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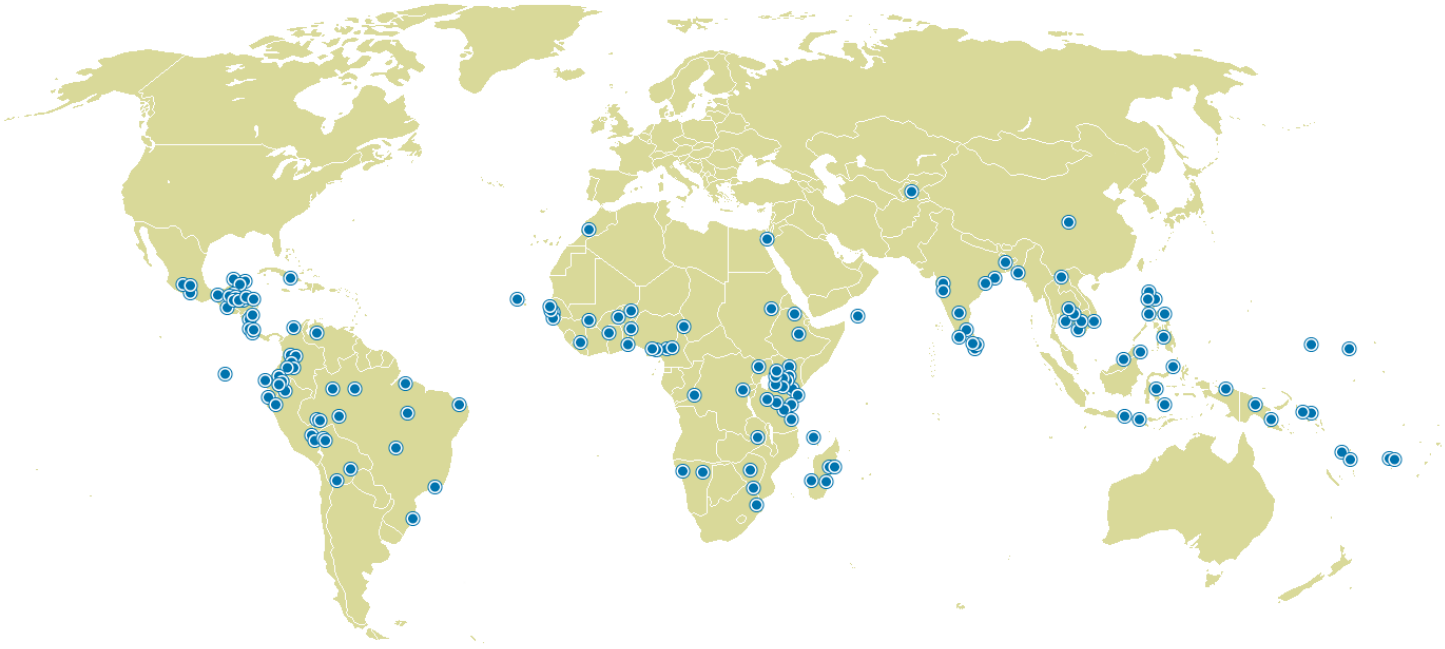
Local and indigenous communities across the world are advancing innovative sustainable development solutions that work for people and for nature. Few publications or case studies tell the full story of how such initiatives evolve, the breadth of their impacts, or how they change over time. Fewer still have undertaken to tell these stories with community practitioners themselves guiding the narrative.

To mark its 10-year anniversary, the Equator Initiative aims to fill this gap. The following case study is one in a growing series that details the work of Equator Prize winners – vetted and peer-reviewed best practices in community-based environmental conservation and sustainable livelihoods. These cases are intended to inspire the policy dialogue needed to take local success to scale, to improve the global knowledge base on local environment and development solutions, and to serve as models for replication. Case studies are best viewed and understood with reference to '*The Power of Local Action: Lessons from 10 Years of the Equator Prize*', a compendium of lessons learned and policy guidance that draws from the case material.



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AMSING ASSOCIATION
Morocco

PROJECT SUMMARY

Amsing Association was eatsbalished by the villagers of Elmoudaa – an Amazirght (Berber) community located in the High Atlas Mountains – to address economic isolation, a lack of social services, and harsh climatic conditions. The association has successfullyreintroduced a traditional land management practice called 'azzayn' which bans herders from grazing their livestock on protected lands. The reintroduction of this regulatory system has allowed native grasses and shrubs to thrive, reduced soil erosion, and helped prevent flooding.

The association has also led a number of infrastructure projects to promote community-based adaptation to climate change. A 'water chateau' stores fresh water for use in times of drought or when floods wash away irrigation ditches, while a water tower provides local residents with access to clean drinking water. In addition to upgrading the community irrigation system, the association has expanded greenhouse farming to explore new crops and improve food security.

TABLE OF CONTENTS

Background and Context	4
Key Activities and Innovations	6
Biodiversity Impacts	9
Socioeconomic Impacts	10
Policy Impacts	11
Sustainability	12
Replication	12
Partners	13

KEY FACTS

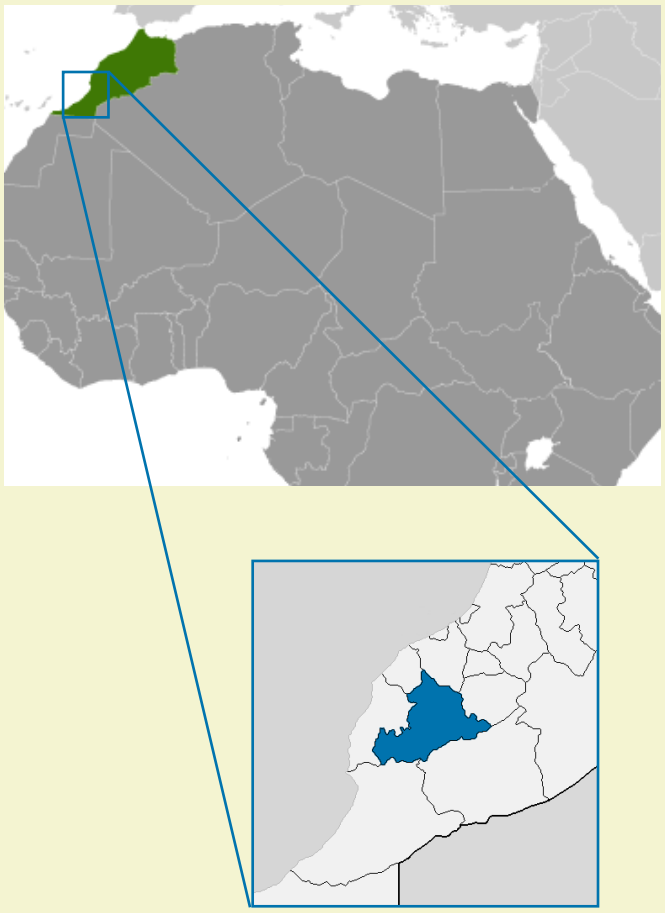
EQUATOR PRIZE WINNER: 2012

FOUNDED: 2001

LOCATION: Douar Elmoudaa, High Atlas Mountains

BENEFICIARIES: 350-strong community of Douar Elmoudaa

BIODIVERSITY: Regeneration of native vegetation



Background and Context

Douar Elmoudaa is a traditional Amazirght (Berber) village and community, located on the southern slopes of the High Atlas Mountains in Toubkal National Park, Morocco. One of 45 douars, or villages, of the Rural Commune of Toubkal, Elmoudaa is located in the Tifnout valley, roughly 20 km south-east of Mount Toubkal, the highest mountain in North Africa. The village is located in one of the most remote areas of Morocco, within the province of Taroudant, in the Souss-Massa-Drâa region. At an altitude of 2,000 m and accessed via 30 km of unpaved road, the village is extremely isolated.

Elmoudaa is the home of a Berber community, indigenous to the region, and the village's history can be traced back over 2,000 years. The community currently consists of 350 people distributed in 28 households. Adult men and women make up 35 per cent of the population (15 and 20 per cent respectively) with children younger than 13 years of age comprising the majority of the remainder. The community members traditionally rely on natural resources for their livelihoods, with forestry, cattle-breeding and small-scale or subsistence farming dominating. Wheat, barley, corn, potatoes, onions, and seasonal fruit are grown and are either consumed directly or sold for income.

Men are primarily responsible for physical labor including plowing and sowing fields, irrigation, and transporting and processing crops. Many men also earn income through construction and occasional work in larger cities. Women and children are responsible for the majority of field work, including harvesting, maintenance and caring for livestock. They are also the primary caretakers of natural resources, since tasks like fetching water and collecting wood typically fall to them.

Impacts of a changing climate

The baseline climate of Elmoudaa is very specific to the Toubkal region, with a combination of Mediterranean and steppe climates. There are wide seasonal fluctuations in the weather, with the local climate historically characterized by a hot, dry summer lasting from April until October, and an extremely cold, humid winter lasting from November until March. However, in the recent past, the community has observed changes in weather patterns, with higher temperatures, less snowfall during winter months, and more unpredictable and violent storms. Extended drought periods are considered cyclical by most locals, coming at five-year intervals and lasting for two years. The general assumption is that two years of drought will be followed by three years of moderate precipitation. There has, however, been a noticeable disruption to this cycle, with drought periods extending beyond their two year averages while producing less rain and more heat than expected. Extreme weather events are increasingly unpredictable and more intense, and their impacts are only exacerbated by damage from intense drought years.

Reduced precipitation in winter has contributed to a decrease in local water resources (snow historically provided water reserves for the spring), while storms and sudden melting of snow (due to increased temperature variability) has led to sudden, devastating water flows and flooding.

Flooding is the most immediate and visible impact of this climate variability, resulting in erosion and damage to local infrastructure and agriculture. Traditionally, seasonal and consistent rains provided sufficient vegetation and soil compaction to support baselines structures such as irrigation, access roads and fields. Lengthening periods of drought followed by short yet violent storms reduce the vegetation and soil quality, further increasing the soil's vulnerability to erosion. It is not uncommon for a two-hour storm to completely destroy infrastructure supporting agriculture and livelihoods, as irrigation channels are washed away by flash flooding, water basins are filled with stones carried by the flood, and fields, crops and roads are destroyed. The short periods of violent storms often result in weeks of structural repair work, further degrading the quality and quantity of crops as community members are forced to reallocate time, money and labor to repairs. Community members are also driven

to strain local forest resources through the clearing of vegetation and destruction of the natural landscape for the construction of new roads, fields or irrigation canals, further degrading the land.

Dependence on agriculture

The agricultural practices and techniques employed by the community today are largely unchanged from those of their ancestors. Fields are terraced and water is sourced via an open-air irrigation ditch that spans three kilometres across a steep mountainside. The source of water is a river shared by three communities on a rotational schedule. Historically, water rights have been a major source of conflict between neighboring villages, even leading to occasional physical confrontations between families. Currently, each community is allowed a certain, limited period each day to use the river. Clearly, even in the absence of the threats posed by climate change, water is a very limited resource in the region.

As a farming community, dependent on agriculture, Douar Elmoudaa is particularly vulnerable to the impacts of unpredictable rainfall patterns and variations in temperature. Unusually hot or cold seasons drastically impact crop yields, which in turn affect both the food and economic security of community members. Community members have observed an increasingly poor quantity and quality of harvest, primarily stemming from increasing erosion and land degradation issues, which are exacerbated by an inefficient and wash-out prone irrigation line, increased weather variability, insufficient knowledge of new adaptive agricultural technologies, and poor natural resource and water conservation techniques.

Poor harvests are beginning to dramatically alter the social and structural fabric of Elmoudaa, as families are forced to seek alternative means of income generation. The result is an exodus of young men to the larger cities in search of work. Adult men are already in the minority in Elmoudaa, and their social and work responsibilities are either left unoccupied or passed on to women or children. The consequences of this additional burden on women and children are threatening the quality of life of many community members. Girls and young women are frequently forced to leave school early in order to attend to family needs, further entrenching themselves in a cycle of dependence and poverty. Although it provides a valuable source of income, the exodus of young men from the village weakens the human resource base of the village and leaves the community ill-equipped to deal with the increasing incidences of infrastructural damage.

The challenges faced by the village are exacerbated by its isolation which limits the community's access to education and healthcare, further increasing its vulnerability to the effects of climate change.

Amsing Association

Amsing Association was originally formed in 2001 by members of Douar Elmoudaa in order to contribute to the development of the village and, in particular, to protect the natural resources critical to local livelihoods in a context of infrastructural isolation and harsh climate. It was re-established in 2010 with the mission to 'fairly and openly govern the community of Douar Elmoudaa while promoting activities and projects that improve the lives of community members and support environmental health'. This association represents the interests of all members of the Elmoudaa community, with all the village families represented in the association, usually by an adult male representative. The association is governed by a democratically-elected president, vice-president, secretary, treasurer, and two assistants. Although the Sheikh is the local leader, Amsing Association makes its decisions as a group, with members sitting together and discussing the potential of each proposed project.

Later, community members formed a separate water management committee in order to benefit from subsidies available through the Moroccan Agriculture Strategy known as the 'Moroccan Green Plan'. The new water association is responsible for overseeing all water use and management issues in the community as well as serving as the primary leadership behind all new technologies, projects, and training related to irrigation, domestic water use and all water rights. On this committee, the community elected to give women and youth unprecedented leadership positions (a significant step in this traditional community where men traditionally dominate in the governance of the affairs of the village). Both segments of the population take active roles in project design and implementation, as well as project management. Youths have taken the majority of leadership responsibilities in the new association, with no administrator over the age of 40.

In 2011, the water management committee merged with the older association to form the current Amsing Association, which oversees the community-based adaptation (CBA) programme currently being implemented in the village. The presence of a youthful leadership ensures the sustainability of new practices and knowledge while ensuring the inclusion of local youth in the initiative.

"Community leaders should be confident in promoting the tools and propositions that work best for their communities. They might be recognized later by decision makers as the best solutions."

Mr Said Zirri, President, Amsing Association

Key Activities and Innovations

Amsing Association has primarily focused its attention on addressing water management and land degradation issues, initiating projects to ensure a secure supply of water and to reverse the negative effects of erosion on the soil. Recent efforts have continued to focus on these themes while also emphasizing the wider challenge of adaptation to climate change.

Land management

Land management activities have included the conservation and revegetation of degraded and eroded lands surrounding the village. The contribution of over-grazing to this problem was addressed by the enactment of a local regulation called an 'azzayn'. This consists of a community-enforced fine, levied on herders who graze their animals in protected areas of land. This has allowed passive revegetation to occur, facilitating the rejuvenation of native grasses and shrubs and thus reducing erosion and flooding in many parts of the village. In this respect, the community is a pioneer in natural resource management among regional communities, being the only village out of 45 in the municipality of Toubkal to have implemented local regulations for the conservation of vegetation. In doing so, Amsing Association has demonstrated a degree of innovation in its approach to land management.

The Association has planted 4,500 feet of cypress trees in the hills above the village, as well as 800 apple trees and 1,000 walnut trees to generate and diversify income. The Association has also organized the construction of rock dams and gabions to correct a ravine that threatens the community and prevent further erosion, with further works of this type also scheduled for implementation.

Water management

Water management activities have been institutionalized through the creation of the community's water management committee. Formed with the help of subsidies from the Moroccan Department of Agriculture, this committee is responsible for oversight of all water use and management issues in the community. Young leaders were selected to ensure the sustainability of the initiative, and the new association has merged with Amsing to manage this project.

Water storage: In order to better manage water supply and ensure reliable irrigation for crops, the Association constructed a reservoir and water tower in 2001 with the assistance of a U.S. Peace Corps volunteer. This allows water to be stored for times when the irrigation ditch is washed away by floods and for times of drought. In this endeavor, the community worked with outside organizations to build a water tower fed from a natural water source about 3,050 meters above the village. The water tower was one of the first initiatives undertaken by the Association. The tower holds days' worth of water that is used to irrigate the community's fields. This helps ensure that the community can protect its crops in cases where a section of the irrigation canal is washed away and may take several days to repair. The tower also provides drinking water to every household in the village, and its construction marked the first time that households in the village had secure access to clean drinking water.

Piped and drip irrigation systems: In 2007, the Association extended a 550 m section of irrigation channel to 3 km. This work also involved burying the new irrigation channels in plastic pipes to reduce the water lost in transit and to reduce the vulnerability of irrigation infrastructure to flash flooding. The realization of underground irrigation channels protects access to water as the traditional open-air pipes were regularly destroyed by floods, and were subject to heavy losses from clogging and evaporation during hot weather. The Association is currently planning a second tranche of the irrigation system of pipes by groundwater, which will further prevent water losses between the source and agricultural parcels (improving to 95% preservation of flow instead of 25% currently). Water-delivery systems are also being strengthened through permanent enclosed irrigation. With the support of the Department of Agriculture, the Commune of

Toubkal, and UNDP, 1,500 meters of piping will replace the existing canal water delivery system in order to ensure efficient, permanent, and wash-out proof irrigation to the community. The piping will be combined with several concrete pressure pools that ease access to repairs and routine maintenance, as well as fix the piping into the hillside. The new irrigation will follow the same course as the current water canal.

In partnership with the Souss-Massa-Drâa regional office of agricultural development (Office Régional de la Mise en Valeur Agricole – ORMVA), ten hectares of drip irrigation is being installed in terraced fields, and farmers are being trained in the technology. The drip irrigation system will be attached to the current water delivery systems and provide an efficient water supply to fruit trees, vegetables, and other income-generating crops. This new system will guarantee farmers a consistent water supply for economically important crops during drought years and decreased rainfall while conserving enough water for staple crops. Farmers will no longer have to choose between income generation and staple foods.

Water purification system: With the support of GIZ (the German Agency for International Cooperation) and U.S. Peace Corps volunteers, community members are constructing an enclosed wash station with an adjacent phytoremediation recharge pool in order to reduce damage to agricultural land from polluted water. Four covered wash basins will allow local women to perform domestic chores such as laundry and dish washing without the threat of introducing dangerous chemicals into the irrigation stream. A water heating system will help to protect women from exposure to the cold climate. All of these techniques contribute to the further improvement of water resource management while improving the quality of life of the local population.

Community-based adaptation to climate change

Under the leadership of Amsing Association, a CBA project has been in development since 2011. Vulnerability assessment sessions were carried out to identify the challenges the community faced and to prioritize the appropriate responses. The resulting program of work aims to protect critical infrastructure through ravine correction, burying of irrigation channels, and piloting a number of innovations such as simple community erosion control techniques, revegetation through tree-planting and bio-engineering. The community is experimenting with new and more adapted crops in a greenhouse, while water management work has underpinned the resilience of their main livelihood. A community-based early storm and flood warning system is under development through which the community will expand their ability to prepare for and manage climate risks. Capacity building workshops held both in and outside of the village, on a wide range of topics from erosion control to climate change understanding, including conservation agriculture and natural resources management, are further supporting the community to adapt and to be able to live with future climate changes, by developing forward-thinking capacities.

Reforestation: The CBA activities include plans to replant 8.35 ha of overgrazed and deforested land surrounding the region with Atlas cypress and high altitude pine. Regrowth will be fostered through fenced protection of young plants and local grazing and vegetation-gathering regulations. An additional hectare of land will be planted around the Rural Commune of Toubkal headquarters, as a way to advertise and raise awareness of the project among other communities of the region.

Construction of gabions and dams: To further address erosion and flood-vulnerability, a series of gabions and rock-dams will be constructed in drainage valleys. This activity is being undertaken in partnership with ORMVA and the Souss-Massa-Drâa regional watershed agency (*Agence du Bassin Hydraulique de Souss Massa et de Draâ*), as well as the Taroudant provincial board. Construction of gabions and rock dams inside drainage valleys will increase the resilience of the ecosystem to flooding by both slowing the flow of rainwater and preventing large debris from washing away large portions of agricultural land. Gabions and rock dams are being constructed in the two identified ravines running through Douar Elmoudaa. This adaptation solution is being undertaken with strong involvement of community members, who will be trained by a professional contractor. Community members will be hired and trained by a company for the main portion of the activity, and will be responsible for implementing the final portion of ravine correction, through community in-kind contributions.

Combating soil erosion: With potential partnership and support from ORMVA and the National Institute of Agronomic Research (INRA), a pilot scheme is being initiated to introduce turf-reinforcement mats on degraded land. The mats will be tested and then installed on one hectare of eroded, steep hillside in order to re-establish vegetation and reduce erosion in highly degraded and vulnerable land. Following the results of the pilot site, this technology will be introduced in other areas within the village. The idea is to train as many people as possible in the use of this tool and try to extend its use in the neighboring villages of the valley.

Greenhouse agriculture: To increase the resilience of agriculture and diversify the community's income, greenhouse agriculture is being developed. Two medium-sized community greenhouses will be built in a central location on land belonging to the Association. These greenhouses will house various food crops including potatoes, onions, tomatoes and legumes as well as some experimental crops. The greenhouse will employ various technologies including drip irrigation and passive-solar heating. Consistent local vegetable production will contribute to enhanced food security for community members, especially following flooding which destroys infrastructure and routinely block access to weekly food markets. Enclosed farming will also decrease the impacts of drought on crops by providing weather-proof farming plots.

Local women will be the primary caretakers of the greenhouse, providing ownership and training for one of the most vulnerable portions of the community. The greenhouse would dually serve as a training location for new technologies. Through in-site training, local women will learn and cultivate new skills in adaptive technologies. The greenhouse will also be used to undertake testing of the suitability and adaptability of crops that might be introduced in the village.

Early warning systems: To address the vulnerability of the region to increasingly unpredictable weather events, two early warning systems are being implemented, in which Douar Elmoudaa will participate. With the support of the Department of Meteorology (DMN), two weather stations (one automatic and one manual) are to be installed in Toubkal National Park along with a program informing the regional population of weather alerts through the national meteorology center. DMN staff will also train local volunteers on weather observations for local forecasting and extreme weather preparation. Community members in up to 45 villages in the Commune of Toubkal will be educated on severe weather affecting the region through an inclusive awareness-raising program, reaching out to men, women and youth.

In addition to the DMN project, a pilot community flood warning installation will be tested. A simple, sensor-based technology will be placed in a strategic location, by the main source of flooding. The sensors are connected with a siren that will alert the community when the water rises to dangerous levels. This equipment will be accompanied by technical and behavioral training to enhance risk preparedness. If the system proves successful, it will be promoted by the DMN and could also be implemented in neighboring villages in the future.

Impacts

BIODIVERSITY IMPACTS

While the work of the Amsing Association has helped to change local attitudes and behaviours for more sustainable resource management, Elmoudaa still faces significant challenges to its natural environment. A 2011 UNDP/Global Environment Facility (GEF) CBA project proposal identified threats to the local environment and biodiversity in three categories: baseline climate and environmental pressures, anthropogenic factors, and additional threats resulting from climate change.

The report noted that the area's naturally steep slopes and sandy soil increase the potential for erosion and land degradation when combined with less rainfall and erratic extreme weather events. These conditions had been worsened by various agricultural and pastoralist practices, however. Excessive terracing (to create new farmland) had contributed to increased erosion along slopes and strained local natural water resources for irrigation uses. Hillsides were also commonly used for grazing of livestock, further reducing biodiversity and exacerbating these pressures. Planting of non-native crops, and particularly cash crops with high water consumption properties, had impacted on native vegetation growth and severely degraded the soil in areas.

The report also describes how previous wood collection and deforestation efforts had dramatically reduced biodiversity in both native vegetation and mammals. As a result, all communities in the vicinity of Toubkal National Park are prohibited to harvest forest resources under threat of financial penalty. Finally, water use practices contributed to more widespread impacts on the local ecosystem. The creation of irrigation canals and re-routing of natural water systems impacted natural river-dependent vegetation and strained the land in areas where canals are dug. Domestic use of water, and particularly use of the irrigation stream for laundry and cleaning, resulted in an inundation of salts and chemicals into the water, eventually resulting in salinization and degradation of land.

As previously noted, these trends have recently been exacerbated by the effects of climate change, as increased intensity and duration of droughts and extreme weather events will further degrade already damaged soils and decrease agricultural output. It was observed that lower agricultural output may well have led to community members relying more heavily on forest resources, straining both biodiversity and land quality.

The main environmental impact of the Association's endeavors has been the through the setting aside of large sections of land for conservation, reforestation and revegetation. By outlawing grazing in certain degraded areas of land through the enforcement of the azzayn system, the community have protected and sustained native shrubs and grasses, allowing them to passively regenerate in areas from which they had disappeared. As a result, Douar Elmoudaa is now home to varieties of native flora that have completely disappeared in other areas of the valley. This passive revegetation, alongside the planting of native tree species on ten hectares of land surrounding the village, as well as benefitting biological diversity, has lessened the effects of erosion in the local area and reduced the risks of flash-flooding.

The construction of the wash station, meanwhile, with a filtration pool to implement natural decontamination of used wash water, will help to prevent soaps and detergents from entering the irrigation canal and local water catchment area. This will alleviate damage to crops and the local ecosystem from hazardous chemicals.

Integrated land and water management techniques, along with the introduction of methods to improve agricultural output, has helped to interrupt the vicious circle of environmental degradation, poor crop yields, and increased dependence on natural resources. The community of Elmoudaa has begun to take control of the social and economic processes affecting its neighbouring ecosystems, and is turning the tide of habitat and biodiversity loss through collective action and community-led innovation.

SOCIOECONOMIC IMPACTS

By bolstering the resilience of the Elmoudaa community to increasing climate variability and future changes in climate, the actions undertaken by Amsing Association and their partners are having a profound impact on the current and, crucially, the future socioeconomic circumstances of the community members. Concrete steps are being taken to ensure the safety of community members as well as to secure their livelihoods and increase their ability to cope with future threats to their way of life.

Resilience to environmental and economic shocks

Much of the Association's work has focused on increasing the community's resilience to flooding and drought, both of which are occurring increasingly frequently in the region. The construction of gabions and rock dams is alleviating the impacts of heaving rains on infrastructure and agricultural land, while improvements to water infrastructure and irrigation systems have strengthened the ability of the community and their agricultural activities to withstand periods of drought and the effects of heavy flooding that frequently interfered with their traditional irrigation system.

The construction of a water tower, providing clean water to all the households of the village, is a major contribution to public health. Alongside the construction of a wash station, this development also frees up the time of women and children to pursue other activities, including, potentially, education. The improvements to irrigation infrastructure, strengthening their durability in the face of flooding, also free up valuable time, labor and financial resources which often had to be directed away from productive agriculture and education in the aftermath of flash flooding, when damage to water canals, roads and fields required the efforts of community members for a period to undertake necessary repairs.

The establishment of early weather warning systems offers a chance to improve the safety of community members and their livestock in the face of extreme weather events, allowing them to prepare in advance and secure infrastructure against impending storms and floods, thus minimizing the human and structural damage caused by these increasingly common events.

The construction of greenhouses increases the resilience of the community's agricultural production to flooding and drought, while allowing the production of a wider range of vegetables and crops and experimentation in a wider range of crops to test their suitability for the village's local environment. This activity provides a secure, local source of vegetables to the village, enhancing income and also nutrition, especially in times when flood damage to roads cuts off the community's access to local markets.

"Our communities are strong when they are well organized, and informed about opportunities."

Ms Fatima Ait Ouchahboune, Member, Amsing Association

Capacity building and women's empowerment

Many of Amsing Association's activities involve a high degree of local training and capacity-building, and involvement of community members in their implementation. These projects provide a valuable local source of training and employment. Construction of erosion control measures involved the training and employment of community members by professional contractors, for instance. The greenhouse project also involves training and skills development of community members, particularly women.

The participation of women has been enhanced by the Association's endeavors, especially under the CBA program of activities. Under traditional, cultural norms and practices, women and men rarely work together and men routinely take on leadership and decision-making roles. Women rarely leave the village or attend meetings with men. To facilitate this tradition in the design of the CBA project, while ensuring the involvement of women in the planning process, separate meetings were held for the men and the women to ensure that both groups had a chance to contribute to the process.

In the design of the village's CBA activities, the creation of specific project components for women ensures their investment and participation, while complying with local customs. The greenhouse agriculture project and the construction of a wash station are specifically focused towards women, giving women the opportunity to take leadership in particular project segments that affect them, and contribute their ideas and experiences, without challenging local social norms.

As women hold the primary responsibility for harvesting and maintaining fields, the steps taken by the Association to protect agricultural production directly benefit women. Women are also key participants in the community-based early warning system that will be piloted in the community. The CBA project includes specific gender participation and empowerment indicators, gender being one of the main focuses of the adaptation initiative.

POLICY IMPACTS

Amsing Association's pioneering work is generating precious lessons and experiences in fields that are critical at the local, national and global levels and this is reflected in the attention that has been paid to the initiative by policy-makers at various levels of governance.

Regional level

Given the success of the project activities implemented in Douar Elmoudaa, the President of the Commune of Toubkal integrated similar activities into the area's recent Communal Development Plan. This development strategy is to be implemented in all 45 villages, allowing the entire region to benefit from the experiences gained by Douar Elmoudaa in the implementation of its adaptation and risk-management activities.

Many of the projects undertaken and planned in Douar Elmoudaa, particularly under the CBA program, are intended to act as pilot projects for the entire region. As such, emphasis is placed on communication of lessons learned, replication, and informing wider policy and practice. Through the extension of successful pilot projects, practices that have been found to be successful in Douar Elmoudaa in the fields of water management, reforestation and land management are now informing practices at the Toubkal National Park level.

National and international level

The Moroccan Department of the Environment, through the National Environmental Observatory (*Observatoire National de l'Environnement du Maroc* - ONEM) and its regional observatories, is also aware of activities being undertaken by Amsing Association, and the continued integration of climate change into their activities at national level is being informed by the success of the approach taken in Douar Elmoudaa.

Concrete partnerships between the local community and national-level government institutions (including those responsible for Agriculture, Forestry, Environment and Meteorology) have played a key role in allowing Elmoudaa's experiences to influence policy, giving these institutions the chance to capitalize on lessons learned for mainstreaming in national climate change adaptation strategies and policies. Support from international programs, such as UNDP-GEF's pilot CBA program, aim for global lesson-sharing and policy influence, contributing to making CBA a priority for development, and building on experiences such as those of Amsing Association.

Sustainability and Replication

SUSTAINABILITY

The efforts of Amsing Association to build the resilience of the Douar Elmoudaa community have benefitted from a long tradition of communal action. Their work has benefitted from the community's characteristic '*tiwiza*' ethos, which implies solidarity and support for the community's common interests. The Association's work capitalizes on this strength, and projects completed over the decade since Amsing Association's foundation have proven to be successful and well-sustained. A great deal of time and effort was spent on planning the Association's latest program of CBA activities which, alongside strong buy-in from all sectors of the community, should ensure the long-term sustainability of the endeavors.

Since the activities being implemented in Elmoudaa serve the interests of all members of the community, protecting their personal safety and securing their livelihoods, there is a great incentive for community members to strive to sustain these efforts. Through capacity-building and awareness-raising, the community is an active leader in the shaping of its own future prosperity and well-being. All segments of the population maintain an active interest in the projects being implemented, and, importantly, youth have been encouraged to take on a great deal of responsibility and leadership in the design and implementation of projects. The leadership of the Association is bolstered by the participation of young members of the community who have returned after several years of education and work in the cities to actively contribute to the development of their community. This is an encouraging indicator of the potential of the Association's work to be carried on by successive generations.

The strong focus on training and capacity-building is a critical component of the sustainability of the initiative. Capacity-building workshops held both inside and outside of the village, on a wide range of topics from erosion control to climate change understanding, including conservation agriculture and natural resources management, are further supporting the community to adapt and to be able to live with future climate changes, by developing forward-thinking capacities. Since the initiative and its activities are now enshrined in local and regional policies, continued support for the activities and their continued implementation and maintenance are likely.

REPLICATION

The influence the Amsing Association's work has had on local policies offers assurance of the activities' likely replication in other villages in the region.

Many of the projects undertaken and planned in Douar Elmoudaa, particularly under their CBA program, are intended to act as a pilot projects for the entire region. In fact, the Ministry of Environment expressed the importance of the success of the Elmoudaa project in its plans to develop an adaptation project that might mobilize funding from the Adaptation Fund, an international financing mechanism for climate change adaptation. This potential project would replicate the successful demonstrated activities of the Elmoudaa CBA project at a larger scale. As such, specific emphasis is placed on communication of lessons learned, replication, and informing wider policy and practice. Community and Association members will be expected to serve as advisers and mentors for future projects in the region, facilitating inter-community knowledge sharing and inspiration.

In this respect, the strong relationships between Amsing Association's leaders and the leaders of other associations in the region enables association leaders to learn from each other's experiences as well as to collectively influence government policy and attract resources to this remote area. Good relationships between village leaders facilitate the dissemination of lessons learned from Douar Elmoudaa to its neighboring communities. The Association has garnered much respect from other villages in the region, and the Association is now supporting, advising and guiding its neighbors on ways to develop sustainable projects and secure outsider assistance.

Specifically, the experience of collective forest management has been promoted and replicated in the Tifnout valley.

Knowledge sharing and capacity building are cornerstones of the Amsing initiative, particularly in respect of the CBA component. At the community level, knowledge is passed along in peer-to-peer settings, in expert-led training sessions, through experimentation and by studying best practices from other projects. Monitoring and capitalization of lessons learned from the initiative is generating profound knowledge that will be shared with partners through workshops, site visits, and through the design and dissemination of a participatory knowledge product, in order to reach out from local to global levels and to share with and inspire other communities.

Through sub-national partnerships, such as with Toubkal National Park, communities stretching to the far sides of the High Atlas Mountains will have the opportunity to gain from the knowledge passed on from this project. For the Ministry of Environment, as well as for international partners and aid organizations, Elmoudaa provides a remarkable example to replicate. These partners also contribute to the knowledge-sharing process by promoting the initiative at national and global levels. Nationally, the Association participates in the UNDP-GEF network of CBA program associations. As such, it has had several opportunities to present its work to other Moroccan associations, sharing lessons and best practices, especially during a national workshop organized by the CBA program (UNDP-GEF) in November 2011.

Active mobilization of a diverse range of partners strengthens the project's potential for scaling up from local to national levels. The CBA component of Amsing's work will be a pilot nucleus for a wider approach that will encompass the entire Tifnout Valley, through the support and involvement of the Rural Commune of Toubkal and of the Toubkal National Park Water and Forest Regional Directorate. The initiative has mobilized Amsing's partners, whose involvement will benefit the 45 communities of the Commune of Toubkal. For example, awareness workshops and training on community management of rural roads are due to be held in an approach to protect against weather damage. These workshops, organized by the rural municipality, in partnership with the U.S. Forest Service (USFS), will affect communities throughout the Tifnout Valley and the Commune of Toubkal, building on Amsing's work and partnerships.

"Communities need the assistance of policymakers, but before that we need your recognition."

Ms Fatima Ait Ouchahboune,
Member, Amsing Association

PARTNERS

Over the years, Amsing Association has benefitted from the diverse range of strong partnerships that it has created and sustained with over fourteen local, national and international government departments, NGOs and development organizations. The contributions of these partners to the Association's work are outlined below.

UNDP-GEF CBA Morocco Team: The primary funding source for the CBA component of Amsing Association's work; Amsing Association implements one of the pilot initiatives of UNDP-GEF's CBA program in Morocco. The Morocco Team team will facilitate workshops, remain in permanent contact with all project partners, and participate in the implementation, monitoring and reporting of the project.

UNDP-GEF Small Grants Programme: Provided a grant of USD $34,209 to Amsing Association in 2011 for the execution of its program of CBA activities.

U.S. Peace Corps: Has provided the community of Elmoudaa with three volunteers who have lived and worked in the community for at least two years each. In the past, Peace Corps has partnered with the community to build a water basin, water tower, plant fruit trees, install irrigation and assist in capacity-building of local associations. For the CBA project, Peace Corps will act as project facilitators, advisers, liaisons to regional and national partners, and assist in capacity building and training. The current volunteer will also assist in new technology research, specifically on turf reinforcement mats, and will assist in any administrative or organizational work required by the local association.

German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit* - GIZ): Is mainly providing support for construction of the washing station equipped with collective phytoremediation to prepare wash water for reuse in agriculture and toilets.

United States Forest Service: Is providing technical support to the CBA program, and holding awareness workshops and training on community management of rural roads.

Morocco's High Commissariat for Water and Forests: Is the principal government agency responsible for managing the lands on which many of Amsing Association's activities take place; their regional extension services partner with Amsing on CBA, reforestation, and water tower construction. The High Commissariat's contribution to the initiative is in-kind but has been instrumental for the forest and native vegetation generation component. The High Commissariat's inputs include hands-on training in tree-planting, including digging, planting and maintenance of trees; and provision of forest plant seedlings. The High Commissariat for Water and Forests provided 4,500 Atlas Cypress seedlings at the beginning of the project and 2,000 additional seedlings in 2012. A further 4,000 seedlings will be provided in 2013.

Department of Agriculture (extension services): Is a relatively new partnership for Amsing Association and supports projects regarding agricultural methods and new technologies that improve output and sustainability of farm systems. The Department of Agriculture will assist in the construction of erosion control measures, provide materials for the installation of piped irrigation, and will support the implementation of and technical training on drip-irrigation.

Office of Agricultural Development (*Office Régional de la Mise en Valeur Agricole* - ORMVA): Is providing technical assistance and capacity-building for the establishment of a drip-irrigation system and the construction of erosion control measures.

The Ministry of Environment: Provides support to the activities of the Association, with a view to building on this pilot project to design a larger adaptation project in the region.

National Department of Meteorology (DMN): Is supporting the installation of two weather stations (in Toubkal National Park) alongside a program to inform community members of weather alerts through the national meteorology center. DMN staff will also train local volunteers on weather observation for local forecasting and extreme weather preparation.

Regional Watershed Management Agency (*Agence du Bassin Hydraulique de Souss Massa et de Draâ*): Partnering with Amsing in the construction of a series of gabions and rock dams to control erosion

Rural Commune of Toubkal: Is a principal supporter and project partner. The President of the Commune ensures support of the association in implementing its activities and liaising with partners. The Commune will specifically support the irrigation canal protection, the valley-wide early warning system, and dissemination and scaling-up of successful activities through incorporation of lessons learned in the Communal Development Plan.

Province of Taroudant: Is partnering with Amsing in the construction of a series of gabions and rock dams to control erosion.

National Institute of Agronomic Research (*Institut National de Recherche Agronomique* - INRA): Is a projected future partner; the Association is discussing with INRA the possibility of a partnership under which INRA would provide technical assistance in improving the resilience of local agriculture.

FURTHER REFERENCE

- Amsing Association Equator Initiative profile page: http://www.equatorinitiative.org/index.php?option=com_winners&view=winner_detail&id=31&Itemid=683
- Community-Based Adaptation in Morocco: Successful community engagement for increased resilience and better livelihoods. www.thegef.org/gef/greenline/april-2012/community-based-adaptation-morocco

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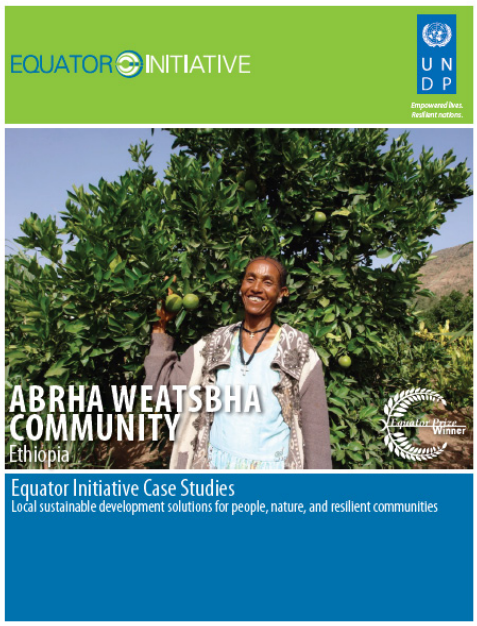

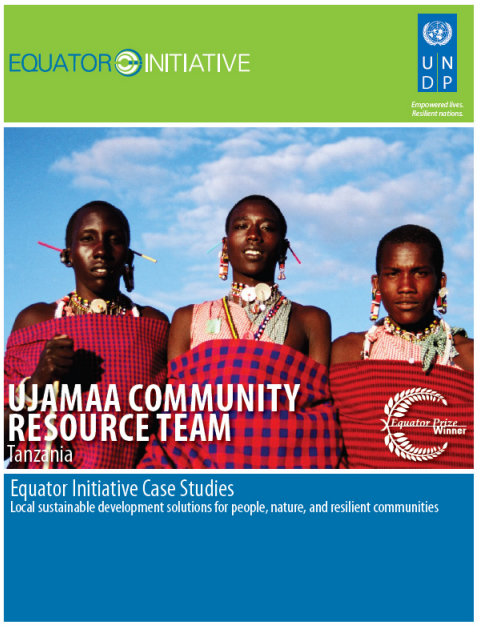

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