



PROJECT OURAY:

**INSTALLATION OF AN IRRIGATION AND
CLEAN DRINKING WATER SYSTEM**



The Tifnoute Valley of the Toubkal National Park, Province of Taroudant,
In the High Atlas Mountains, Morocco

Submitted by the High Atlas Foundation
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Project Partners:

Rural Commune of Toubkal, Ministry of Interior, Morocco
High Commission of Waters Forests, Morocco
Ministry of Agriculture, Morocco

April 2011

Project Description:

This project kindly seeks \$175,000 to construct a 7 kilometer irrigation delivery system and new agricultural terraces upon which 10,000 cherry and walnut trees will be pressure/drip irrigated. Further, the clean water delivery systems (the source is a spring located at 3,500 meters beside the High Atlas' Ouary summit) enables this project to also provide potable water for the 14 village beneficiaries. The project will economically, environmentally, and in regard to public health, significantly benefit these villages (including 4,000 people) in the Tifnoute Valley of the Rural Commune of Toubkal in the Province of Taroudant. Project Ouray is one of twenty viable irrigation projects in the Tifnoute region, but it is the one project that benefits the largest number of people because of the location of the irrigation/drinking water system's source and the opportunity to direct its flow along a descending mountain range that runs along 14 of the 43 villages of the Tifnoute Valley. The project installs a piped water delivery system so that the water that currently flows from the spring (which remits 100 liters per minute during summer months) will no longer flow directly down the mountainside into the river, but will be diverted along the mountain summit. Below the mountain summit, the project's new agricultural terraces will enable pressure/drip irrigation of the orchards planted on it, maximizing water efficiency and the number of fruit trees (10,000 walnut) that can be planted.

Project Objectives:

- Double average household income levels benefiting 4,000 people through planting and harvesting 20,000 cherry and walnut trees of natural (non-pesticides requiring) varieties
- Environmentally stabilize the mountain area by constructing agricultural terraces that prevent the devastating erosion and mud slides caused by the deforestation (of Oak and Junipers) that was complete by the 1950s
- The participatory design, planning, and completion of appropriate potable water systems for 14 villages in the Toubkal region
- A reduction in the incidence of water-borne diseases, and in particular, a lower infant mortality rate in villages.
- Diffuse modern irrigation systems through installing pressure/drip systems and basins to enable the efficient use of water supplies and the provision of clean drinking water

Project Implementation:

- The distance from the spring (the irrigation system's water source) to the point where the water will service the first village is two kilometers. Additionally, there are five kilometers between the first village and the last village the irrigation system will service (see map). The project will also deliver water to the area where the proposed health clinic is planned to be built, which will benefit all of the 43 villages of the commune and valley.
- Installing pre-manufactured water pipes, relative to constructing an open cemented canal, will reduce labor and material costs, and avoid losses of water due to evaporation. A water basin will be constructed at the summit above each of the 14 villages in order to

contain the water at an opening of the irrigation pipe so that people of each village can irrigate their respective agricultural terraces, and pipe clean drinking water. Labor to construct the irrigation system is paid by the project. Labor to build the agricultural terraces and plant 20,000 fruit trees on them (the High Commission of Waters and Forests is providing the saplings) is in-kind from members of the 14 villages.

- Incorporating drip irrigation systems, rather than utilizing traditional flood irrigation methods, double the amount of fruit trees that can be irrigated. Pressure irrigation technology has already been adopted on commercial farms on the northern and southern sides of the High Atlas, thus local expertise is locally available and will be provided in-kind by the Ministry of Agriculture.
- The project establishes essential infrastructure providing potable water to 14 villages. Infrastructure is a gravity-flow water system that pipes pure water from reservoirs built above villages, from which water runs through distribution systems to public taps near houses, schools and mosques. The project uses local building techniques, knowledge and resources. Training of 2 people from each village designated to ensure maintenance occurs before, during and after construction.

Project Implementation Timetable:

ACTIVITY	TIME
Installation of piped irrigation system	September 2011— January 2012
Installation of drinking water reservoirs and pipe delivery systems	January 2012—May 2012
Building of agricultural terraces	May 2012—November 2012
Installation and training in pressure/drip irrigation systems	December 2012— January 2013
Planting of walnut trees on new agricultural terraces irrigated by the new system	February 2013
Income generated from walnut trees	2020

Project Budget:

ITEM	COST (\$)
Material cost (pipes, cement, rebar, and tools)	105,000
Pressure/drip systems	30,000

Material transport from Marrakech	20,000
Administration (full time project manager, communications, and overhead)	20,000
In-kind labor – provided by benefiting communities (includes labor to build install irrigation and clean water systems, build agricultural terraces, plant trees and mule delivery of material)	100,000
In-kind - government (training and fruit tree saplings)	10,000
Total project cost	285,000
Total amount requested	175,000

About the High Atlas Foundation:



Planning Meeting among Beneficiaries

Being founded by former Peace Corps Volunteers in 2000, HAF is dedicated to the participatory approach to development. This means that local communities determine - through a series [interactive planning activities](#) and dialogue - and manage their own projects. We assist them by facilitating community meetings and providing technical and financial support to their projects.

Thus, HAF's [1 Million Tree Campaign](#) (of which 320,000 have so far been planted benefiting approximately 30,000 people) was born from countless community meetings in different provinces of Morocco that identified fruit tree agriculture as a top priority; HAF's dedication to [clean drinking water](#) (halving infant mortality in a population of 3,000 people) grew from rural mothers and fathers expressing their grief over the loss of their young children from water born diseases; and HAF's [participatory training Center](#) in partnership with Hassan II University in Mohammedia (to date, transferring skills with 50 university students and communal council members) came about from Moroccan people's desire for greater self-reliance and the ability to facilitate their own meetings. We have also responded to help create initiatives determined by women and youth to help meet their important needs. We realize that to scale-up the HAF approach, an ever growing number of facilitators of community planning meetings is needed.

In brief, HAF facilitates and trains facilitators in the participatory approach to community development, and helps to establish the priority projects that are designed in that process. Further, since we train people in the public and private sectors using experiential methods ("learn by doing") with actual communities, the training workshops themselves result in development projects that improve people's lives. To coordinate and develop curriculum for the training programs, HAF created the [Center for Community Consensus-Building](#)

[and Sustainable Development](#) in partnership with the [Faculty of Law, Economics, and Social Sciences of Hassan II University in Mohammedia](#), which is also home to HAF's administration in Morocco. HAF is a US 501(c)(3) nonprofit organization and is Moroccan association.



**HAF's 2011 Community Walnut Tree
Nursery**

Thankfully, we operate in the Moroccan context that is incredibly conducive and receptive to our approach to development. National Moroccan development frameworks - such as the National Initiative for Human Development, the Communal Charter, and regionalization - are all intended to be driven by the "participatory method." HAF's partnership with the High Commission of Waters and Forests has as its goal to bring participatory development to the communities that neighbor all ten of Morocco's national parks. Indeed, the sky and our collective will are our only limits!

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