity and quality. Disappearance of the date palm, unavoidable if significant action is not taken, would have irreversible consequences on the ecological system at the local and regional scale.

Natural vegetation in arid environments is essentially comprised of Saharan Acacia, argan trees, and a succession of low formations (atriplex, artemisia, etc.). The natural ecosystem is used for the range and firewood. Today, it is strongly deteriorated. Local pastoral practices depend on the large mobility of the herds (transhumance) over vast territories.

The principal activity that can be practiced by Tarmguiste inhabitants, extensive breeding, is in fact a major component of local incomes. The current herd includes approximately 100 sheep, 200 goats and a few cattle. This rearing depends on the fodder resources provided by the natural ecosystem (fodder crops are considerably limited by the low irrigation water resources), and represents significant pressure on the ecosystem.



### Schéma simplifié d'une « khattara »



### Simplified diagram of a “khattara”

- 1) The rain water becomes infiltrated in the soil
- 2) By boring into the rock, water is extracted
- 3) ... then, the water flows into the gallery before reaching the oasis through a surface canal

(Arrow down) Underground gallery

(Arrow up) Water table level rises

Water table



*The Targmuiste palm grove: in a state of advanced degradation (pictures above)*

## 1.2 Climate Context

### Climate change at the national level

At the national level, the combination of a number of factors observed since the late 1970s has enabled to measure the scope of climate change and its impact:

- Decrease of the net quantities of rainfall (between -3 et -30% in thirty years, according to region)
- Reduced length of snow cover period on mountain peaks (Rif and Atlas)
- Increased temperature variability
- Increasing average temperatures (between +0.6 and +1.4°C in forty years, according to region)
- Increased frequency and intensity of extreme phenomena (torrential and devastating rain, peaks of heat, droughts), increased inter-annual variability (disorderly succession of dry years and humid years), and change in rain distribution over space and time.

The consequences of these climate factors are on the one hand, a significant decrease in water resources, particularly in the arid regions of Southern Morocco, and an increase in climate unpredictability. The issues related to climate change are therefore considerable in a country whose need for water is increasingly significant (demographic and economic expansion).

### Future climate change – national level projection

Climactic projections of the Communication Nationale Initiale du Maroc at the UNFCCC (2001) and of the Second Communication (currently being finalized) anticipate a continuation and acceleration of these trends by the year 2020:

- Increase of the annual average temperature: +0.6°C by 2015, +1.8°C (2045), +3.2°C (2075)
- Increase of the frequency and intensity of heat waves
- Reduced rainfall by -6% (2015), -13% (2045), -19% (2075)
- Increase of the frequency and intensity of frontal and convective thunderstorms augmentation in the north and west of the Atlas chain
- Increased frequency and intensity of droughts in the south and east of the country
- Disturbance of seasonal precipitations (winter rain concentrated over a short period), reduced length and retreat of the snow coverage (migration in altitude of the 0°C isotherm and acceleration of snow melting)
- Increasing salinization of the underground water and soils.

### Local climate and observation of past and present climate change

The Guelmim region has a Saharan climate with oceanic influence. The average annual temperature is between 19 and 21°C. If the temperature can reach 43°C during the hot months (July-August), it remains relatively moderate on average (25° in the summer; 15° in the winter).

Annual evapotranspiration is high (approximately 1578 mm). Rainfall is as irregular as it is weak (70 mm per year), with very significant interannual and intra-annual variations. In fact, while average annual rainfall registered between 1936 and 2004 is 160 mm, the variability between rainy and dry periods is strong and growing. Precipitations do not surpass 18 mm (10% of annual precipitations) during the dry period (April to September), while 90% of annual precipitations are registered during the rainy season, which falls between October and March. Therefore, the zone is characterized by an acute water deficit during a large part of the year.

Pre-desert southern Morocco faces several major structural climate risks:

- Alternating droughts and floods;



- Violent winds coming from the south (Chergui and Sirocco) – “sand storms.”

Climatic observations over the last three decades (1976-2006) show intensified and increasing frequency of droughts and floods, which are a major impact of climate change in the region.

### **Future climate change – projection at the regional scale**

Climate projections were made at the regional level (*downscaling*, using the simplified MAGICC/SCENGEN GCM model) for the Souss-Massa region, which neighbors the Guelmim region (where the project is located), and anticipate a decrease in rainfall during the humid season by -30% by 2020 and -80% by 2080. Global warming will be by +0.8°C for this region by 2020 and +2.2°C by 2080.

The oasis ecosystems in southern Morocco, including that of Tarmguiste, rely essentially on management of rare water resources and the seasonal variability of these resources. The climate change noted since the end of the 1970s and its expected increase in the future, is already having an impact and will increasingly harm the delicate balance that allows the oasis ecosystem to function, regenerate itself and nourish its inhabitants.

### **1.3 Impacts of Climate Change**

Climate risks, including those linked to climate change, have already had visible impacts on the oases, both environmentally and socioeconomically. In fact, one of the characteristics of the oasis system is the interdependence of the natural environment and economic activity. Local population revenues and community organization depend essentially on use of the ecosystem.

The impacts of climate change on the oasis ecosystem are perceptible at different levels:

- **Increased water stress** (combination of the scarcity of water resources and increasing temperatures causing evapotranspiration)
- **Increased drought and soil salinization** have contributed to decimating Moroccan palm groves (falling from 15 million date palms in the early 20<sup>th</sup> century to 4 million today).

Today, the Tarmguiste palm grove is almost totally abandoned. Yet the date palm is central to the oasis ecosystem and agriculture. The palm grove’s regression has led to the decline in protection of the underlying crops it provides shade for in the traditional system of cultivation strata: fruit trees, market farming and fodder products, which feed the community and its herds, are threatened by too much sun exposure and evapotranspiration. These subsistence crops are being abandoned little by little.

The damage to the oasis system has caused a decrease in farmer revenue and the development of maladaptation, which accentuates the impacts of climate change. This behavior is considered atypical of the oasis culture, which relies traditionally on collectivity and solidarity. A true race for water has been launched among farmers who systematically resort to pumping. This has contributed to intensifying the water stress, as pumping management is dependent on each individual’s free will, but it has also generated social inequalities based on access to water. Poor oasis farmer performance (and lack of fodder, cultivated beneath the palm trees), has led to compensation by over-grazing of the spontaneous species (bushes, all shrubs) in the absence of collective and effective management of the range. This has made already extremely degraded soils fragile.

Moreover, the impacts of climate change and the difficulty in maintaining agricultural yields have encouraged and strengthened the effects of non-sustainable cultivation practices:

- Overexploitation of the soils
- Unbalanced cropping system practices, which prevent earth regeneration
- Poor water resources management (practice of flooding plots of land)
- Poor water efficiency caused by very demanding and unsuitable crops (alfalfa, for example, recovers less than 2 Dirhams per m<sup>3</sup> of irrigated water).

The combined impacts of climate change and persistent unsustainable practices are thus endangering the region and country balance. Oases represent a natural vegetation and climactic barrier against the advance of the Sahara desert. Their deterioration and the increasing abandonment of the palm groves will no longer make it possible to fight against desertification. The increasingly impoverished oasis communities will cause the rural exodus to increase, which will feed into the urban social conflicts while causing a decrease in agricultural production, which in the end can put the country's food safety in danger.

#### 1.4 Approach Favored by the Project

##### *Reminder of the threats weighing on the ecosystem*

The project aims to increase the Tarmguiste oasis ecosystem's resiliency toward the impacts of climate change, particularly with regard to the scarcity of water resources and accelerated soil degradation.

The project aims to achieve the **Global Environmental Benefit (GEB) of preventing of soil degradation**. Its impact on the GEB will be measured by the **number of degraded land hectares that are restored**.

The local ecosystem and GEB mentioned above are threatened by:

##### **1- Baseline climate factors (current situation – intervention not eligible under the CBA):**

- Alternating droughts and floods;
- Structural rarity of water resources and drying up of the source upon which depended the oasis;
- Violent winds coming from the South (Chergui and Sirocco): sand-covering and salinization of the water circulation networks (destruction and abandonment of the traditional water circulation and irrigation structures).

##### **2- Anthropogenic factors (man's action – intervention not eligible under the CBA):**

- Abandonment of the palm grove and cultivation of the earth (allowing the earth to become desert);
- Poor management of water resources: intensive and anarchic pumping of underground resources, irrigation practices for high water consumption (submersion), crops highly demanding in water and producing a low yield;
- Practice of extensive breeding and overexploitation of endemic natural species;
- Destruction and lack of maintenance of the traditional irrigation channels.

##### **3- Factors relating to future climate change (intervention eligible under the CBA) :**

- Increase in frequency and intensity of the droughts and floods;
- Increase of the inter-annual climate variability: causing problems to anticipate and predict;
- Aggravation of water scarcity and increase of the structural constraints to the oasis ecosystem.

##### ***Baseline solutions contributed by the project (CBA partner – Southern Oasis Programme)***

The project aims to solve baseline pressures through direct intervention on the water access and circulation systems, which is a priority to rehabilitate the palm grove. The baseline solutions, funded by the Southern Oasis Programme (SOP) consists of the following:

- Digging a well to meet the oasis' current needs for water. To prevent this baseline solution from aggravating the impacts of climate change on water availability, this well will be managed collectively, in order to centralize and control its use.
- Technical equipment of this well allows it to be functional (electric network hookup, installation of a motor pump).

#### ***Reinforcing the resiliency and capacity to adapt (CBA)***

The CBA and SOP will support the implementation of a localized experimental irrigation system (drip), which will enable to promote a minimal and rational use of water, facing its future scarcity. Farmers will be trained to use and maintain it, and will be able to deploy this system throughout the entire oasis in the future.

The ecosystem's resistance to the impacts of climate change will be achieved through the development of new cultural practices and new ecosystem management techniques: water preservation and optimal use, (re)planting of species suitable for the local environment and community's needs (by replacing species that cannot adapt and consume too much water).

This comprehensive approach (resilient plantations + sustainable water management + capacity building) will promote adjustment in the medium and long terms, as well as improved resiliency toward climate variability. Guidance of the local communities through a training and capacity building programme will contribute to the project's sustainability and enable inhabitants to continue adjusting in the future.

#### ***Benefits for the community***

Traditionally, the community's resources depend on the ecosystem and its rational exploitation. The current trend, from the standpoint of practices and climate change, has not been favorable for this ecosystem, and has generated rural migration and abandonment, which is extremely harmful to the oasis ecosystem, which must be cultivated in order to be perpetuated.

Within the framework of this project, it is therefore a matter of rehabilitating the ecosystem and sustain it through cultivation and resilient exploitation of the soils. Tarmguiste inhabitants will benefit directly from the improvement of their ecosystem's resiliency, on which they depend for their resources. They will see their access to water facilitated, while new capacities for collective management are being developed. They will also enjoy the implementation of sustainable plants, all of which will be selected to have a direct use for the inhabitants (either for local consumption, or through transformation for commerce, thus generating revenue). The oasis' young people who are today incited to find work outside of their village will be encouraged to return and promote new and sustainable activities (ecotourism, integrated farming, etc).

#### ***Project's potential in terms of reproduction and impact, including at the larger scale***

The Tarmguiste oasis represents an extreme case of the situation of Moroccan oases. This is why its potential for reproduction, including at a larger scale is important. This project is actually one of the current priorities for Morocco, namely preserving the Oasis, whose significance for Moroccan society and environmental role are essential. This is therefore a pilot project both for the CBA programme and for the national programme to promote the Oases (Southern Oasis Programme). The Tarmguiste project's goal is to emphasize adjustment in order to preserve the oases. As such, it also falls under the Africa Adaptation programme (UNDP), whose approach is centered on developing local actors' capacities to adjust in the oasis zone. This concrete initiative will therefore enjoy significant visibility, and the lessons learned from this project will potentially resonate strongly with decision makers who have high expectations on this theme. Monitoring and evaluation of the project will be conducted in close partnership with the SOP and the local authorities, and with the AAP programme. The experiences acquired from the project will contribute to the process of developing the Communal Development Plan of Asrir, and they will also be diffused to other communes / provinces in order to promote awareness about adjustment to the development strategies. ☐ ☐

### ***Existing Constraints and the Means Implemented to Overcome Them*** ☒

The principal constraint at the local level is the lack of confidence of the residents in their ability to make a difference, which appears as a form of fatalism and wait-and-see policy. One of the project's essential elements will be to convince the members of the community that through actions taken to adjust, they can contribute to preserving their ecosystem and living conditions. It will also consist of making them become aware of the negative impact of some of their practices on already threatened resources (water, soil), and to consolidate their capacities around new practices that will enable them to improve their living conditions as they use the lessons learned from real projects.

Moreover, access to information is difficult in this withdrawn environment, and the project will also emphasize this element, based on local leaders and respecting the local methods of communication and learning. Particular emphasis will be placed on building women's capacities and their knowledge. Specific training sessions will be provided for women, at appropriate schedules and locations. The method implemented will support "training-action": participative workshops focusing on the project's substantial activities, more favorable toward women's participation. Organization of these workshops will take local sociocultural factors into consideration.

The project will have to endeavor to motivate the different community groups (particularly young people and women, who are often excluded from the decision making process). There is a strong tradition of solidarity and potential for local stimulation, but the lack of perspective and discouragement of residents have mitigated these traditional collective work practices. Promoting inclusive mobilization (by also giving women and young people a role) is therefore an essential part of the project.

## **2.0 COMMUNITY APPROPRIATION**

### **2.1 Project Formulation**

The project was developed in several steps, through collective work conducted by project leader ESPACE RURAL Association and its partners (national and local SOP teams, CBA team). Several discussion and preparation sessions were held with community members from the time of the project's draft phase.

Residents were consulted, heard and their priorities were taken into consideration over long meetings where everyone was able to express their ideas and real experiences in relation to climate change. These discussions made it possible to gauge the resident's strong perception of climate change, which they have been experiencing on a daily basis. The project was drafted based on these meetings.

Three specialized consultants formulated the complete project (water, agriculture, forestry), which enabled each in their own field to specify the main lines according to the priority concerns expressed by the residents.

The Association leading the project is committed to implementing the project while promoting community involvement, and with support from the local Southern Oasis Programme and Morocco's CBA team.

### **2.2 Implementation of the project**

The Association is responsible for the project's implementation and is committed to mobilizing the community for all the activities. Action groups will be formed according to participant interests, skills and availability, allowing them to be involved in implementing the activities. Women's participation is particularly encouraged and supported.

The local SOP team will provide permanent support to the Association for implementation of the activities. The regional SOP coordinator in Guelmim is responsible for supervising the proper achievement of the activities, and the local SOP development agent will help the association in all its daily pursuits (planning, organization of community meetings, tenders, financial monitoring, CBA reports writing, etc.).

The CBA team will also support the association in the area of community mobilization, capitalization, monitoring of activities and results.

### **2.3 Project finalization and sustainable appropriation by community members**

Community members will be the ones to implement the project directly, under the leadership of the Association ESPACE RURAL. Sustainable appropriation will be encouraged by participation of the residents, who will benefit from the project's activities directly:

- They will implement the irrigation network on the experimental plots
- They will plant trees and resilient plants on their own plots and collective plots
- They will store rain water
- They will participate in the capacity building process, which will enable to initiate water management and resilient farming practices that can be deployed in the future.

Sustainable appropriation will also be promoted by the fact that the project will depend on traditional solidarity practices (touiza) and the community approach to resources management.

The adjustment project as such will last only 18 months, but it aims to create a long term dynamic that will motivate the community and strengthen social ties and local solidarity.

Women and young people participation, which is one of the project's challenges, will be emphasized and represent an additional element of sustainability.

Two project evaluations will be organized: the first midway will serve to readjust the activities and timetable if necessary. The second one, at the end of the project, will be in the form of a participative workshop for capitalization and restitution. It will enable to capitalize on the experiences and lessons learned from the project. Associating the community in the evaluation process will be an additional factor of appropriation and sustainability.

## **3.0 DESCRIPTION OF THE PROJECT LEADER**

### **3.1 History of the organization, context and capacities**

The Association Espace rural of Tarmguiste was created in 1998 to protect the Tarmguiste oasis through socioeconomic development and local environmental protection activities.

This is a community-based association that is based locally and comprised of community members. It intervenes as an interface and speaker for the community to guarantee the consideration of local issues and priorities.

The association has several projects underway in the area of management of the ecosystem and water resources, namely:

- Establishment of experimental plantations of trees that are resistant to drought;
- Cleaning of palm trees, in partnership with the Direction provinciale de l'agriculture (DPA) in Guelmim;
- Establishment of a dam to protect against flooding for the oasis residents, in partnership with the DAP of Guelmim;
- Implementation of a drinking water supply project, in partnership with the Ministry of Equipment;
- Development of garbage collection within the oasis, in partnership with the DPA of Guelmim;
- Organization of a round table on the anarchic exploitation of the water table, which resulted among other things in a community decision to prohibit boring of wells more than 50 m within the oasis perimeter;
- Planning and implementation of awareness raising campaigns against air pollution caused by the Guelmim garbage dump located near the oasis;

- Planning and implementation of campaigns to fight against the anarchic dispersion of waster around the oasis.

The association belongs to a network of community-based oasis organizations participating in the Southern Oasis Programme / UNDP). As such, it benefits from support from the SOP to manage and monitor its projects.

The association's budget for 2008 was 140,000 Moroccan Dirhams (equivalent to approximately \$18,000 US). The association's funds are still tied to projects implemented and derive from partner institutions.

## 4.0 PROJECT DESCRIPTION

### **Project's Overall Objective**

Strengthening the TARMGUISTE oasis ecosystem's resiliency to the impacts of climate change and improving the local community's capacity to adapt to reduced water resources and soil degradation.

### **Result 1.0:**

#### **Access to water for farming is facilitated and irrigation water resources management is improved**

##### ***Product 1.1: Establishment of a collective well equipped with a motor pump (BASELINE)***

A well with a depth of 28 m will be built to provide for the project's irrigation system. Its equipment with a motor pump will enable it to achieve a flow of 8 l per second, which will improve the village farmers' access to water.

The well will be linked to the project's pilot perimeter (where localized irrigation and planting will be implemented). It will be able to cover the needs for irrigation water for a surface of approximately 4 ha (based on the hypothesis of 80 m<sup>3</sup> water/ha/day).

##### ***Product 1.2: Establishment of an experimental drip irrigation system (over 4 ha)***

A drip irrigation system will be established from water provided by the new well. This system will be comprised of a storage basin, a takeoff point, and a pilot localized irrigation network over 4 ha.

The equipment will allow for the subsequent development of 13 additional ha, in order to cover the entire oasis.

### **Result 2.0:**

#### **Resiliency of the forestry ecosystem and oasis farming with regard to reduced water resources and soil degradation**

##### ***Product 2.1: Experimental planting of resilient farming and arboreal species***

Resilient farming and arboreal species that can adapt to reduced water resources and increasing drought risks will be planted over 4 ha plots.

1 ha will be a collective experimental garden that will serve as a model for palm grove rehabilitation. The other 3 ha will be individual experimental plots, which will be used also as a model for future dissemination.

Plantations will be made on the plots irrigated by the project's pilot system (see product 1.2).

They will enable to restore plots exposed to erosion (the simple act of turning the earth and cultivating it will make it possible to resolve the salinization problem) and will serve to demonstrate the potential of crops irrigated in a rational manner.

Species that adapt to the oasis climate and are particularly resilient to the coming climate changes will be planted. The selection of species will also take into consideration the fact that farming has become a secondary activity, even an anecdote in the Tarmguiste community. These species will therefore require only minimal maintenance and have to provide immediate benefits to the community, while encouraging the adjustment. Women will be particularly targeted, as the hard and stable core of the community.

The garden's composition will be based on the traditional organization of the oasis agriculture and meet the needs of the community in terms of immediate benefits (revenues, self-consumption), while introducing innovative, more resilient practices in the field of arboriculture:

- **Date palm:** keystone and factor of stability for the ecosystem and oasis economy; its production makes water cost-effective, and its presence is essential for the underlying crops



**150 palm trees will be planted** (Bouffagous and Nejda varieties)

- **Olive tree:** traditional tree of arid zones, adjusting well to low water resources, and strongly resistant to drought (the olive tree, as opposed to many trees, regenerates after a drought period). It will be planted in a manner that it doesn't suffer from the shade of the palms and doesn't block the development of underlying crops through its root system. This tree with a high symbolic value also has significant economic value (production of olives and its derivatives, which are essential for the communities' daily life).  
**50 olive trees will be planted**, the Menara and Houzia varieties, which are particularly suited to aridity and high temperatures, and whose early blossoms preserve them from the hot summer winds.
- **Almond tree:** very suited to the climate and having a strong economic potential, the almond tree however requires regular monitoring and particular care.  
**100 almond trees will be planted**, the Marcona and Fournat varieties (crossbreeds)
- **Fig tree:** The fig tree is a species that is well suited to southern Morocco's climate conditions. It is capable of harnessing the slightest humidity thanks to its abundant, powerful and extensive root system. Moreover, the tree responds perfectly to water catchment and shows rapid growth and fruit set.  
**100 fig trees will be planted**, the Beida 2256, Kadota 2278, and Chaaria 2587 varieties
- **Carob tree:** High power for nitrogen fixation and very suited for stony and dry soils since its development is very slow (production after 10 years)  
**20 carob trees will be planted**
- **Mixed feed-grade planting:** To contribute both to feeding the herds and nitrogen fixation in the soil, a mixed solution (fodder sorghum and berseem clover) is suggested, which is less demanding in water than usually cultivated alfalfa.  
**2 quintals of seeds** will be provided to the community for experimental micro-plantations.

***Product 2.2: Experimental plantation of resilient forest species***

An experimental plantation of 10 has around the oasis, alongside the basin side of the oued, will enable to strengthen the resiliency of soils degraded by grazing and affected by climate change.

Local resilient species have been selected and will be planted in a combined manner, in order to strengthen soil regeneration and encourage rational exploitation (fodder, harvesting, transformation):

- **Argan tree:** Endemic species, very resistant to drought; provides fodder and is an essential source of income for the communities;
- **Acacia:** One of the species most adapted to Saharan climate conditions, and with a strong power of soil fixation; it also a significant provider of fodder (shoots, pods, leaves);
- **Cactus** (Barbary fig): plant with multiple use, typical of very arid zones, with a strong power for fixation of depleted soils.

500 argan and 500 acacia plants will be provided to the community by the Direction Régionale des Eaux et Forêts.

The CBA programme will fund the planting of 1000 prickly pear cactus plants as well as light fencing for the site.

***Product 2.3: Micro-catchment of rainwater***

Rainwater micro-catchment stations will be installed in forest zones and will enable to curb erosion and reload the water table by streaming, thus promoting spontaneous vegetation growth and improvement of the water table.

Community members, together with external technical support, will build gabion walls to cover a volume of **100 m<sup>3</sup> of catchment**.

**Result 3.0:**

## **The community's capacity to adapt is reinforced in a sustainable manner**

### ***Product 3.: Implementation of an awareness-raising programme for sustainable water management and resilient agropastoral and forestry practices***

A complete community capacity building programme will be implemented regarding adjustment, whose main lines will hinge on the following:

- **Awareness raising on climate change (1 day):** Impacts and adjustment; understanding soil erosion, scarce water resources;
- **Resilient farming practices (12 days, distributed over several sessions) – in support for product 2.1**
  - o Resilient crop production techniques
  - o Crop size, irrigation, protection
  - o Harvest and post-harvest
  - o Palm tree formation (pollination, maintenance)
  - o Production management (accounting, production schedule, planning, etc.)
- **Rational water resources management (8 days, distributed over 2 sessions) – in support for products 1.2 and 2.1**
  - o Installation and maintenance of the drip irrigation system
  - o Rational irrigation and sustainable management of water resources
- **Resilient sylvo-pastoral practices and support for micro-catchment (8 days, distributed over 2 sessions) – in support for products 2.2 and 2.3**
  - o Vegetation cover: degradation and restoration
  - o Seeding and planting
  - o Protection of the vegetation cover and resilient approach of pastoralism
  - o Support for the construction of micro-dams: awareness raising regarding the use of micro-catchment, technical support
- **Capacity building regarding sustainable revenue-generating activities**
  - o Initiation to sustainable apiculture management
  - o Initiation to increasing the focus on aromatic and medicinal plants

All training modules will be organized according to the training-action principles, which enables to learn everything while “doing,” through direct practice. The experimental sites will be the training venues, and the project's activities will correspond to support for these trainings.

## **Result 4.0:**

### **The lessons learned will be capitalized and communicated in order to sustain the local and regional policies**

#### ***Product 4.1: Community representatives participate in meetings with other oasis project leaders and present the adjustment plan to other communities***

Association / community members will meet with other project leaders during workshops and conferences. They will be called upon to promote their own project. They can also visit other sites to study methods and exchange ideas on community adjustment projects.

#### ***Product 4.2: An evaluation is conducted at midway in order to capitalize on lessons learned and readjust implementation***

An Evaluation will be conducted midway in a participative manner to measure the project's progress and capitalize on lessons learned, and if necessary, make adjustments to implementation. Its results will serve as a support for sharing experiences and disseminating them to the territorial and other oasis communities.

***Product 4.3: Organization of a final capitalization and evaluation workshop***

A closing participative workshop will be organized. Its goal will be to assess the final results and capitalize on the experiences and lessons learned.

This workshop will be organized with all community participants, representatives and partners. It will make it possible to highlight the lessons learned from the project and promote the consideration of the adjustment of local and regional policies (particularly within the framework of the Local Development Plans).

The project's results will also sustain the process followed by the Africa Adaptation Programme (UNDP).

## 4.2 Schedule

	juil-10	août-10	sept-10	oct-10	nov-10	déc-10	janv-11	févr-11	mars-11	avr-11	mai-11	juin-11	juil-11	août-11	sept-11	oct-11	nov-11	déc	
Résultat 1 - VOLET EAU																			
Produit 1.1 PUIITS COLLECTIF																			
Produit 1.2 IRRIGATION																			
Résultat 2 - VOLET PLANTATIONS ET MICROCAPTAGES																			
Produit 2.1 PLANTATION AGRICOLE																			
Produit 2.2 PLANTATION FORESTIERE																			
Produit 2.3 MICRO-CAPTAGES																			
Résultat 3 - VOLET RENFORCEMENT CAPACITES																			
Produit 3.1 FORMATION																			
<i>Sensibilisation Changement climatique</i>																			
<i>Pratiques agricoles résilientes</i>																			
<i>Gestion de l'eau</i>																			
<i>Agroforesterie et microcaptages</i>																			
AGR																			
Résultat 4 - VOLET CAPITALISATION / COMMUNICATION																			
Produit 4.1 PRESENTATION / PROMOTION DU PROJET (en continu)																			
Produit 4.2 EVALUATION MI-PAROURS																			
Produit 4.3 ATELIER FINAL DE CAPITALISATION																			

### 4.3 Risks and obstacles

#### **Obstacles**

With regard to the community, the main obstacle is the lack of information and awareness of the population on the medium or long term effects of their practices. To have these practices evolve will be a long and difficult process.

Through the participative process, the project will enable to empower community members and promote awareness raising of each individual's role, as well as the importance of developing alternative practices to face future climate changes.

The difficulty in mobilizing the inhabitants, particularly women and young people, will have to be overcome through follow-up and a constant effort from the project team, and the association in particular.

Moreover, the project shall be sure to consider that culturally, the communities have difficulty planning for the future and don't believe that they can influence progress. This is a crucial element, which requires very strong sensitivity on the part of leaders, along with a lot of tact and patience.

Through the process of mobilizing local institutional partners, the project will attempt to overcome the potential obstacles to the functioning of the decentralized institutions, so that the lessons learned through the project are taken into consideration and the project is guaranteed sustainability. In fact, the Ministry of Agriculture's decentralized services and the departments of the Direction Régionale des Eaux et Forêts in particular, will be encouraged to support the association in implementing the project, contribute to disseminating sustainable practices and encourage adjustment in other communities. This is a major issue, and the project's activities will be conducted in such a way that institutional representatives are included. The latter will be able to participate in training workshops on adjustment, which will be organized within the framework of Morocco's CBA programme.

#### **Risks**

The risks that the project's implementation may encounter are in relation to the availability of the plants provided for the experimental plantings. Actually, to maximize sustainability, well-determined varieties that can be found only with a few suppliers will be selected.

Moreover, there is the risk of extreme climate events (droughts or floods) that can impede on planting.

### 4.4 Monitoring and evaluation plan

The monitoring and evaluation plan will be based on two types of indicators:

- Global environmental benefits
- The assessment of reduced vulnerability

#### **4.4.1 Global environmental benefits**

The **global environmental benefit (GEB)** targeted by the project is **to prevent soil degradation**. The project's impact on this GEB will be measured by the **number of hectares of restored degraded land**.

**The baseline indicator is: 0 ha**

This indicator's progress will be measured at the end of the project.

The goal is to restore 4 ha of farm land and 10 ha of forest land.

#### **4.4.2. Capacity building indicator**

The project aims to improve the capacities of the Espace rural association and Tarmguiste community.

The indicator that will be used at the end of the project is:

- **The number of NGOs and basic community groups that participated or were involved in the project.**

This indicator's progress will be measured at the end of the project.

The goal is the participation and involvement of one NGO and the following community groups: farmers, women and young people.

#### 4.4.3 Initial VRA analysis (Vulnerability Reduction Assessment)

The initial VRA was conducted during a community meeting led by consultants hired during the project's preparation phase, and in which 14 community members participated (men). This meeting took place during the spring of 2009. The qualitative components were consolidated at a second meeting in November 2009, led jointly by the CBA coordinator and SOP.

**NB.** Question 3 regarding the scope of the obstacles had to be completed (initially, according to the French version of the project idea form, it was formulated as follows: "How do you assess the impact of your project on the water problem?"). At a community meeting organized in November 2009, this question was discussed again according to a more complete formulation ("What are the obstacles preventing you from adapting?"). The assessment was not reviewed, but the qualitative components were gathered (see below).

Vulnerability Reduction Assessment phase	Indicator	QUESTION ASKED	INITIAL SCORE (prior to the project)
Current vulnerability assessment	1. Vulnerability of the / community's means of subsistence well being due to the <b>current</b> climate changes and/or climate variability	<i>What is the impact of the lack of water on your means of subsistence?</i>	5.2
Future climate risks assessment	2. Vulnerability of the community's means of subsistence / well being due to the <b>future</b> climate changes and/or climate variability	<i>What will be the impact of an increase in the scarcity of water on your means of subsistence?</i>	4.4
Formulation of an adjustment strategy	3. Scope of the obstacles (institutional, political, technological, etc. ) to adjustment	<i>How do you assess the impact of your project on the water problem? What are the obstacles preventing you from adapting to reduced water resources?</i>	6.8
Continuation/Sustainability of the adjustment process	4. The community's aptitude and disposition to continue its process of adjustment and management of the climate risks	<i>What is your level of faith in the continuation of the activities beyond the project? Do you think that you will have acquired the capacities allowing you to adapt in the future?</i>	8
<b>Initial VRA Score</b>			<b>6</b>

On the assessment grid used, 1 is the maximum value (strong vulnerability) and 10 in the minimum value (low vulnerability).

**The average vulnerability prior to implementation of the CBA project is 6.**

## Qualitative components gathered through the initial VRA

### ***Vulnerability to current risks (average)***

The principal problem expressed by the community is the lack of water, which has impacts on the village's two main activities: farming and breeding.

The water problem is softened for some, because most inhabitants practice non-farming activities (construction work outside the village).

Nonetheless, all agree that additional water resources must be mobilized (use of the oued flood water; restoring the well's functioning).

### ***Vulnerability to future risks (strong)***

Residents are relatively pessimistic about their future vulnerability. They estimate that reduced water resources will result in a total cessation of farming activities and cause increasing migration to the cities. They estimate that revenues must be diversified as much as possible by developing alternative activities (crafts, ecotourism) in the village in order to keep residents there.

### ***Adjustment strategy / Barriers (average)***

Residents estimate that their margin of maneuver is very small. They don't have sufficient financial means to adapt.

Nevertheless, they estimate that the project meets the population's expectations and confident that it will succeed because it is based on the human element, and particularly on traditions of local solidarity. During the VRA consolidation meeting, some participants nevertheless emphasized that this traditional solidarity is less and less practiced in the village, which represents a barrier to adjustment.

### ***Sustainability of the adjustment process (low vulnerability – strong confidence of community members)***

Participants are optimistic regarding the adjustment process' sustainability. They estimate that the project will enable to start a dynamic in the village. In their view, capacity building and training for new farming practices are components of sustainability, particularly through the mobilization of young people.

However, there is some fear because the young people increasingly tend to leave the village, which will impede on the project's sustainability.

## Monitoring and evaluation of VRA indicators

Vulnerability assessment will be conducted midway through the project, and at the end of the project.

	<b><i>Schedule of VRA sessions</i></b>	<b><i>Who is responsible for leading the sessions?</i></b>	<b><i>Who is responsible for collecting data?</i></b>
<b><i>Initial VRA</i></b>	Spring 2009	Consultants	Consultants
<b><i>Intermediate VRA</i></b>	End of 2010	Local SOP coordinator	CBA coordinator
<b><i>Final VRA</i></b>	Fall 2011	Local SOP coordinator	CBA coordinator

## 4.5 Project management

### ***4.5.1 Management structures***

A project steering committee will be established. It will be responsible for regular monitoring of the project. This steering committee will include the following:

- A Southern Oasis Programme representative (at the national level)
- A GEF/SGP / CBA representative
- The local Guelmim SOP coordination
- The Espace Rural association



This committee will meet at least three times during the project in order to assess its progress and support the project leader in planning its activities.

#### ***4.5.2 Relationships and responsibilities of the project leader and his partners***

The ESPACE RURAL association is responsible for implementing the project's activities and respecting its schedule. It will receive support from the local Southern Oasis programme in Guelmim, particularly from the Regional Coordinator and Local Development Agent.

The SOP team will provide daily support to the association: organizing community meetings, mobilizing community volunteer groups, monitoring the implementation schedule, and managing expenses.

The SOP team will also be responsible for supporting the association in preparing its financial and narrative reports.

The GEF/SGP team will provide support to the association in writing the Terms of Reference, issuing bid solicitations, managing activities, and preparing reports. It will also support community mobilization and the monitoring of Vulnerability Assessment.

The Direction Régionale des Eaux et Forêts de Guelmim will be responsible for ensuring the supply of forest plants, and provide training to participants in the area of forest management. It will support the realization of micro-catchment.

#### 4.6 Community volunteer contribution to the project's activities

Note: this contribution is integrated in the financing plan, as a participation in kind (it is estimated in Moroccan Dirhams)

Volunteer Contribution to the CBA – TARMGUISTE Project												
Activities	Volunteer contribution description (capacities, knowledge, savoir-faire, labor, land, tools, etc.)	Total number of volunteers	Women	Men	Elderly (over 60 years of age)	Young people (Under 25 years of age)	Disabled	Locals	Nationals	International	Number of volunteer work days	Volunteer contribution's monetary value
Installation of the drip irrigation system (4 ha)	- Labor - Access to tools - Access to plots	30		30	10	20		30			90 D	6 300.00 = (3d*30v*70.00dh)
Arboreal planting (pal trees, almond trees, olive trees, fig trees, carob trees)	- Labor - Access to tools - Access to plots - Water supply for irrigation - Labor for plants upkeep	40	10	30	15	25		40			280 D	11,200.00= (7d*40v*40.00dh)
Sorghum and clove planting	- Labor - Access to tools - Access to plots - Water supply for irrigation - Labor for plants upkeep	15	5	10	5	10		15			45D	1,800.00  (3d*15 v*40.00 dh)
Forest planting (acacia, argan tree, cactus)	- Labor for site delimitation - Labor for planting - Labor for cactus fence - Tools and material supply - Site surveillance	72		72	22	50		72			648 D	45,360.00  (9d*72v*70.00dh)
Micro-catchment construction	- Labor for site localization - Construction work force - Tools and material supply - Site surveillance	32		32	7	25		32			288 D	20,160.00 (9d*32v*70.00dh)
Training	- Organization and mobilization of	6	2	4	4	2		6			48 D	7,200.00

Training	- Organization and mobilization of participant groups (inform people and have them attend training) - Active participation in organized training - Loan of a premises or a plot for training	6	2	4	4	2		6			48 D	7,200.00 (8d*6v*150.00 dh)
Participation in meetings with other organizations	- Presentation of the project at meetings with other associations	6	2	4	4	2		6			18 D	5,400.00 (3d*6v*300.00dh)
Mid-course evaluation	- Participation in evaluation workshops	6	2	4	4	2		6			6 D	900.00 (1d*6v*150.00 dh)
Final workshop	- Participation in the final workshop - Preparation of pastries or meals for participants -	6	2	4	4	2		6			12 D	1,800.00 (2d*6v*150.00 dh)
<b>TOTAL</b>		223	21	200	75	148		223	0	0	549 D	100,120.00

## 5.0 PROJECT COST AND FINANCING PLAN

### 5.1 Total project cost and amounts required:

Projet TARMGUISTE Budget et plan de financement							
	Description de la ligne budgétaire	Financement CBA	Contribution communautaire	Direction Régionale des Eaux et Forêts	Programme Oasis Sud (POS)	TOTAL (en MAD)	TOTAL (en USD)
			En nature	En nature	En espèces		
<b>RESULTAT 1</b>	Produit 1.1	Puits collectif équipé motopompe			140 000	140 000	16 037
	Produit 1.2	Système d'irrigation goutte-à-goutte sur 4ha	100 000	6 300	390 000	496 300	56 850
<b>RESULTAT 2</b>	Produit 2.1	Achat des plants et semences	34 650			34 650	3 969
		Mise en œuvre de la plantation / irrigation / fertilisation		13 000		13 000	1 489
	Produit 2.2	Achat des plants	3 000		3 000	6 000	687
		Achat matériel pour clôture légère	30 000			30 000	3 436
	Produit 2.3	Mise en œuvre de la plantation		45 360		45 360	5 196
		Micro-captages des eaux pluviales: matériaux	60 000			60 000	6 873
	Réalisation		20 160		20 160	2 309	
<b>RESULTAT 3</b>	Produit 3.1	Sensibilisation au changement climatique	3 000	7 200		10 200	1 168
		Formation - Pratiques agricoles résilientes (à partir des plantations pilotes)	46 000			46 000	5 269
		Formation - Gestion résiliente des ressources en eau / mise en place et utilisation optimale de l'irrigation localisée	34 000			34 000	3 895
		Formation -Pratiques sylvopastorales résilientes (à partir des plantations pilotes) et appui à la réalisation des micro-captages	15 000		19 000	34 000	3 895
		Formation - Renforcement des capacités femmes AGR (apiculture, plantes aromatiques et médicinales)	24 000			24 000	2 749

**RESULTAT 4**

Produit 4.1	Transport et hébergement de représentants de l'association / de la communauté pour promouvoir leur projet ou effectuer des visites d'études	5 000	5 400			10 400	1 191
Produit 4.2	Réalisation d'une étude d'évaluation du projet à mi-parcours, afin de réajuster la mise en œuvre	15 000	900			15 900	1 821
Produit 4.3	Organisation d'un atelier final d'évaluation et de capitalisation	15 000	1 800			16 800	1 924
TOTAL (en MAD)		384 650					
<i>Provision pour imprévus (1%)</i>		3 847				3 847	441
<i>Frais de gestion (7%), y compris traduction des rapports de l'arabe en français</i>		26 926				26 926	3 084
<b>TOTAL (en MAD)</b>		<b>415 422</b>	100 120	22 000	530 000	<b>1 067 542</b>	
<b>TOTAL (en USD)</b>		<b>47 586</b>	11 468	2 520	60 710		<b>122 284</b>
<i>% du budget total</i>		38,91	9,38	2,06	49,65	100,00	

<i>Cours du dollar (fin mai 2010)</i>	8,73
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The total project cost is 1,067,542 Moroccan Dirhams, which corresponds to \$122,284 US (Dollar rate at the end of May 2010 – date of project's approval by the CND: 8.73).

The contribution requested from the CBA programme is **415,422 Moroccan Dirhams or \$47,586 US.**

## 6.0 ATTACHMENTS / ANNEXES

### 6.1 Mandatory Documents

Document	Provided	Remarks
Plan or diagram of the project site	X	
Financial attestations	X	Financial report for 2008 = provided. Financial report for 2009 has not yet been established on the finalization date of this file. It will be integrated into the file afterward.
Project coordinator's CV	X	Association president's CV
Co-financing attestation	X	Commitment by Les Eaux et Forêts to providing 500 acacia plants and 500 argan trees, and to support the association in achieving forest plantings (training) SOP commitment (cofinancing and technical support provided to the association)
Project leader's commitment (community contribution)	X	- Report of the meeting held on December 27, 2009 - Volunteer contribution table - Participants' commitment
Photographs	X	

### 6.2 Optional Documents

Document	Provided	Remarks
Training modules programme		Will be completed according to consultant proposals
NGO's organizational chart / and composition	X	List of office members
Other information	X	- Narrative reports for 2008 and 2009 - Minutes of the General Assembly of January 2009

## Photos of the OASIS TARMGUISTE



Project team on site



Members of the association in one of the last oasis gardens of the village



Tracing of old water pipes





Cactus plantation



Site of forest plantations and micro-catchments