

Complete Project Proposal Form

CBA MOROCCO

SUMMARY PROJECT PRESENTATION

1. Project Title:

Strengthening the resiliency of the IGUIWAZ oasis ecosystem 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:

IGUIWAZ Oasis, Rural Commune of Tamanart, Province of Tata, MOROCCO

3. Project Leader:

Association Tiflit pour les exploiters des eaux d'agriculture (Tiflit association for farm water use)

Oasis de Iguiwaz, CR Tamanart

Province de Tata

Maroc

Formed of 60 active members (including 20 women), the community based association works in the field of rural and agricultural development, particularly in regard to the issue of water resources management.

4. Project Goal:

Improving the resiliency of the Iguiwaz oasis ecosystem and build the community's capacity to face the impacts of climate change, including variability (particularly the reduced water resources resulting from increased temperatures and the decrease and instability of rainfall), through reasoned water management, improved resiliency of the agroforestry system, the community's improved capacity to adapt, and the institution of a policy of participative dialogue at the local level.

5. Official Representative:

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6. Partner Organizations:

Le Programme de Sauvegarde et de Développement des Oasis du Sud marocain (POS)

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

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7. Date of launch:

November 2010

8. Project Duration:

18 months

9. Project Total Cost:

1,280,610 MAD / \$153,550 US

10. Amount solicited:

393,120 MAD / \$47,137 US

11. Short Description of the Project

The Iguiwaz Oasis, located in the province of Tata, in Southern Morocco, has nearly one hundred families (approximately 700 residents), most of them living essentially off farming. Like all oases in the region, it is very vulnerable to the impacts of climate change. The increasing scarcity of water and land erosion have been affecting local living conditions, which depend on farming and the use of natural resources.

Southern Morocco's oasis ecosystems, including that Iguiwaz, 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.

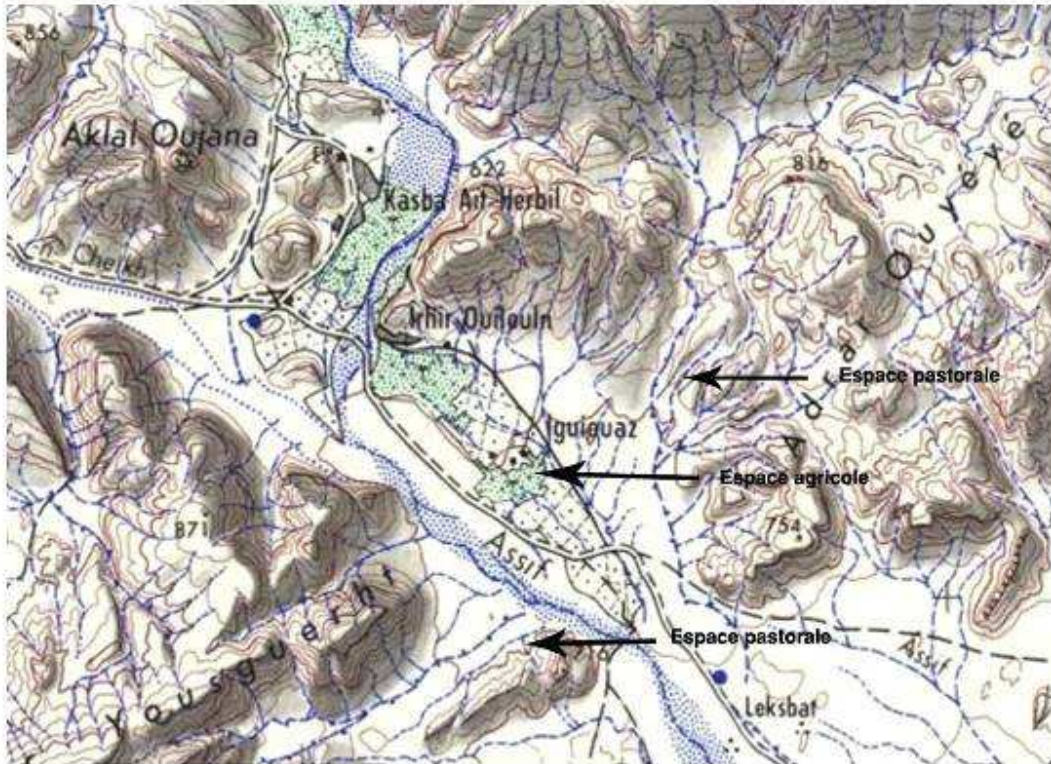
The project aims to increase the Iguiwaz oasis ecosystem's resiliency toward the impacts of climate change, particularly in regard to scarce water resources and accelerated soil degradation. It is based on three components:

- 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 registered throughout its completion, promoted and disseminated in order to encourage the consideration of adjustment to climate change in the regional and national policies, as well as other oasis communities. A participative documentary will be produced in order to promote the Iguiwaz community's contribution to adjusting to climate change.

1.0 JUSTIFICATION AND LOGIC OF THE PROJECT



1.1 Context: Community and Local Ecosystem

The Iguiwaz Oasis is one of the 16 douars (villages) comprising the Rural Community of Tamanart (province of Tata, in southern Morocco). It is located over vast silty and stony land on the Tamanart *oued* (river)'s left bank on the edge of the Sahara.

The Iguiwaz community includes nearly one hundred homes (approximately 700 residents), most of which live essentially off farming. If the oasis has not experienced migration as big as other oasis communities, the trend toward seasonal migration is not as low, particularly for young men who go to the nearest towns to find work in the construction industry or business. At social and educational level, the community is characterized by poor access to secondary education and by a persistently high rate of illiteracy (for example, 60% of farmers are illiterate).

Even though it has always constituted a predominant activity in the community, farming is no longer enough to guarantee good living conditions and family income. This is why most farmers hold a second job, mainly as (construction) workers in the small neighboring towns. In fact, local farming, which depends on the oasis' natural resources, strongly depends on climate variations, and is therefore very sensitive to the effects of climate change. This is mainly subsistence farming. The oasis farming productivity is relatively low as a result of the degradation of conditions favorable to farming (increasing water scarcity and poor management, soil impoverishment), which has led to the community's impoverishment.

Elders and women: foundation of the oasis community

The oasis still enjoys the presence of the old generations who are attached to the land and perpetuate traditional solidarity (*Tiwizi*) and community (*Jemaa*) values, and collective resource management. In the area of climate change and adjustment, the elders are an essential group. Their substantial observations on the impacts of climate change will be extremely enlightening throughout the project, as well as their perspectives on the traditional systems of resource management. The project will value their knowledge and memory.

Women are the keystone of Berber oasis society. Their social and economic role is essential: they take care of seeding, harvesting, managing the herds, gathering firewood and water. They participate in the local life and are in fact responsible for management of the ecosystem and natural resources. They do not have direct access to ownership or decision-making, yet they have a potential of influence that the project will help strengthen by giving them opportunities to express themselves and participate in the local debate. The project will promote women's participation and mobilization, which is essential for adjustment.

Organization of the Oasis Ecosystem

The oasis ecosystem is by nature very fragile to the extent that human activity and natural environment cannot be disassociated. Traditional farming practices have always relied on the continuity of the natural ecosystem, cultivation and breeding, which depend on water and soil. Oasis farming is in fact irrigated farming (the irrigated perimeter is 60 ha for Iguiwaz), depending strongly on access to water.

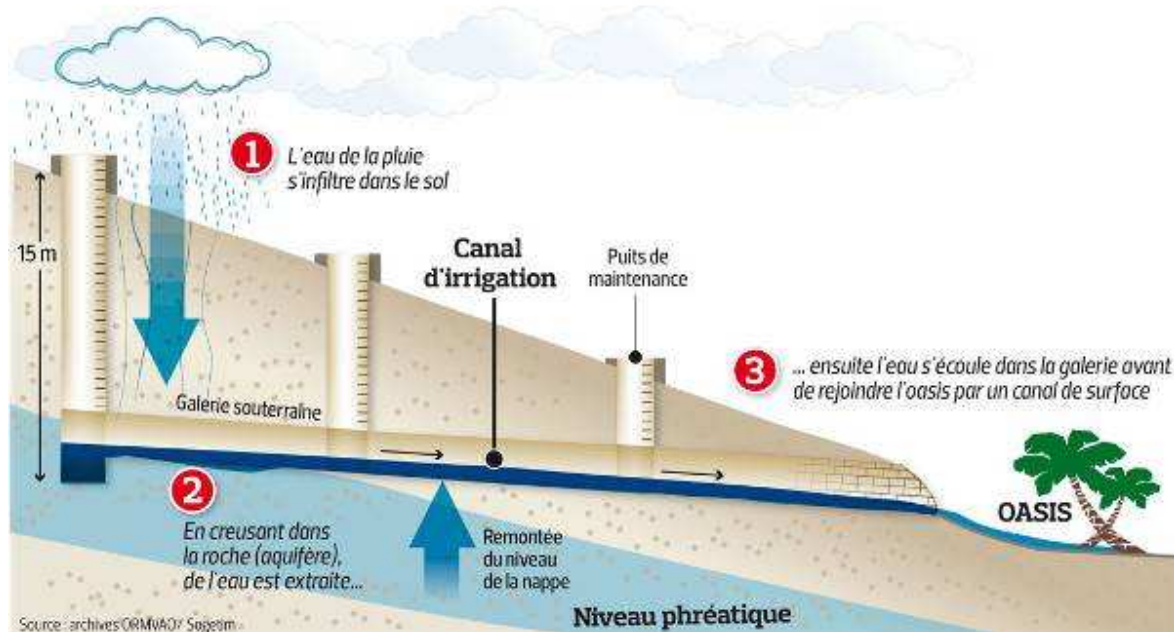
The traditional oasis farming system is organized around the date palm, which, by ensuring protection of the soil and cultivations against the sun, represents the basis of the oasis ecosystem and hard core of the community resources. An oasis' typical ecosystem is comprised of several layers of irrigated 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.

Natural vegetation that is typical of arid environments is essentially comprised of the Saharan acacia, argan tree and low formations (atriplex, artemisia, etc.). The natural ecosystem is used a path over a territory of approximately 10 km² (sheep, goats, and a few cattle). Breeding is practiced in two manners: driving the large herds over a trail (with possible supplements); or small herds of a noble race of sheep (*D'man*) driven by stalling (basic feeding being found on the trail, without rationing; supplemented by barley, date pits and alfalfa).

The Iguiwaz oasis' water resources are found in the Anti-Atlas chain, from the Tamanart *oued's* sloping basin. The rise in its level registered annually helps replenish the water tables throughout the principal river and its tributaries. Water is drawn through a traditional system of *khettaras*, a network of irrigation pipes several centuries old and collective source of water for the entire palm grove. The *khettara*, measuring nearly 3 km long, links a source found at the foot of the mountain located a few hundred meters from the oasis to the irrigated fields.

This ingenious system used to be appropriate for the local environment, but today it presents significant flaws (destruction by time, gradual disappearance of traditional methods to maintain the system, and especially depletion of the sources) that have had an impact on local farming and thus the community's living conditions. The distribution network is in poor condition and water losses are significant throughout the system. In fact, the *khettara's* current flow is 2 to 4 liters/second, while its potential is 10 liters/second. Water flow is held up by obstacles caused by the plugging of certain parts of the pipes due to flooding, which increases infiltration and significantly reduces the possibilities of gathering and leading the water to the farm plots.

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 water turn, pillar of community organization

The Iguiwaz community, like many oasis communities, is organized around the sharing and distribution of water. An oasis relies above all on the management of water scarcity, which implies consensus and collective organization. This is a method of distributing resources, but even more so, this is a social code on which the community is based.

In the Iguiwaz oasis, the status of water is *melk* (family private property by Muslim right) and independent of land ownership. The distribution of water among entitled recipients is made in limited time in a local unit: the *Tanast* (the pot in the tamazight language). The *Tanast* corresponds to 12 minutes of right to water. The water turn (water turn multiplied by number of entitled recipients) is made in 18 days, regardless of crop needs. During periods of heat, for example, the frequency of irrigation needs is less than 18 days for certain crops (vegetables, alfalfa), and requires more flexible water management between the recipients, which is then worked out in an informal manner.

The existing irrigation system is based on gravity and does not favor sustainable resources management, even more so since most crops cultivated do not value water (cereals, alfalfa). Large quantities of water are lost through evaporation, runoff, and by the practice of submerging plots.



The irrigation water storage basin

1.2 Climate Situation

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

Climatic 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 local climate is Saharan, characterized by high temperatures in the summer, which can surpass 40°C during the hottest months (June-August). Evapotranspiration is strong (> 2050 mm). Rainfall is as irregular as it is weak: 150 mm on average on the region's mountain peaks and 80 mm in the plains. The zone is characterized by an acute water deficit and annual supply in the form of short and violent flooding of the Tamanart *oued*.

Average annual rainfall registered from 1976 and 2004 is 160 mm, but variability between rainy and dry periods is strong. Rainfall does not surpass 18 mm (10% of annual rainfall) during the dry period (April to September), while 90% of annual rainfall is registered during the rainy season (October to March).

Pre-desert Southern Morocco faces several structural (baseline) climate phenomena:

- 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. This increase is tied to climate change.

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 Tata region (where Iguiwaz 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 Iguiwaz, 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 20th century to 4 million today).

Today, two thirds of the Iguiwaz palm grove is abandoned. 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 m³ of irrigated water).

The combined impacts of climate change and persistent unsustainable practices are thus endangering the region's and country's 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 Iguiwaz 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**.

Threats weighing on the ecosystem and soils:

- 1- **Baseline climate factors (current situation):**
 - Alternating droughts and floods;

- Structural rarity of water resources and distance of the source on which the Oasis depends (2 km, which is a large distance from the irrigated farm plots);
- Violent winds coming from the South (Chergui and Sirocco): sand-covering and salinization of the water circulation networks.

2- Anthropogenic factors (man's action):

- Farming practices relying heavily on water consumption (submersion, crops demanding high volumes of water and producing low yields, land overexploitation);
- Practice of extensive breeding and overexploitation of endemic natural species;
- Abandonment of 2/3 of the palm grove surface and truck farming crops, leading to desertification of the earth
- Deterioration of traditional irrigation channels.

3- Factors relating to future climate change:

- Increase in frequency and intensity of the droughts and floods;
- Increase of the inter-annual climate variability: making it difficult to make predictions;
- Aggravation of water scarcity and increase of the structural constraints to the oasis ecosystem.

Baseline solutions contributed by the project (Southern Oasis Programme)

The project aims to solve baseline pressures through direct intervention on the water access and circulation systems. The baseline solutions, funded by the Southern Oasis Programme (SOP), consist 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. The training programme provided by this project will promote subsequent water resources management.
- 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, replanting of species suitable for the local environment and community's needs (by replacing species that cannot adapt and consume too much water).

The project intervenes not only within the oasis (farm crops, water and soil management, sustainable farming practices), but also in the environment ecosystem (upon which the oasis depends). Forest plantations and micro-catchment will enable to reconstitute deteriorated resources and make them more resistant to drought and flooding, and will also encourage local farming (water infiltration, which is favorable to the oasis; protection of residents against the impacts of flooding, etc.).

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

The Iguiwaz community depends mainly on the oasis and forest ecosystem. Resources management and climate change have not been favorable to this ecosystem in the last few decades, and have caused impoverishment within the community.

Iguiwaz residents will benefit directly from the improvement of their ecosystem's resiliency, since they depend on it for their resources, living conditions and economic activity. They will experience improved access to water while developing new collective management capacities. They will also benefit from the establishment of sustainable crops, all of which will be chosen according to their usefulness for residents (either for local consumption, or to be transformed for commerce, thus generating revenue). Forest planting will also be favorable for revenue-generating activities (argan oil, acacia honey, cactus derivatives, etc.).

In the longer term, all of the project's activities will led to sustainable benefits for the community, because the resources regenerated will be sustainable, and thus will allow for improved conditions and quality of life.

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

Iguiwaz Oasis is representative of many Moroccan oases. Its potential for reproduction, including on a large scale, is significant.

Preserving the oases is a national priority project. Their significance for Moroccan society and their environmental role are essential (44,000 ha of oases in Morocco; 1 million inhabitants). This is therefore a pilot project both for the CBA programme and for the national programme to promote Oases (Southern Oasis Programme, project partner).

The Iguiwaz pilot project aims to support adjustment to and highlight the impacts of climate change on the oasis ecosystems. 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 Africa Adaptation Programme (AAP-UNDP). The experiences acquired from the project will contribute to the process of developing the Communal Development Plan of Tamanart, and they will also be diffused to other communes / provinces in order to promote awareness about adjustment to the development strategies.

Support for communication and sharing experiences will be provided to enable dissemination of the lessons learned to other Moroccan oasis communities. In particular, a participative documentary was produced on the project to promote the community's contribution to adjustment. This documentary will be broadcast widely in Morocco, on the African continent (thanks to partner Africa Adapt's Knowledge Sharing Innovation Fund), and throughout the CBA global network.

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 concrete 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.

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 of 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 (Touiza), and a potential for local stimulation. The production of a participative documentary early in the project, whose aim is to mobilize the entire community through the organization of workshops, has enabled to support the integration of all community groups and their mobilization for the project.

2.0 COMMUNITY APPROPRIATION

2.1 Project Formulation

The project was developed in several steps, through collective work conducted by the project leader and its partners (SOP national and local coordinators, GEF-SGP national coordinator, CBA mission leader). 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.

Community appropriation was strengthened by production of the TIWIZI documentary, which particularly promoted young people's and women's participation and ensured their mobilization for the project's activities.

2.2 Implementation of the Project

The Tiflit 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 Tata 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.

The project's success depends greatly on the residents' strong and voluntary involvement in each step of its completion. Involvement will be guided and encouraged by the organization of small local events that will value volunteer participation. These community events will aim to increase mobilization of the most vulnerable, particularly women, young people and small farmers. Filming of the participative documentary, for example, was a significant moment in

community mobilization, because it took place during workshops where community members were able to express themselves and participate in the filming.

2.3 Project finalization and sustainable appropriation durable by community members

Community members will be the ones to implement the project directly, under the leadership of the TIFLIT Association. 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 (tiwizi) and the community approach to natural 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.

Volunteer Contribution to the CBA IGUIWAZ 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	24	1	23	6	6	-	*	-	-	10 D * 24 V = 240VD	10 D * 24 V * 70 dh = <u>16,800 dh</u>
Arboreal planting (pal trees, almond trees, olive trees, fig trees, carob trees)	- Labor - Access to tools - Access to plots (2.5 ha) - Water supply for irrigation - Labor for plants upkeep	24	1	23	6	6	-	*	-	-	10 D * 24 V = 240VD	10 D * 24 V * 70 dh = <u>16,800 dh</u>
		14	14	-	3	2	-	*	-	-	5 D * 14 V = 700VD	5D 8 14 V * 70 dh = <u>4,900 dh</u>
Sorghum and clove planting	- Labor / planting and maintenance - Access to tools (need for a tractor) - Access to plots 1.5 ha - Water supply for irrigation - Labor for plants upkeep	38	14	24	6	8	-	*	-	-	15 D * 38 V = 570VD	15 D * 38 V * 70 dh = <u>39,900 dh</u>
Forest planting (acacia, argan tree, cactus)	- Labor for site delimitation (10 ha) - Labor for planting - Labor for cactus fence - Tools and material supply - Site surveillance	80	14	64	-	36	-	80	-	-	30 D * 80 V = 2400VD	30 D * 80 V * 70 dh = <u>168,000 dh</u>
			-	2	-	-	-	-	-	-		30 D * 2 V * 140 dh = <u>8,400 dh</u>
Micro-catchment construction	- Labor for site localization - Construction work force - Tools and material supply - Site surveillance	10	-	10	-	-	-	-	-	-	30 D * 10 V = 300VD	300 DV * 70 dh = <u>21,000 dh</u>
		2	-	2	-	-	-	-	-	-	60 VD	60 VD * 70 dh = <u>4,200 dh</u>
Training	- Organization and mobilization of	20	8	12	-	13	-	20	-	-	8 D * 20 V	8 D * 20 V * 50 dh

	participant groups (inform people and have them attend training) - Active participation in organized training - Loan of a premises or a plot for training	45 pers. Yes	20	25	-	18	-	45	-	-	= 160 VD	= <u>8,000 dh</u>
Participation in meetings with other organizations	- Presentation of the project at meetings with other associations	5	2	3	-	5	-	5	-	-	20 VD	20 VD * 100 dh = <u>2,000 dh</u>
Mid-course evaluation	- Participation in evaluation workshops	6	2	4	-	6	-	6	-	-	2 D * 6V = 12VD	12 VD * 100 dh = <u>2,000 dh</u>
Final workshop	- Participation in the final workshop - Preparation of pastries or meals for participants -	6	3	3	-	6		6			12 D	12 VD * 150 dh = <u>1,800 dh</u>
TOTAL		276	79	195		116		162	0	0	4044	<u>293,900.00</u>

For referral: What volunteer mechanisms already existed in the community prior to the CBA project? (for example, traditional mutual assistance mechanisms, associations, etc.)

TIWIZI (solidarity) is very present in this community, where men and women, young and old work together with a strong sense of community. This solidarity applies to natural resource management, farming, and the building and maintenance of infrastructure.

Cross-generation knowledge sharing and savoir-faire is also a rooted mechanism that the project will value.

These traditional adjustment mechanisms are significant for the participative documentary produced by the community.

For referral: Number of volunteers in the community already committed to climate change adjustment activities prior to the CBA project.

Most of the community members are involved in environmental activities, natural resources management, farming or breeding, which contribute to preserving natural resources. Without specific data, we estimate the 50% of the population is involved (approximately 350 people).

For referral: What are the opportunities or obstacles that can encourage or prevent people from participating in volunteer work?

The main obstacle is the men / women divide, which requires the organization of separate workshops and finesse to implement the project. However, for concrete activities (field work, etc.), men and women can work together and their contributions complement each other. At times, it can be difficult to mobilize volunteers for those activities that produce long term effects.

3.0 DESCRIPTION OF THE PROJECT LEADER

3.1 History of the organization, context and capacities

The Tiflit association was founded in 2002 for users of water for farming, and it is committed to agricultural development, and particularly in developing hydraulic systems and collective water management.

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

The association, one third of which is comprised of women, supports the integration of all community members, particularly women, who are a real force for sustainable management of the ecosystem. Women's participation in oasis life is an essential and ancestral component of local society, and the association aims to provide opportunities that will involve men and women, young and old, small and large farmers toward a common goal: preserving local resources and helping the oasis system endure through its project to adapt to climate change.

The association has already completed several environmental and natural resources management projects:

- A programme to clean the palm grove (1000 feet of palms were cleaned and thus revitalized to allow for increased productivity) – in 2002;
- A drinking water supply project in partnership with UNICEF and ONEP (national office for drinking water) – in 2004;
- A project to restore the khattara (underground canalizations) and seguia (ground canalizations), in partnership with the Direction Provinciale de l'Agriculture – 2004/2006.

The association belongs to the network of oasis organizations participating in the Southern Oasis Programme (Agency for (Agence pour la Promotion et le Développement Economique et Social des Provinces du Sud / UNDP). As such, it receives support from the SOP to manage and monitor projects.

The association's annual budget is 22,000 Moroccan dirhams (corresponding to approximately \$2,700 US). Its funding is provided within the framework of specific projects.

4.0 PROJECT DESCRIPTION

Project's Overall Objective

Improving the Iguiwaz oasis ecosystem's resiliency toward the risks of climate change, including variability (in particular reduced water resources caused by increasing temperatures and reduced and unstable rainfall), through reasoned water management and the institution of a local participative dialogue policy.

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 – Southern Oasis Programme)

A well with a depth of 37 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 12 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 3.5 ha.

Product 1.2: Establishment of an experimental drip irrigation system (over 3.5 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 3.5 ha.

This pilot implementation will support demonstration, training and awareness raising. This system's development will be promoted and encouraged.

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. 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

- **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)
- **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)
50 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 cactuses as well as natural cactus fences (3000 prickly pear cactuses in total).

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 m³ 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: A participative documentary is produced that highlights the community’s contribution to adjustment

Within the framework of the Africa Adapt Knowledge Sharing Innovation Fund, the association is producing a participative documentary on the communities’ contribution to adjustment. For this, it will receive support from the CBA and SOP, as well as technical partners specialized in participative mobilization in the audiovisual field.

The documentary is a powerful promotional tool for the community adjustment project and dissemination to other communities and public authorities. It will be broadcast in Morocco, on the African continent, and throughout the CBA network worldwide.

Product 4.2: Community representatives participate in meetings with other oasis project leaders and present the adjustment plan to other communities

Community members will meet with other project leaders during workshops or 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 4.3: 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 4.4: 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 participants, representatives, partners and territorial communities.

It will enable 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 Implementation Schedule

CALENDRIER de MISE en ŒUVRE																
IGUIWAZ																
		2010		2011												2012
		nov	dec	jan	fev	mars	avr	mai	juin	juillet	aout	sept	oct	nov	dec	jan
1 - VOLET EAU																
	Produit 1.1 PUIITS COLLECTIF															
	Produit 1.2 IRRIGATION															
2 - VOLET PLANTATIONS ET MICROCAPTAGES																
	Produit 2.1 PLANTATION AGRICOLE															
	Produit 2.2 PLANTATION FORESTIERE															
	Produit 2.3 MICRO-CAPTAGES															
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															
4 - VOLET CAPITALISATION / COMMUNICATION																
	Produit 4.1 REALISATION DU DOCUMENTAIRE PARTICIPATIF															
	Produit 4.1 PRESENTATION / PROMOTION DU PROJET															
	Produit 4.2 EVALUATION MI-PARCOURS															
	Produit 4.3 ATELIER FINAL DE CAPITALISATION															

IMPLEMENTATION SCHEDULE																
IGUIWAZ																
		2010		2011												2012
		Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
1- WATER COMPONENT																
	Product 1.1 COLLECTIVE WELL															
	Product 1.2 IRRIGATION															
2- PLANTATIONS AND MICRO-CATCHMENT COMPONENT																

Product 2.1 AGRICULTURAL PLANTING																	
Product 2.2 FORESTRY PLANTING																	
Product 2.3 MICRO- CATCHMENT																	
3- CAPACITY BUILDING COMPONENT																	
Product 3.1 TRAINING																	
<i>Awareness raising on climate change</i>																	
<i>Resilient farming practices</i>																	
<i>Water management</i>																	
<i>Agroforestry and micro-catchment</i>																	
<i>AGR</i>																	
4- CAPITALIZATION / COMMUNICATION COMPONENT																	
Product 4.1 PRODUCTION OF PARTICIPATIVE DOCUMENTARY																	
Product 4.2 PRESENTATION / PROMOTION OF THE PROJECT																	
Product 4.3 MID-COURSE EVALUATION																	

Product 4.3 FINAL CAPITALIZATION WORKSHOP																
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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. Indeed, current farming and pastoral practices are not sustainable with regard to climate change, but having them evolve will be a long 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.

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.

Finally, one risk is that the community does not sufficiently partake in the project. Indeed, during the entire preparation phase, residents expressed their wish to see the traditional water circulation system rehabilitated (the khetaras). For them, restoring the khetaras was an essential condition for their project's success and future adjustment.

Unfortunately, this restoration cannot be considered for a small project such as this, because it would incur significant costs, which partners cannot meet. Moreover, the traditional system is closely associated with surface irrigation, which unfortunately cannot endure in a context of climate change. The risk is that the community would disengage from the project as a result of their dissatisfaction from their initial request.

4.4 Monitoring and Evaluation Plan

4.4.1 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 3.5 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 TIFLIT association and Iguiwaz 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 midway and 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 18 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 current climate changes and/or climate variability	<i>What is the impact of the lack of water on your means of subsistence?</i>	4.2
Future climate risks assessment	2. Vulnerability of the community's means of subsistence / well being due to the future 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>	3
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>	8.8
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>	5
Initial VRA Score			5.2

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 5.2

Qualitative components gathered through the initial VRA

Vulnerability to current risks (strong)

The principal risk felt by residents is indeed the lack of water. Community members express the significance of water scarcity, in that their livelihood depends mainly on farming, which itself is closely tied to water availability. The lack of water therefore endangers their immediate resources and basic way of life. Moreover, they emphasize the distinction between farm land ownership and the right to water, as well as the uneven distribution of irrigation water, a traditional system that no longer meets current needs. To improve this score and reduce vulnerability, they recommend introducing crops that are less demanding for water, along with irrigation techniques that enable to manage resources better. It should be noted that community members consider that their capacity to manage scarce water resources is very weak because of the poor command of the management system (right to water, unsuitable production techniques, poor knowledge of reasoned irrigation techniques).

Vulnerability to future risks (strong)

Community members perceive the risks caused by the decrease of resources in the future as very serious. In their view, farming will no longer be possible for most farmers (the most vulnerable). To reduce this impact, they recommend adapting crops to water resources (developing crops that demand less water), and introducing localized irrigation techniques to save water reserves.

Adjustment strategy / Barriers (low vulnerability)

The community is very confident about the impact of its adjustment project. It estimates that as soon as farmers will be capable of gathering more water, the local economy will improve as well as incomes and the population's living conditions.

The real barrier for residents is water.

Sustainability of the adjustment process (moderate vulnerability – moderate confidence of community members)

The community appears moderately optimistic about the sustainability of its ability to adjust beyond the project's intervention framework (indicator 4). The reasons for this relative pessimism are namely young people's lack of interest in farming and the fear of a gradual disappearance of oasis farming. Moreover, the system of right to water, which regulates access to water is considered as unequal, and community members feel that this system could impede future adjustment.

Monitoring and evaluation of VRA indicators

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

	<i>Schedule of VRA session</i>	<i>Who is responsible for leading the session?</i>	<i>Who is responsible for collecting data?</i>
<i>Initial VRA</i>	Spring 2009 (+ Completed in November 2009)	Consultants (+ SOP / CBA)	Consultants
<i>Intermediate VRA</i>	Spring 2011	Local SOP coordinator Association TIFLIT	Local SOP coordinator
<i>Final VRA</i>	Spring 2012	Local SOP coordinator TIFLIT Association	Local SOP coordinator

4.5 Project management

4.5.1 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 Tata SOP coordination
- The Tiflit 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 TIFLIT association is responsible for implementing the project's activities and respecting its schedule. It will receive support from the local Tata Southern Oasis programme, 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.

5.0 PROJECT COST AND FINANCING PLAN

5.1 Total project cost and amounts required:

	Description de la ligne budgétaire	Financement CBA	Contribution communautaire		Programme Oasis Sud	Eaux et Forêts	Africa Adapt	TOTAL (en MAD)	TOTAL (en USD)
			En nature	En espèces	En nature	En espèces			
RESULTAT 1	Produit 1.1	Puits collectif			370 000			370 000	42 578
	Produit 1.2	Expérimentation irrigation goutte-à-goutte (4ha)	100 000	16 800	150 000			266 800	30 702
RESULTAT 2	Produit 2.1	Achat des plants et semences	35 000					35 000	4 028
		Mise en œuvre de la plantation (main d'œuvre, matériel...) et entretien (arbres, et plantations fourragères)		61 600				61 600	7 089
	Produit 2.2	Achat des plants et clôture en cactus (3000 raquettes de cactus financées par CBA et 1000 plants d'arganier et d'acacia donné par les Eaux et Forêts)	9 000			3 000		12 000	1 381
		Mise en œuvre de la plantation et gardiennage		176 400				176 400	20 299
	Produit 2.3	Micro-captages des eaux pluviales: matériaux et appui technique	70 000					70 000	8 055
		Réalisation / contribution communautaire		25 200				25 200	2 900
RESULTAT 3	Produit 3.1	Sensibilisation au changement climatique	5 000					5 000	575
		Pratiques agricoles résilientes (à partir des plantations pilotes) (formateur / matériel de formation / visites de sites)	40 000					40 000	4 603
		Gestion résiliente des ressources en eau / mise en place et utilisation optimale de l'irrigation localisée (formateur / matériel de formation / visites de sites)	30 000					30 000	3 452
		Pratiques sylvopastorales résilientes (à partir des plantations pilotes) (formateur / matériel de formation / visites de site)	15 000					15 000	1 726
		Renforcement des capacités AGR (apiculture, plantes aromatiques et médicinales) (formateur / matériel de formation / visite de sites)	25 000					25 000	2 877
		Organisation / mobilisation / local		8 000				8 000	921

RESULTAT 4

Produit 4.1	Réalisation d'un documentaire participatif sur la contribution des communautés à l'adaptation					70 890	70 890	8 500
Produit 4.2	Transport et hébergement de représentants de l'association / de la communauté pour promouvoir leur projet	5 000	2 000				7 000	839
Produit 4.3	Réalisation d'une étude d'évaluation du projet à mi-parcours, afin de réajuster la mise en œuvre	15 000	1 800				16 800	2 014
Produit 4.4	Organisation d'un atelier final d'évaluation et de capitalisation	15 000	1 800				16 800	2 014
TOTAL (en MAD)		364 000						
Provision pour imprévus (1%)		3 640					3 640	436
Frais de gestion (7%)y compris traduction des		25 480					25 480	3 055
TOTAL (en MAD)		393 120	293 600	520 000	3 000	70 890	1 280 610	
TOTAL (en USD)		47 137	35 204	62 350	360	8 500		153 550
% du budget total		30,70	22,93	40,61	0,23	5,54	100,00	

Cours du dollar (octobre 2010)	8,34
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6.0 ATTACHMENTS / ANNEXES

6.1 Mandatory Documents

Document	Provided	To be provided / Explanations
Plan or diagram of the project site	X	
Financial attestations	Association's financial situation for 2009	
Project coordinator's CV	Association President's CV + Association Treasurer's CV	
Co-financing attestation		To be provided
Project leader's commitment (community contribution)	X	
Photographs	X	

6.2 Optional Documents

Document	Provided	To be provided / Explanations
Training modules programme		Will be completed subsequently based on consultant proposals
NGO's organizational chart / and composition	X -List of office members	
Other information	X - 2008 and 2009 narrative reports - Minutes of the General Assembly of December 2008	

Photos of the IGUIWAZ OASIS



Community meeting in preparation of the project



Mobilisation of young people

Mobilisation of young people



Cereal crops protected by the palm trees



Igoul site – forestry and micro-catchment component

Diagram representing the project sites

