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ST. CATHERINE MEDICINAL PLANTS ASSOCIATION Egypt

Equator Initiative Case Studies Local sustainable development solutions for people, nature, and resilient communities

UNDP EQUATOR INITIATIVE CASE STUDY SERIES

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 '<u>The Power of Local Action: Lessons from 10 Years of the Equator Prize</u>', a compendium of lessons learned and policy guidance that draws from the case material.



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Acknowledgements

The Equator Initiative acknowledges with gratitude St. Catherine Medicinal Plants Association, and in particular the guidance and inputs of Mr. Adel Abd Alla Soliman. All photo credits courtesy of St. Catherine Medicinal Plants Association. Maps courtesy of CIA World Factbook and Wikipedia.

Suggested Citation

United Nations Development Programme. 2013. St. Catherine Medicinal Plants Association, Egypt. Equator Initiative Case Study Series. New York, NY.

ST. CATHERINE MEDICINAL PLANTS ASSOCIATION Egypt

PROJECT SUMMARY

St. Catherine Medicinal Plants Association Association protects and cultivates native and endemic species of medicinal plants in the St. Catherine Reserve in Sinai, while developing alternative livelihood options for the area's economically marginalized Bedouin population. The reserve contains several unique and endangered medicinal plant species which have been threatened by overharvesting, collection for use as fuel, and overgrazing.

The association promotes home gardens, provides alternative energy solutions, gives hands-on training on sustainable harvesting techniques, and creates market supply chains for locally produced medicinal herbs, handicrafts and honey. Alternative livelihood programmes, focusing on women in particular, support farmers through the process of planting through to the marketing of products. Revenues from association activities have been invested in a rotating fund which allows community members to access small loans.

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KEY FACTS

EQUATOR PRIZE WINNER: 2012

FOUNDED: 2008

LOCATION: St. Catherine's Reserve, Sinai

BENEFICIARIES: Over 500 Bedouin families

BIODIVERSITY: Endangered native & endemic plant species



Background and Context



The Sinai Peninsula, home to St. Catherine Medicinal Plants Association, is the only part of Egypt's territory located in Asia rather than Africa, and effectively serves as a land bridge between the two continents. St. Catherine's Reserve is located on the southern tip of the peninsula, encompassing almost the entire high mountainous area of South Sinai. The reserve spans an area of 4,250 sq. km. and is home to a population of about 6,000, primarily poor, Bedouin people. The Bedouin population of the reserve is composed of seven distinct Bedouin tribes, located in and around the town of St. Catherine.

The high mountains of Sinai

St. Catherine's Reserve, an ecological and cultural heritage site, is the Sinai Peninsula's most biologically diverse region. The plant biodiversity of the Sinai has been enriched by its geographic location and the effects of long-term changes in climate. Plants found here have their origins in several distinct floral regions. Some are relic species, which have perished in their original Asian habitats, but survive in Sinai.

Hundreds of plant species have been recorded in the region, including 33 that have been identified as endemic solely to the Sinai's high mountainous region. Notable species include the pistachio shrub, the Sinai primrose, and *Rosa Arabica*, of which fewer than 100 plants remain in the high mountains. A specimen of the region's Rubus sanctus, or "holy bramble", is revered at St. Catherine's Monastery as the biblical burning bush of Exodus. Almost half of the recorded plant species in the area have some medicinal, aromatic, cosmetic or culinary use, and the local community uses local plants to treat a range of medical disorders.

The region's plant biodiversity is under growing pressure due to population growth and the number of tourists visiting the area. As the human population of the region has increased, plants have been over-harvested for medicinal and domestic purposes, as well as for use as fuel. Overgrazing by livestock and feral donkeys also pose significant threats to the region's plant life. The region is a popular tourist destination, located in a hotspot for biblical tourism and as home to St. Catherine's Monastery. The Monastery of St Catherine stands at the foot of what is believed to be the biblical Mount Horeb where, the Old Testament records, Moses received the Tablets of the Law. The mountain is known and revered by Muslims as Jebel Musa. The entire area is sacred to three world religions: Christianity, Islam, and Judaism. The Monastery, founded in the 6th century, is the oldest Christian monastery still in use. Its walls and buildings are of great significance to studies of Byzantine architecture and the Monastery houses outstanding collections of early Christian manuscripts and icons.

Community-based medicinal plants management

The origins of community-based work in St. Catherine's Reserve lie within a wider regional context of action for the environment. The Medicinal Plants Conservation Project (MPCP), initiated in 2003 by the Egyptian Environmental Affairs Agency and funded by the United Nations Development Programme and the Global Environment Facility (GEF), aims to raise the living standard of the Bedouin people by creating local employment within St. Catherine's Reserve based on the sustainable management and use of medicinal plants. In 2008, this larger, chapeau conservation project supported the launch of an initiative for social and economic development that would engage the community in natural resource management within the reserve.

St. Catherine Medicinal Plants Association was created with the aim of supporting the development of sustainable livelihoods activities for the largest of the area's Bedouin communities. With technical and financial inputs from UNDP-GEF and MPCP staff, community members are supported to acquire expertise in planting, harvesting, processing, and marketing of a range of natural products. While the prime focus of the project has been on the reserve's relative abundance of medicinal plant species – and by extension, the conservation of much of St. Catherine's unique biological diversity – the association has also facilitated income-generating activities such as the production of handicrafts and bee-keeping. Much of this work has focussed on women community members. One of the main successes of the project has been in successfully promoting and marketing community produce, establishing improved market supply chains and bringing in higher incomes for members. Beyond its initial focus, moreover, the association has evolved to meet a wide range of community needs, including providing sustainable energy and micro-credit options.

In designing St. Catherine Medicinal Plants Association, a scenario planning exercise was conducted by project staff, bringing together mostly local stakeholders for a 13-day workshop to facilitate open discussion and develop a framework for how a potential community association would operate. A value-chain development workshop was held in parallel, to discuss barriers and solutions to optimizing the market supply chain of the reserve's medicinal plants. The vision that emerged was one of full participation of all actors in the St. Catherine community at every stage of the production chain.

In both the planning and implementation stages of the initiative, the focus was placed on community ownership and leadership. All components of the initiative are owned by the community (represented through membership of the association) and community members are involved in all aspects of the initiative's activities. Approximately 50 per cent of the Bedouin community benefits from the activities of the association through generation of employment opportunities and development of sustainable income. All told, it is estimated that the medicinal plants value chain established by St. Catherine Medicinal Plants Association is supporting the livelihoods of over 500 families.

Governance of the association

All eleven board members, as well as the entirety of association staff, are members of the St. Catherine community. The board meets regularly to take decisions regarding the association's activities. All technical and administrative ideas are discussed by inviting local representatives to participate in the meetings. Decisions aim to take into account the likely social, economic and environmental implications for the community. The association has done a great deal to advance the status of women by building their capacity, providing employment opportunities and involving women in the decisionmaking process as board members. Indeed, executive management of association activities is carried out by Bedouin women, setting a strong precedent in a community where women have not traditionally been involved in public decision-making.

Although conceived through a project under the aegis of the Environmental Affairs Agency, St. Catherine Medicinal Plants Association is registered as a non-governmental organization. The association is to a great extent financially self-sustaining, with revenues coming from annual subscription fees paid by members, profits accrued from a revolving loan programme, and the commercial sale of medicinal plants, honey, handicrafts and candles. All revenue accrues directly to community members, helping to reduce management expenses and increase returns. For its contribution to community development and conservation, the Governor of South Sinai has granted St. Catherine Medicinal Plants Association a building that serves as the hub of its activities and provides space for association members to meet and sell their products.





Key Activities and Innovations



Conserving medicinal plants in the wild

St. Catherine Medicinal Plants Association has undertaken a range of activities to conserve the flora of the region, both through direct conservation methods, and by developing alternative livelihood opportunities to reduce pressure on wild plants from the activities of the local population. The association's activities follow the principles of community-based natural resource management, providing the community with the necessary skills and training to sustainably manage their own resource base and develop meaningful alternative livelihoods, rather than conserving local biodiversity at the expense of community access to their resources.

To reduce the environmental impact of medicinal plant collection for local use, community members are trained in methods for sustainably collecting wild plants, resulting in an observed improvement in the health and vitality of the local ecosystem. Twelve organic cultivation sites have been established to develop techniques for the domestication of wild medicinal plants. These cultivation sites also function as demonstration sites. A seed collection programme has been established to conserve the region's unique range of plant species. To preserve the distinctive character of the region's plant life in situ, a project has been implemented to control invasive species that threaten endemic medicinal plants. Under this project, measures have also been taken to control the region's feral donkeys that graze on threatened plants and to address overgrazing by livestock. To this end, fodder lots have been provided for cattle.

Developing alternative livelihood options

Above and beyond wild medicinal plant cultivation, St. Catherine Medicinal Plants Association is working to generate new sources of income and create new livelihood options for the local population. The aim is to diversify the local income base to reduce pressure on wild flora and to avoid the dangers of overreliance on a single sector or activity. One way this has been accomplished is through the creation of household gardens and community farms, where medicinal plants can be grown in a controlled, domesticated environment. The association has helped to establish 25 community farms: 17 operated by men and eight by women. The gardens and farms enable local people to plant and market organic food and to produce medicinal plants domestically rather than harvesting them from the wild. This initiative has been particularly empowering for women, who have generally taken responsibility for these activities in their households. The gardens and farms are generating approximately EGP 500 (USD 82) per month for each household involved.

Alternative livelihood options are also being created through the development of a value chain for local plant resources. Training and investment has been provided to begin manufacturing and marketing cosmetic and artisanal products derived from local plants. Examples include soaps, candles and drawings of local plants on wood, paper and cloth. Production of these and other handicrafts has involved the participation of 600 individuals, each receiving an average of EGP 150 (USD 25) per month for their work, and has created 108 year-round jobs within the community. Meanwhile, two hundred beehives have also been distributed by the association, benefitting 15 households who between them produce about 1,000 kg of high quality mountain honey each year, generating EGP 200,000 (approximately USD 32,790) in revenue. Twenty-five per cent of the revenue generated from honey production is returned to the association and reinvested in other activities for the benefit of the wider community.

Raising environmental awareness

The association works to raise local environmental awareness, communicating the importance of biodiversity to the region's economic, environmental and social wellbeing. Environmental awareness activities have helped improve community knowledge, particularly for those working in the ecotourism sector. Greater awareness has translated to higher levels of participation in conservation activities. To engage the younger generation of Bedouin, the association recently held a successful campaign through the reserve's Green School Programme, teaching 543 students at 20 local schools about the importance of the region's plant biodiversity.

Sustainable energy, savings and loan services

The creation of home gardens and community farms has helped reduce dependence on wild plants for firewood; a dependence that, in combination with population growth and relative economic despair and isolation, was previously putting unsustainable pressure on local ecosystems. These interventions have been complemented by the promotion of solar energy and the provision of gas ovens to community members. It is hoped that these efforts will meet community energy needs while also protecting the environment. With the support of the Environmental Affairs Agency, eight solar cells have been placed in community public areas, including the mosque, to promote awareness of renewable energy options. Efforts to provide access to sustainable energy have been tied closely to a revolving loan programme, which has financed the purchase of many gas ovens and gas cylinders for household use. To date, more than 500 Bedouin families have benefited from the micro-credit programme, which has financed 25 gas ovens, 275 gas cylinders, and a significant number of beehives, solar heaters and domestic plant gardens.

The revolving loan programme is central to the changes the association is attempting to catalyse in the region. It functions as many micro-credit programmes do, providing local households with finances to invest in small businesses ventures, sustainable energy solutions, or income diversification projects. The main project criteria for accessing the revolving loan resources is any initiative that help reduce pressure on the region's medicinal plants, the environment and ecosystem services.

Overall, the initiative has contributed to the development of a sustainable value-added chain for the marketing of medicinal plants in St. Catherine's Reserve. From harvesting to value-added secondary processing to sales (in local, regional and global markets), the initiative has helped to transform the local economy and the local landscape.



Impacts



BIODIVERSITY IMPACTS

St. Catherine's Reserve is an ecologically unique area. It contains almost half of Egypt's endemic plant species, including a significant number of medicinal and aromatic plants. The high degree of endemism among Sinai plant species means that – with mismanagement or continued overexploitation – local extinction would also mean global extinction. Many local species are already endangered. As one example, fewer than 100 *Rosa Arabica* plants remain in the high mountains.

St. Catherine Medicinal Plants Association has done a great deal to increase local awareness of the unique ecology in the region, as well as appreciation for how the burden of stewardship that falls to the community can also create economic opportunity and new benefit streams. The association has been judicious and balanced in its emphasis on the social, environmental, economic and cultural value that can be found in a healthy ecosystem and in a community that protects and rejuvenates its unique concentration of medicinal plants. Job creation, new livelihoods and higher tourism revenues provide the clearest incentive for local action, and demonstrating this economic upside has been an important catalyst of conservation activities. Pressure on wild plants has been mitigated through training in sustainable management and the provision of alternative livelihood options. There has been a noticeable improvement in the condition of wild plants as a result of the association's conservation measures.

Holistic land management and environmental awareness

Another biodiversity impact from the initiative has been successfully addressing the overgrazing of livestock, a 'tragedy of the commons' situation that was leading to land degradation, the loss of threatened medicinal and aromatic plants, and resource conflicts. Dedicated areas for livestock rearing, and corresponding areas for plant cultivation, have created more thoughtful and harmonious land management practices that have also reduced pressure on wild plants. As part of a new land use planning approach, the association has also established restoration sites: demarcated ecological zones where no resource extraction is allowed, giving threatened medicinal plant species a chance to recover and thrive. Lastly, the association has made efforts to control invasive alien species, which also pose a threat to endemic plants.

Environmental awareness campaigns have effectively raised local consciousness of key threats to local ecosystems and the importance of biodiversity to the local economy, not least of which to the tourism sector: St. Catherine's Reserve receives an estimated 300,000 visitors every year. Importantly, these campaigns have been linked to the publicizing of tangible economic benefits, including the creation of jobs in the areas of honey production, soap and candle production, and farming. As a result, the community feels it has a stake in conserving the region's flora, and that ecosystem health is directly linked to their own wellbeing.

SOCIOECONOMIC IMPACTS

The Medicinal Plants Association has ensured that the local community, with its traditional reliance on the region's natural resources, has remained central to its strategy to preserve the area's threatened medicinal plants. Rather than conserving endemic plants at the expense of the local population by restricting access to the reserve, for instance, the provision of gainful and reliable employment options has been key to the programme model, and is an important element of its success to date. By developing income-generation opportunities that depend on the long-term health of local ecosystems and diversity of plant species, the Bedouin community has been given a strong stake in the conservation and sustainable management of their local plant resources. Beyond creating incentives, the association has prioritized community investment in the project and ownership over decision-making and governance. Income generation and employment opportunities have benefited more than half of the local community. In total, the initiative has created 108 new permanent jobs. The establishment of medicinal plant farms and the development of honey production and handicrafts and plant-derived products industries have together boosted household and individual incomes significantly. The community has collectively achieved a new level of economic resilience. By diversifying incomes, the initiative has reduced community vulnerability to economic and environmental shocks, including the erratic rainfall patterns in the region which undermine traditional livelihoods such as grazing and collection of wild plants. By contrast, the activities promoted by the association are less weather-dependent and can be undertaken year-round.

Empowerment of women

The biggest socioeconomic impact of the association's work is its contribution to the empowerment of Bedouin women and the provision of employment opportunities where previously few existed. Local employment opportunities for women were sparse at best, and since Bedouin tradition does not permit women to leave the community to live alone in cities where they might seek work or pursue further education, financial independence and economic opportunity were traditionally out of reach. The association has changed this by basing its programmes and activities primarily around the women of the community.

Women represent the majority of wild plants collectors. In addition, eight of the community farms in which medicinal plants and food crops are domesticated are operated by women. A programme which oversees the development and marketing of produce harvested from these farms is also managed by women, who receive a monthly income for their work and are helping to create a platform that provides other local women with a new income stream. Approximately 150 Bedouin women receive income from the sale of handicrafts through association's sales outlets. Importantly, the association provides opportunities for women to work from their homes and fit their employment around their household schedules.

Local women have also received loans from the community revolving fund to purchase gas ovens and cylinders. So too, women have been actively involved in the governance of the association. Women sit on the Board of Directors, and are taking part in community decision-making processes alongside men for the first time.

POLICY IMPACTS

At the national level, the association's work has played into the development of a regulatory framework for Access and Benefit Sharing (ABS), developed by the Egyptian Ministry of Foreign Affairs in conjunction with other ministries involved in trade and intellectual property rights. The framework aims to promote the conservation and sustainable use of wild medicinal plants and their habitats as well as preserve the traditional knowledge associated with their use.

The strategy adopts the mission of preserving Egypt's wealth of medicinal plants and related traditional knowledge through rational management and sustainable use with the participation of all stakeholders. It also aims to foster in communities that have been the traditional stewards of these resources an understanding of the benefits that can accrue to them from the sustainable management and conservation of their local resource base. The framework makes possible the setting of regulations and benefit-sharing arrangements with institutions that might commercially exploit medicinal plants. The experience of St. Catherine Medicinal Plants Association has been presented to the Cabinet of Ministers in Egypt as a model for how the conservation of protected areas generate employment and income for local communities that live in these reserves.



"Local communities are the protectors of the environment and the basis of development. Community-based organizations are like children who first need help to stand up, but then, once given a little bit of support, can walk the rest of the way. Policy makers should and must work with them and for them."

Mr. Adel Abd Alla Soliman, Manager, Medicinal Plants Conservation Project

Sustainability and Replication



SUSTAINABILITY

St. Catherine Medicinal Plants Association was set up with the support of the Environmental Affairs Agency's Medicinal Plants Conservation Project, but today possesses the technical, administrative and financial capacities to function independently. Support from UNDP-GEF is in the process of being phased out and the initiative now relies on its own income-generating activities to fund its endeavours.

A long-term sustainability operations plan has been established encompassing all programmes and activities. The plan lays out a timetable for proposed activities, the funding required for each, methods of procuring the resources necessary to carry these out, and proposed management arrangements. Funding for the association's activities comes from the proceeds of the sale of artisanal products, mountain honey and plants, as well as from profits accrued from the revolving loan scheme. The provision of a headquarters building for the association by the South Sinai Governorate, meanwhile, has also contributed to financial sustainability by reducing the association's overhead expenses.

The association has received international accreditation in the form of an Environmental Compliance Certificate for the collection of plants, organic farming and trading of medicinal plants from the Mediterranean Institute of Certification in Italy. A set of official cooperation protocols with governmental agencies such as the Ministry of the Environment and the Centre for Desert Research also strengthens the association's credibility.

REPLICATION

Plans are underway for the expansion of the project, including the acquisition of more land on which to cultivate medicinal plants, and tapping new and emerging markets for the sale of locally made products. A website has been created to showcase the association's work, which has increased demand for its products and in turn

encouraged the community to increase its scope and ambition. Beyond local expansion, the initiative has the potential to serve as a model for sound, community-based natural resource management across the region and beyond. The association currently works with the largest and most influential of South Sinai's seven Bedouin tribes and as such it has the potential to be replicated through the establishment of similar initiatives with the six other tribes that inhabit the reserve.

Communities from other parts of Egypt, including Al-Jimal Valley at the Red Sea and Shalateen in southern Egypt, have already expressed interest in replicating the association's work and have begun to institute some activities inspired by the success of the St. Catherine initiative. The association organized a series of visits to representatives of these communities to explain the initiative, its objectives and the positive impacts it has had on the communities of St. Catherine's Reserve. Partnership with the Ministry of Environment played a large role in supporting the replication of the initiative to these areas through the provision of the technical staff and equipment necessary for the propagation of medicinal plants.

The association is an active participant in the UNDP-implemented GEF Small Grants Programme (SGP) Network in Egypt, another channel through which its work has been spread to other regions. Through a UNDP-GEF project on Conservation and Sustainable Use of Medicinal Plants, the association has served as an example to other communities, with UNDP-GEF arranging for representatives of communities in other protected areas of similar conditions to St. Catherine to visit the Medicinal Plants Association to learn about its work in the hope of encouraging replication.

The association has generally taken a proactive approach to knowledge sharing, producing and making available through its website policy papers that provide overviews of its processes. These include papers on threat analysis, scenario planning, communitybased natural resource management, and in situ ecosystem rehabilitation. These papers provide a means for the project to transfer its knowledge and share examples of best practice for replication elsewhere.

PARTNERS

The UNDP-implemented GEF Small Grants Programme provided seed funding for the project as well as capacity building for the association's elected board members. The grant also went towards training community members in the cultivation of medicinal plants and improving the quality and marketing of their products.

The association operates under a cooperation protocol with the Ministry of the Environment (MOE) and is implemented in partnership with the ministry, as represented by the management of St. Catherine's Reserve. The protocol defines the responsibilities and obligations of the MOE to provide the Medicinal Plants Association with the instruments and tools needed to cultivate and propagate medicinal plants as well as the operating expenses of the greenhouses. The MOE also provides the necessary technical support for the operation of these greenhouses by providing qualified engineers to follow the plant propagation processes. The protocol defines the responsibilities and obligations of the association in the use of medicinal plants seedlings, to be grown within the area of St. Catherine, both in domestic farms or farms owned by the association. It determines the types of medicinal plants allowed for marketing as well as other species which are not permitted to be commercialized due to their conservation status.

The South Sinai Governorate provides the association with its headquarters building, while there is close cooperation between the association and the Desert Research Centre of Egypt. Research Centre staff members provide advanced technical training to members of the association on techniques for sustainable collection of wild plants. Finally, the association also cooperates with the Red Sea Protected Areas Development Association in implementing their biodiversity awareness activities for children.



"Wealth is in the hands of communities and lies in our natural resources. We must teach our children how to preserve the environment. Do not lose hope. With hard work and determination, we will achieve success for people and the environment."

Mr. Adel Abd Alla Soliman, Manager, Medicinal Plants Conservation Project

FURTHER REFERENCE

- St. Catherine Medicinal Plants Association Equator Initiative profile page: <u>http://www.equatorinitiative.org/index.php?option=com</u> winners&view=winner_detail&id=103&Itemid=683
- Medicinal Plants Conservation Project website: http://www.mpcpegypt.org/English/Global/index.aspx

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