SGP The GEF Small Grants Programme

COMMUNITIES CONTRIBUTING TO BIODIVERSITY

Biodiversity Products from Africa and the Arab States

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ACKNOWLEDGEMENTS

This catalog highlights the work of the GEF Small Grants Programme (GEF SGP) in supporting biodiversity projects across Africa and the Arab States to promote the conservation, sustainable use and management of biodiversity across a wide range of ecosystems, including anthropogenic landscapes rich in agrobiodiversity as well as agro-ecological systems.

The SGP Central Programme Management Team (CPMT) would like to recognize all members of the SGP family who helped research, prepare and review this publication, especially the SGP National Coordinators, Programme Assistants, grantee partners and NGO stakeholders who provided valuable and detailed information about the diversity of SGP biodiversity products supported, as well as providing insights into how local communities are benefiting from biodiversity at the grassroots. The biodiversity product profiles and photographs are a celebration of the innovation and determination of the African and Arab States' communities and civil society organizations that work alongside them in their efforts.

A special thanks goes to Andrew Bovarnick, UNDP Green Commodities Facility; Delfin Ganapin, GEF SGP Global Manager; and Tehmina Akhtar, GEF SGP Deputy Global Manager; who through their continuous support were instrumental in the finalization of the publication. Sincere thanks are also extended to: Ana Maria Currea, GEF SGP Knowledge Facilitator; Edith Kroese and Luis Ignacio Carmona Galicia from the Progreso Network; and Jasmijn Besorak from Avance; for their constructive and valuable feedback, comments and assistance. We would also like to thank the UN online volunteers who assisted in translation and organizing content.

The biodiversity catalog project and publication was led by Terence Hay-Edie, GEF SGP Programme Advisor for Biodiversity, and Corrina Steward, Eco Resource Consulting.

FOREWORD

Meaningful partnerships are the foundation for success in environmental progress. Since its inception, the Global Environment Facility (GEF) has fostered partnerships with the public, private and nonprofit sector to increase its impact in the developing world. Over time, we have found that one of the most robust alliances that can be achieved is with civil society and community based organizations (CSOs and CBOs) whose expertise in the field helps us to communicate more effectively with the communities and people we serve.

When it comes to biodiversity, CSOs and CBOs stimulate local action that makes a visible impact on global biodiversity. Through this manifold of small partnerships a global constituency to save biodiversity is engaged. Partnering with CSOs therefore is a critical step in funding any GEF project. To date about 13 percent of our projects have been granted directly to CSOs translating into catalytic benefits, both globally and locally. Through the GEF Small Grants Programme (GEF SGP) we have supported over 15,000 projects in 128 participating countries since the inception of the programme. Thus, the GEF, together with its partners, has made a significant and visible difference to the environment and the quality of life of thousands of local communities while at the same time achieving global benefits and supporting the implementation of international agreements.

This publication is a part of that process. The regions of Africa and the Arab States are pivotal for building the SGP's model of success. Today, biodiversity conservation connected to sustainable livelihoods is a working model for SGP projects around the world. The biodiversity products featured here showcase our successes. Furthermore, they are a celebration of biodiversity. The multitude of productive landscapes, the abundance of ecosystems, the diversity of cultural expressions and the economic opportunities created are all part of biodiversity.

We encourage GEF stakeholders from all sectors, public, private and nonprofit, to read these pages and offer guidance to ensure the GEF stays on the right path. It is through the guidance and collaboration of many partners and constituencies that we will save biodiversity both locally and globally.

Naoko Ishii
CEO and Chairperson
Global Environment Facility

PREFACE

Launched in 1992, SGP has implemented more than 15,000 projects at the community level to protect the global environment. This publication captures the experiences and results of the SGP's Africa and the Arab States portfolio of over 7,500 projects in the biodiversity focal area. Since its inception, the biodiversity focus of the SGP has stressed sustainable development through improved livelihoods. The sustainable use of biodiversity-based products and commodities are one example of UNDP's commitment to meeting communities' development needs whilst also guaranteeing the conservation goals for global biodiversity protection.

Biodiversity loss resulting from climate change, over exploitation, invasive species and habitat destruction is a major challenge for poverty reduction. Communities' reliance on biodiversity for income, as well as for basic needs like food, shelter, clean water and clothing, is often understated. One of the foundations for sustainable development is acknowledging biodiversity's value for communities. Improving the livelihoods for the poor requires a dual approach: firstly documenting the crucial sustaining services provided by biodiversity, and secondly in making an economic case for investing in these vital services.

This catalog publication documents the biodiversity vital to communities in Africa and the Arab States for sustainable human development. It is a step towards educating the public, private and civil society sectors about the realities on the ground for communities. Most exciting is the vision to form alliances and partnerships with funders, retailers, researchers, governments, non-governmental organizations and small producer organizations to further improve African and Arab States communities' livelihoods. Investing time, money and expertise, through these collaborations, will accelerate the path towards healthy, prosperous, sustainable communities throughout the region.

Each profile featured here documents what the local biodiversity product is and how it is sustainably produced — many of which are not well-known as globally traded commodities. The high quality photography of each product is a tremendous achievement and the first of its kind for an SGP African and Arab States publication. The catalog design itself was developed for the ease of reading and accessibility for multiple audiences. It can be read from front to back or by product categories depending on your interests. The wealth of information included is educational and provides a solid foundation to build deeper relationships across all sectors.

Steps are also already underway to make the profiles available on-line through an emerging partnership with key capacity building organizations supporting the strengthening of supply chains of local producer organizations. UNDP hopes that this catalog marks the beginning of stronger partnerships for recognizing the role that biodiversity-based products and commodities play as a means for poverty reduction, community empowerment and sustainable human development.

Yannick Glemarec
Executive Coordinator
UNDP/GEF

BIODIVERSITY FOR LIFE: SUSTAINING AND RESTORING BIODIVERSITY FOR HEALTH, SUSTENANCE AND CONSERVATION

Terence Hay-Edie
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THE VALUE OF BIODIVERSITY

This is the second United Nations Development Programme (UNDP)/Global Environmental Facility (GEF) Small Grants Programme's (SGP) publication of regional biodiversity products. The idea to show the biodiversity sustained by communities around the world originates from the belief that communities, mostly rural and inhabitants of the world's most abundant

The diversity of food crops presented in the catalog such as indigenous yam, air potato, oyster nut and ancient grains… highlight the necessity to cultivate food in agro-biodiverse systems that protect forests and feed people."

ecosystems, are critical conservationists for our global biodiversity. In two decades of grant making, the UNDP/GEF SGP demonstrates that investing in communities and biodiversity has real impacts on human development and the environment. The 70 biodiversity products and communities

represented in the catalog show that biodiversity and community development results in:

- Economic development in the form of increased personal income and community resources;
- Social change as women, small producers, and indigenous people are empowered in their skills, leadership and knowledge; and

- Environmental awareness from the restoration of native species to the management of resources like crucial water supplies and forests are protected for biodiversity conservation and sustainable development.

A more subtle impact is the advancement of the cultural diversity sustained by communities at the nexus of biodiversity. A report by the United Nations Environment Programme explains, "There is a considerable overlap between historic cultural centres and centres of biodiversity. Some factors promoting high biodiversity, such as perennial water availability, environmental heterogeneity and fertile soils have also favoured human settlement. In general, patterns of biodiversity and language diversity coincide, and show parallel extinction risks, suggesting that cultural cohesion and biodiversity sustainability are closely linked."[1] It is obvious that as the link to cultural diversity, communities are a central to biodiversity today and for the future.

BIODIVERSITY IN AFRICA AND THE ARAB STATES

As home to the most ancient civilizations, Africa and the Arab States represent this convergence of human diversity and biological diversity. Products such as the culinary herbs and spices of Palestine and Egypt reflect the flavors reminiscent of early human civilization. Today, through the support of SGP, communities in these regions are restoring ancient plant varieties to combat desertification and the genetic erosion of culturally important herbs and spices. In the products contained herein, we see that many linkages from culture to health are the drivers for biodiversity conservation. Overall, it is the desire for sustaining life and the ecosystem services necessary for human development that underpin biodiversity products in the regions.

Combined, Africa and the Arab States represent over 120 eco-regions, specialized ecosystem ranges responsible for endemic species and the genetic origin of thousands of species. In Africa these eco-regions include: Mt. Cameroon and Bioko montane forests and the Cross-Sanaga-Bioko coastal forests; the Cameroon highlands' forests; the Eastern Arc forests and the northern Zanzibar-Inhambane coastal forest mosaic; the Guinea montane forests and the western Guinea forests; the Drakensberg montane grasslands and forests; the Albertine Rift montane forests and the upper Guinea lowland rain forest. The Arab States include the arid and semi-arid deserts and the expanse of the Mediterranean ecosystems. For example, the temperate broadleaf and mixed forest with temperate grasslands, savannas and shrub land of Oman, Jordan and Syria; the Mediterranean forest, woodlands and scrub with scattered temperate conifer forest along the coastline of Morocco and Algeria; tropical and subtropical grasslands savannas

We see that many linkages from culture to health are the drivers for biodiversity conservation…it is the desire for sustaining life and the ecosystem services necessary for human development that underpin biodiversity products in Africa and the Arab States."

[1] United Nations Environment Programme (Lead Author);Mark McGinley, C Michael Hogan (Topic Editor) "Biodiversity in Africa". In: Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [First published in the Encyclopedia of Earth July 1, 2009; Last revised Date April 19, 2011; Retrieved April 5, 2012 http://www.eoearth.org/article/Biodiversity_in_Africa

[2] Talhouk, Salma and M. Abboudimpact. (2009) Ch. 8: Climate Change: Vulnerability and Adaptation Ecosystems and Biodiversity. In: Arab Environment: Impact of Climate Change on the Arab Countries' (AFED); Retrieved April 6, 2012: http://www.afedonline.org/afedreport09/english/Char8.pdf

[3] http://www.wwf.mg/wherewework/ecoregions/; Retrieved April 6, 2012.

and in southern Mauritania and Sudan; and the flooded grassland and savannas in Egypt and Iraq.[2]

Some of the world's most critical and abundant eco-regions for biodiversity are in Africa. The most notable being the Cape Floral Kingdom and the tropical forests of Madagascar, considered a "living laboratory" for biodiversity[3]. Over 9,000 vascular plant species occur in the Cape Floral Kingdom in an area of 90,000 km^2—69 percent are endemic, and over 12,000 plant species occur in Madagascar, at least 81 percent of which are endemic.[4] It is suggested that even greater biodiversity is present, yet the underdevelopment of Africa has meant under sampling for biological diversity. Most eco-regions remain legally unprotected, yet, continue to have relatively undisturbed ecosystems when compared to Eastern Europe, North America and Southeast Asia. This reality demonstrates the great importance in working with the communities that are dependent on these critical landscapes.

Despite the health of many of these eco-regions, environmental threats loom for Africa and the Arab States. Climate change being the most threatening to the balance of the regions' sustainability. From changing weather patterns to increased desertification, climate change is accelerating the need for environmental education and adaptive management of biodiversity in transitioning ecosystems like the grasslands of South Africa home to wild-harvested Rooibos tea.

Another environmental threat is overconsumption of popular foods and medicines. The years of underdevelopment from conflict and lack of market access, led to more local reliance on native plant species for food and medicine. It is estimated that 80 percent of Africans use traditional medicine in some fashion[5], a fact supported by the numerous medicinal plant nursery's sprouting up in Nigeria, Egypt, Morocco, Mauritius and Mozambique and profiled here. In addition to medicine, plants provide up to 75 percent of protein sources. The diversity of food crops presented in the catalog such as indigenous yam, air potato, oyster nut and ancient grains like Indigenous "Senef Gebis" Barley from Ethiopia and Asmoûne and Tafsoute Millet from Morocco highlight the necessity to cultivate food in agro-biodiverse systems that protect forests and feed people. Many communities are taking the initiative to restore these local varieties and ensure the future food supply.

It is an objective of the SGP to inspire further interest in these products and increase funding and the capacity for the development of the thousands of products inherent to these communities. Biodiversity is a gateway to human development and conservation.

Local reliance on natural resources for cooking and heating fuel is also a threat to the region's biodiversity. Over 80 percent of Africans rely on wood or charcoal for domestic cooking and heating.[6] Fossil fuels and vegetable oils are often too expensive for communities living in subsistence systems (rather than economic/capital-based systems). Thus, the local environment becomes the source for fuel. Projects like Sunflower Bio-diesel production in Ghana are helping farmers to create their own fuel source and restore degraded community lands to ecological health and economic productivity.

While many of the biodiversity products featured here are directly consumed, many communities are profiting from developing enterprises targeted at local and regional markets. Clothing made from wild silk in Madagascar and Syria is some of the most sought

[4] United Nations Environment Programme (Lead Author);Mark McGinley, C Michael Hogan (Topic Editor) "Biodiversity in Africa". In: Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [First published in the Encyclopedia of Earth July 1, 2009; Last revised Date April 19, 2011; Retrieved April 5, 2012 http://www.eoearth.org/article/Biodiversity_in_Africa

[5] Ibid.

[6] Ibid.

after garments for culturally significant events. The quintessential African Blackwood carvings, locally called Mpingo, in Tanzania afford the Makonde tribe to make a living by selling to the thousands of tourists who visit Mt. Kilimanjaro every year. The women of Baya, Mali are selling their honey in supermarkets and outdoor markets, which is paying for their children's schooling and health costs. They are also participating in a savings program to ensure their continued climb out of poverty.

The sampling of biodiversity products shown here in 20 categories from native plants to freshwater products is a small window into the expanse of diversity, both human and biological, that is present in Africa and the Arab States. It is an objective of the SGP to inspire further interest in these products and increase funding and the capacity for the development of the thousands of products inherent to these communities. Biodiversity is a gateway to human development and conservation and greater investment is needed for the potential SGP imagines to come to fruition. Some of the basic needs for biodiversity product development in the African and Arab States, include greater education of the economic and environmental value of biodiversity products; development of marketing channels for isolated communities and regional products; and facilitation of relationships to connect communities to producer organizations, markets, funders and consumers.

It is through the global community of funders, retailers, producer organizations, community-based organizations, conservationists, economists and researchers that biodiversity products may become as relevant to the world economy as they are to the communities that sustain them. We hope that you will share this catalog with your colleagues and consider collaborations that may further human development through biodiversity conservation. In particular, we encourage you to visit the www.biodiversity-products.org website where you can learn more about the products and join the Progreso Network's Online Community, http://progresonetworkenglish.ning.com. Through the Online Community we are engaging in monthly discussions in the Biodiversity Products Working Group with producer organizations, retailers, funders, scientists/researchers, and those concerned about biodiversity conservation. Through this community we are beginning the conversations to create stronger, better partnerships. We have no doubt that the investment of time and resources in biodiversity products will result in far-reaching impacts for communities, the environment and sustainability.

AGRICULTURAL PRODUCTS

Native Plants

THE RODRIGUAN CHILLI "TI PIMENT RODRIGUES"

Location of product: RODRIGUES ISLAND, MAURITIUS

Producer organization: Committee of Baladirou, the Commission for Agriculture and the Rodrigues and Trading Marketing Company (RTMC)

Name of species and ecosystem: *Capricum annum*; coastal to higher elevations of Rodrigues Island

Global distribution: Endemic to Rodrigues Island

Production Description: Ti Piment Rodrigues is primarily produced by women from the fishing communities of Baladirou Village in Rodrigues Island. Fishing continues to be the main economic activity on the island, but the industry is declining as the fish population in the lagoon of Rodrigues, one of the largest in the southern hemisphere decreases. It is this change in the economic situation that is motivating resurgence in Rodrigues chilli production. The village committee of Baladirou, with the assistance of the Commission for Agriculture, is developing a commercial chili production project to establish a "chilli village" for 47 fisher families.

The Rodriguan chilli, or Ti Piment Rodrigues as it is locally called, is famous for its pungency, heat and taste. It has a very high market value on both local and export markets. The chilli can be found in brine, pastes, sauces, and pickles.

While the demand for Ti Piment Rodrigues continues to increase locally, production lags behind the demand. Several production and marketing constraints are affecting its economic potential, including pests and diseases; high initial production costs; limited water supply during dry periods; small production scale of backyard gardening and availability of seed; cross breeding of varieties; and lack of a marketing label and strategy. The Commission for Agriculture identified the chilli as one of the strategic crops to promote. As a result, the Commission developed an agricultural strategy for two Rodrigues chili production zones, one in Baladirou and the other Mt. du Sable. The SGP is supporting these efforts to rehabilitate, protect and sustainably produce 2 acres of abandoned agricultural land in Baladirou. Other measures are working towards ensuring that the Rodrigues chilli variety's purity is maintained with the development of a Geographic Indication label identifying its authenticity. The producers are partnering with the Rodrigues and Trading Marketing Company for marketing. The target is to increase production from 5.1 Tonnes as of 2006 to 10 Tonnes by 2015.

RODRIGUAN RED BEAN

Location of product: RODRIGUES ISLAND, MAURITIUS

Producer Organization: Association des Planteurs d'Haricot de Rodrigues

Name of species and ecosystem: *Phaseolus vulgaris*

Global distribution: Endemic to Rodrigues Island, Mauritius

Production Description: Red beans are one of the main traditional cash crops on Rodrigues Island. The Commission for Agriculture in Rodrigues is providing a wide range of incentives to the red bean growers' association, Association des Planteurs d'Haricot de Rodrigues. The overall objective is to increase production for local and export markets. Introduction of other varieties is a major threat to this, presumed to be unique, local red bean. Furthermore, since the origin of the Rodriguan red bean is unknown, the project aims to identify and characterize the variety scientifically. This will help to maintain the particularity of the local bean and identify further research needed. The outstanding question is whether or not the red bean is biologically unique to the island? If so, the producers hope, with the help of the Rodrigues Trade and Marketing Co Ltd, to create a Geographic Indicator label and possibly an organic label that would boost its commercial value. There are plans for seed samples to be stored in gene banks in collaboration with Mauritian research institutions.

Through years of production and selection to Rodriguan agro-climates, the Rodriguan red bean possesses a unique taste that is creamy and melts in your mouth. It is very popular among the local people and visitors and fetches a high price (2 to 3 times higher) on market compared to the price of the imported beans.

Native Plants

ZA'TAR SPICE MIX

Location of product: TIL VILLAGE (5 KM SOUTH WEST OF NABLUS), PALESTINE

Producer organization: Women Cooperative for Solar Drying of Fruits and Vegetables and Biodiversity and Environmental Research Center (BERC)

Name of species and ecosystem: *Majorana syriaca*; mountainous areas of Palestine

Global distribution: Mediterranean region including the Palestinian territories

Product description: Za'tar is a variety of marjoram found in the wilds of Palestine's mountains. It is solar dried, mixed with toasted sesame seeds, salt, sumac, cumin, coriander, fennel, and caraway. Mixing the olive oil and za'tar spices together makes a spread known as zayt-wu-za'tar. The combination can be spread on a dough base and baked as a bread called manakeesh bi za'tar. In Palestine, ka'ak, soft sesame seed bread, is sold in bakeries and by street vendors with za'tar to dip into or with a za'tar filling.

The Women's Cooperative for Solar Drying of Fruits and Vegetables develops productive activities for the conservation of selected plants including za'tar, thyme and fig. Harvest and processing involves 70 families from 2 communities of the Nablus area. The Cooperative processes around 64,000 kilos of za'tar per year, but this figure is expected to increase every year as the number of collaborators increases as well. The Cooperative uses two types of solar dryers for drying za'tar, the chimney solar dryer, a fire drying method, and the greenhouse solar dryer. The product is marketed in the Nablus district and other parts of the West Bank. In addition to za'tar, the community also produces dried figs, dried grape fruits, and aromatic plants.

In 1977 wild marjoram was on the verge of extinction in the Palestinian Occupied Territories as a result of extensive harvesting, which lead to the decrease in the plant population in its natural habitat. Now the plant is domesticated and cultivated in home gardens, fields and greenhouses. This has reduced the impact on the wild population.

Yams grown in an agroforestry system of coffee and bananas on the slopes of Mt. Kilimanjaro. Yams are high in vitamin C, dietary fiber, vitamin B6, potassium, and manganese while being low in saturated fat and sodium. They also have a low glycemic index compared to potato products. So, they provide a more sustained form of energy and give better protection against obesity and diabetes. The local Chagga tribe eat boiled yams for breakfast as do adults with poor medical conditions for improving nutrition.

YAM

Location of product: SLOPES OF MT KILIMANJARO; KINYANGE, SENGIA, ARISI, MORI AND KORONA-MARANGU, TANZANIA

Producer organization: Lyamkara Environmental and Cultural Heritage Promotion Association (LECHIPA)

Name of species and ecosystem: *Dioscoreaceae Dioscorea*; lowland rain forest

Global distribution: Africa, Asia, and Latin America

Production description: In the coffee and banana production zones, the yams are normally planted near an existing tree so they can grow up the tree (yams grow like vines). Due to yams herbaceous growing nature, they contribute to the conservation of the soil, a necessary agricultural technique because the Mt. Kilimanjaro agricultural land is on steep slopes. The yam is considered scarce in the area due to land use change. This project is working to conserve traditional food crops like yams that are threatened by faster growing crops like tomatoes and peppers. Traditional crops are also disappearing due to people's tastes changing preferring bread to yams for example.

Yams are harvested manually through low till methods. The yam tubers can grow up to 2.5 m in length and weigh up to 7 kg, and can be stored up to six months without refrigeration, which makes them a valuable food in food security. They are sold locally. The project involves five villages: Shari, Mengeni, Arisi, Kinyange, and Korona. Marangu is the town before climbing Mt. Kilimanjaro, and, thus, there is a lot of tourism influence and livelihoods are based on tourism and agriculture. The community of Shari village still appreciates the value of traditional food, and they are the major supplier of yams in the region.

Native Plants

OYSTER MUSHROOM

Location of product: SLOPES OF MT. KILIMANJARO; SISAMARO VILLAGE, MOSHI DISTRICT, TANZANIA

Producer organization: Umoja Wa Wasaleko

Name of species and ecosystem: *P. ostreatus*; temperate and subtropical forests

Global distribution: Widespread throughout the world

Production description: Oyster mushroom cultivation doesn't require land, making it an ideal crop for land conservation. The mushrooms are produced in sacks filled with chopped dry grass. They are stored in a room made with dry banana leafs, or sometimes inside the house. Oyster mushrooms fetch a high price in the Mt. Kilimanjaro area (1 kg of fresh mushroom for US$ 6 compared to crops like tomatoes that go for US$1 per 1 kg). The project involves 16 families from the Sisamaro village. In a good season, they can produce up to 3000 kg of mushroom a year. The economic viability of mushroom cultivation is helping to reduce poverty, as well as curb illegal logging and cultivation in the Mt. Kilimanjaro protected forest. Sisamaro is adjacent to Mt. Kilimanjaro and had a history of illegal farming and logging. This project created an alternative to these illegal and unsustainable activities, as well as provided a more viable crop compared to coffee and cabbage, typically grown.

Fresh or dehydrated oyster mushrooms grown on the slopes of Mt. Kilimanjaro.

AIR POTATO

Location of product: SLOPES OF MT KILIMANJARO; KINYANGE, SENGIA, ARISI, MORI AND KORONA-MARANGU, TANZANIA

Producer organization: Lyamkara Environmental and Cultural Heritage Promotion Association (LECHIPA)

Name of species and ecosystem: *Dioscorea bulbifera*; lowland rain forest and riverine forest

Global distribution: native to Africa and Asia

Production description: The cultivation of the air potato promotes agroforestry systems on private farms. It grows as a vine that climbs trees. The trend to grow air potatoes on farms is resulting in an increase of planting indigenous trees planting on Chagga farms for fodder and fuel.

The crop is gaining popularity among many tribes (Chagga, Gogo, Sukuma, and Haya tribes) for its medicinal value. Due to land use change in the Mt. Kilimanjaro area such as coffee and banana agroforestry systems being converted to tomato plantations, growing air potato for the local diet is contributing to agro-biodiversity. The project involves 20 families that can produce up to 30 kg a year for the local markets.

A yam species, air potatoes grown in an agroforestry system of coffee and bananas on the slopes of Mt. Kilimanjaro. These tubers are small, oblong potatoes prepared like yams. Air potato can be used to treat conjunctivitis, diarrhea and dysentery.

Native Plants

ASMOÛNE AND TAFSOUTE MILLET

Product location: DOUAR RBAT, OUARZAZATE PROVINCE, MOROCCO

Name of species and ecosystem: Asmoûne and Tafsoute varieties of millet; middle-range mountains

Global distribution: Morocco

Production description: For a long time, the farmers of Rbat did not understand the ecological importance of these varieties or their need to be cultivated in order to preserved. Today, things are different. In order to protect these varieties as well as other endangered cultivars Douar Rbat established a botanic garden with local cultivated seed varieties. More than 75 farmers participated in the demonstration and training trials, and more than 15 local seed varieties are planted in the garden. An eco-museum, a space for community exhibits of traditional products, and a bank containing 30 local seed varieties including the Asmoûne and Tafsoute varieties also contribute to the conversation of local agro-biodiversity. Twenty farmers currently cultivate the local millet varieties without the use of chemicals such as pesticides.

Asmoûne and Tafsoute millet are now locally commercialized through the eco-museum. Distribution circuits are being identified to help promote this product outside of the Ouarzazate province. They will be marketed with a “Protected Geographic Status” label to identify the region and millet variety throughout distribution channels.

Located in the middle-range mountains of M’goun in the Ouarzazate province of Morocco, Douar Rbat is home to 520 inhabitants who live an agricultural life. The village is known for its rich biodiversity, including two varieties of millet Asmoûne and Tafsoute that are extinct elsewhere. Millet is an energizing and nutritional food, rich in magnesium, phosphorous and vitamin A, B5, B2, PP and protein (lysine). It is an alkaline food and is easy to digest. Millet can be prepared as gruel or as couscous, and added into soups to make them thicker and into bread, pies, and other types of cookies.

WILD YAM

Product location: RUKUSHA HILL, GITERANYI DISTRICT, MUYINGA PROVINCE, BURUNDI

Producer organization: Association pour la Gestion Durable de la Biodiversité au Burundi (AGDB Burundi) (Association for Biodiversity Sustainable Management)

Name of species and ecosystem: *Dioscorea villosa*; cultivable land within the forests and farms of Burundi

Global distribution: Locally distributed

Production description: The agricultural system that AGDB members use to grow the wild yam is inter-cropping with beans, banana and maize. The AGDB Burundi is an association of women and men who have the objective of conserving and multiplying wild yam and also implementing erosion control activities on Rukusha hill in order to protect the Akagera and Nile rivers' watershed. The AGDB Burundi is then conserving international waters and biodiversity of the Akagera River.

The quantity of wild yam already produced by the AGDB Burundi is 5 tons. They sell their products in the Giteranyi District and disseminated throughout the province of Muyinga (1,836 square kilometers). This activity of wild yam production is a big accomplishment, which has led to the expansion of the association to make their own organizations that are supported by agricultural technicians. These new associations are organizing their associations for the expansion of wild yam cultivation.

The wild yam is a traditional plant consumed in Burundi. Although it is not yet classified as an endangered species, the wild yam is slowly disappearing. Association pour la Gestion Durable de la Biodiversité Burundi (AGDB) is multiplying the wild yam species, contributing to agriculture biodiversity. Wild yam is a tuber consumed in rural areas commonly mixed with beans. The wild yam is a resilient plant rich in energy. What makes this plant special is that it does not need fertilized land to grow, and one tuber of wild yam can weigh up to 80 kgs. The juices from wild yam leaves are used as a medicine for pregnant women who do not have an appetite. The social and cultural significance of the wild yam is based in the tradition of feeding it to tribal chiefs including the traditional King of Burundi.

Fruits and Nuts

OYSTER NUT

Location of product: SLOPES OF MT KILIMANJARO; KINYANGE, SENGIA, ARISI, MORI AND KORONA-MARANGU, TANZANIA

Producer organization: Name of species and ecosystem: Telfairia pedata T. africana, Zanzibar oil vine; grows in elevations up to 2,000 m above sea level in lowland rain forest and riverine forest.

Global distribution: Native to Mozambique and Tanzania, especially in the northern highlands around Mt. Kilimanjaro and Zanzibar

Production description: Due to land-use changes in the Mt. Kilimanjaro area, cultivation of the oyster nut in agroforestry production systems is disappearing. Also, the introduction of cooking oils from peanut and sunflower has largely replaced oyster nut oil. This project involves 5 villages to increase the production of oyster nut with trees. The oyster nut plant starts flowering in 15-18 months after planting and the fruit ripens 5-6 months later. One plant can produce up to 30 gourds by its third year and continues production for another 20 years. When planted for commercial purposes the farmer can produce between 3-7 tons per hectare. Currently, about 20 farmers are involved in this project for commercial purposes.

In the Mt. Kilimanjaro villages it is cultivated in small plots of land mainly for household use. One farmer can produce about 100 gourds per plant per season. They are home processed making the nut into a paste like peanut butter. The increased production of oyster nut is bringing this traditional food back to the region.

The oyster nut is grown in an agroforestry system on the slopes of Mt. Kilimanjaro. They are woody, herbaceous perennial vines that bear squash-like fruits with large, nutritious oily seeds. These vines grow quickly to lengths of 30 meters or more. The fruit weighs around 15 kg; it's is 45-60 cm long and 20 cm in diameter, containing between 70-150 seeds/fruit. The seeds oyster nut is over 25% protein and 55% oil, making them a good source of nutrition as cooking oil and for the protein in the nut. Oyster nut is a traditional food source for nursing mothers and babies. The oyster nut is very important protein source for the Chagga tribe who depend on banana, mixed with protein sources such as oyster nut, as their major food.

MOROCCAN DATES

Product location: TWO PALM GROVES, AFRA AND AKKA, LOCATED IN THE TATA PROVINCE IN SOUTHERN MOROCCO

Producer organization: Affra Farmers Cooperative and the Taskala Cooperative

Name of species and ecosystem: *Phoenix dactylifera*; found in a geographic range that extends throughout 13 provinces located in South and Southeast Morocco, including Er Rachidia, Figuig, Tinerhir, Ouarzazate, Tata, Zagora and Guelmim

Global distribution: Morocco

Production description: Before the implementation of this project the date varieties found in the Afra and Akka groves were not recognized as valuable. In fact, they did not generate much income for the farmers in the area, and they were sold locally, in bulk and at very low prices. After the creation of production units for each grove via cooperatives the dates are highly sought after throughout Morocco. The Territorial Development Program of Southern Provinces and the Department of Environment supervise and support, respectively, the project towards the goal of commercializing Afra and Akka date varieties.

Afra and Akka date farmers, both men and women, received technical training, supervised by the French National Institute for Agricultural Research (INRA). They created two cooperatives to be the vechicle for production and marketing. The dates are sold locally, nationally and internationally, and are present in agricultural expositions and sold in the Marjane supermarket chain. The income generated by sales is improving the standard of living for the cooperative members. A portion of the profits goes towards financing the preservation of the two groves.

Together the Akka and Afra groves are the largest date palm groves of the Tata province. They produce several varieties of dates, including the most sought-after ones in Northern Africa Bouffegouss, Jihel, Najda and Bouyoutoub. At the Afra grove, three types of products are made from the dates: date jams, natural date paste and date paste flavored with local herbs. Other products such as apple or carrot jam are also made from local fruits and vegetables.

Dates are rich in vitamins B2, B3, B5 and B6 and contain beneficial lipids and salts. They are also rich in sugars making them an essential ingredient to typical Moroccan sweets. Date cookies are easily made with a mixture of flour, butter and sugar to create a dough, and then filled with date paste and cooked in an oven.

Cacao

COCOA BUTTER AND RAW CHOCOLATE

Location of the product: ZOETÉLÉ SUBDIVISION, SOUTH REGION, CAMEROON

Producer organization: Women of the Common Initiatives Groups of Zoetele

Name of species and ecosystem: *Theobroma cacao*; tropical forests

Production description: The women purchase fresh cocoa from farmers and process it to make the cocoa butter and chocolate. The cocoa is baked, and then crushed with a grinding machine to obtain a powder. The powder is added to boiling water from which the cocoa butter rises to the top and is collected. The butter obtained is filtered through cloth and packaged in bottles for sale. To make raw chocolate, ground nut, milk, sugar and citric acid are added to the cocoa powder.

One hundred women are trained in the cocoa butter and raw chocolate making techniques. Yet demand remains limited. Due to the remoteness of the area, products are mostly self-consumed or marketed in the local village. They usually make products when a customer has placed an order. The women would benefit from additional training and support for packaging to increase the visibility and demand of the products.

Cocoa butter and raw chocolate made by women of 7 Common Initiative Groups (GIC MARAOT, GIC Ndabot, GIC Ononnam, GIC Renaissance, GIC Oyili, Gic Evag Befam and GIC Bi Djô Aza) that came together for training on cocoa butter production as an alternative source of income generation and incentive to biodiversity conservation.

The cocoa bean, with up to 50% fat, is a valuable source of vegetable fat used for such things as soap making. The cocoa powder, what is left after the fat is extracted, is used in cakes, biscuits, drinks and other confectioneries.

BALADI SEEDS OF VEGETABLES AND CEREALS

Location of product: TIL VILLAGE (5 KM SOUTH WEST OF NABLUS), PALESTINE

Producer organization: Community-based Seed Bank for the Nablus District and Biodiversity and Environmental Research Center (BERC)

Name of species and ecosystem: Several landraces of *Lycopersicon lycopersicum*, *Triticum durum*, and *Sorghum bicolor*

Global distribution: Worldwide

Production description: Due to genetic erosion and changes in agricultural technology, many of these Baladi varieties are disappearing. As these geographically adapted crops decline so does farmers' knowledge about them such as how to select, treat and storage them. About 60% of Palestinians earn their primary income through agriculture; yet, over 90% have no access to irrigation. Palestinian traditional vegetables and cereals, many of which date back to Biblical times, are in critical danger of being lost entirely.

Wheat, tomato and sorghum seeds produced for a community seed bank. The seeds are from landrace varieties (called "Baladi" cultivars in Arabic, which means local and native) that are adapted to growing conditions of Palestine. The crops are drought- and pest-resistant and produce high-quality vegetables and cereals in terms of taste, appearance and shelf-life.

Palestinian wheat varieties are important as a food source. The grains are either grounded to be used in bread preparation, or they can be boiled, dried and then ground to form what is called borghol. Borghol is used to prepare several kinds of traditional foods including Mjaderat borghol, Kubeh, and Tubbouleh.

In 2006, a community seed bank was established to strengthen restoration, conservation and storage of local landraces. Harvest and processing involves more than 100 families from 7 communities in the Nablus area. Members of the Community-based Seed Bank for the Nablus District cultivate and process around 200,000 kilos of wheat and wheat-derived products, 75,000 kilos of tomatoes, and 2,000 kilos of sorghum. These figures are increasing as the number of collaborating farmers is growing.

Animals and Insects

RODRIGUAN FOWL

Location of product: RODRIGUES ISLAND, MAURITIUS

Producer organization: Rodrigues Local Poultry Association

Name of species and ecosystem: A mixture of Rhode Island Red, Australorp and Naked Neck fowl breeds introduced on the Rodrigues Island two to three centuries ago by early settlers

Global distribution: Endemic to Rodrigues Island

It is estimated that around 4000 farmers are involved in backyard family poultry production in Rodrigues Island. Families may raise a few to a hundred chickens in their backyards. There is a need to preserve the indigenous fowl for its genetic biodiversity and for the economic value they hold for farming families. Some current challenges to the production system are: 1) high mortality rate of chicks, 2) lack of disease control through a prevention routine by farmers, 3) degeneration of breed from cross-breeding, 4) poor marketing structure, 5) decrease in exportation and competition with imported or lower cost chickens, and 6) loss of fowl in free-range farming from theft and car accidents.

In order to improve overall production and availability of Rodriguan fowl the Rodrigues Local Poultry Association is organizing the farmers from west Rodrigues, mostly women, with the Rodrigues Trading and Marketing Co. LTD. Through a demonstration project, in conjunction with research and policy analysis, the Association is developing capacities to conserve the local Rodriguan Fowl and produce it sustainably. These efforts include improving its quality and flavor. The project is in line with the Commission for Agriculture's strategic plan to meet the expected demand of 900 tons of poultry by 2015. It also meets the goal to achieve self-sufficiency on for poultry consumption on the island. The Association hopes the demonstrative project will serve as an example that can be replicated, especially for the benefit of low-income women farmers, throughout the island.

Backyard chickens considered the local, indigenous breed of Rodrigues Island. Due to their specialized nature, the Rodriguan Fowl is in high demand in mainland Mauritius. Locally, they are an important source of food and income for Rodriguan farmers.

LIVESTOCK FEED FROM PALM TREES REMNANTS

Location: GAZA STRIP, PALESTINE

Producer organization: Al-Ahelya Association for the Development of Palm and Dates

Name of species: *Phoenix dactylifera*

Global Distribution: Distributed in rural areas of Gaza Strip

Production description: Palm and date trees have a high economic value to Palestinian farmers. In order to increase the value further, the Al-Ahelya Association for the Development of Palm and Dates developed a new way to utilize palm and date tree remnants. The practice was to burn the remnants of palm and dates trees or dispose of them after manufacturing products or harvesting dates. Now, the palm tree remnants, date seeds, and corn and wheat are mixed together for animal feed to reduce pressure on grazing areas and prevent further land degradation and negative impacts on local varieties of plants. The mixtures can be specialized to achieve the specific nutritional criteria needed for animals (according to international standards). The mixture of the fodder varies to suite the dietary needs of sheep, goats or rabbits, with the possibility of implementation of several mixtures according to the farmers and market request. It is a concentrated animal feed, which means it can be used alone to meet the full nutritional needs of the animals. The Association is continuing to experiment with the nutrition standards to achieve the highest possible level. They are producing 200 tons annually, which is filling the animal feed gap created by the market blockage and the ability to improve the productivity up to 400 tons. Thus, this local source of animal feed is sustainable and economical.

Animal feed made from the remnants of palm trees and date seeds. The palm tree material is used for several products such as handicrafts and in food processing. The animal feed is made from what is left of it after the manufacturing of these other products.

Animals and Insects

Backyard chickens that are a local, indigenous chicken breed developed in Lesotho form a combination of different breeds (both exotic and indigenous). The indigenous chicken is identifiable by its plumage that ranges from pure black or white, to speckled red and yellow and black and white to gray colors (the exotic varieties are white in color and larger in size). Commercially, these backyard chickens are considered tastier than typical commercial varieties. They are also more resistant to diseases due to their genetic diversity. Produced organically, families rely on them for meat, eggs, and manure. Basotho, citizens of Lesotho, believe that the chicken is an asset that every household should have.

INDIGENOUS BASOTHO CHICKEN

Location of products: NOTSI VILLAGE, LESOTHO

Name of species and ecosystem: Result of indigenous and exotic breeds; Lesotho lowlands, foothills and mountains

Global distribution: Lesotho and the neighboring parts of South Africa

Production description: The Basotho chickens, which are a great asset to the poverty stricken rural communities of Lesotho, are threatened to extinction by epidemics of Newcastle disease (a contagious bird disease affecting many domestic and wild avian species) and the introduction of exotic commercial breeds. The objective of SGP Lesotho initiative is to conserve the genetic pool of the indigenous chicken for its unique characteristics. Lately more emphasis has been put on the koekoex breed (a breed from South Africa), which may be a questionable strategy as it does not brood (care for eggs). The normal practice in the rural setting, where the indigenous chickens are mostly found, is to use the indigenous chickens as surrogate hens for brooding. These chickens scavenge for their food and survive with little care and management, and, therefore, they are suitable for the most vulnerable groups of society and can survive in very harsh conditions. Another benefit is that they produce meat and eggs without contributing to the deterioration of the natural grazing land. This is very important when considering the degree of land degradation in Lesotho.

The Ha Notsi village has been identified as a model village, based on vulnerability and accessibility, for intensive support since it is close to the Livestock Development Centre located at Ha Notsi resource centre. The target beneficiaries in this project are vulnerable households such as those affected by the HIV and AIDS pandemic, who are in dire need of improved nutrition and income for livelihood support. The community here is still very rural and households continue the tradition of raising this Basotho chicken. Due to the awareness created about the importance of these chickens' genetic diversity, many households do not want to sell their chickens until they increase their stock.

The volumes of the Basotho chickens in this village are still average. The price per bird has gone up due to the high demand created by the Chinese community have fallen in love with the Basotho chicken meat. The organic food market has also supported the rise in price. The other advantage is that these chickens are available throughout the year. The high demand is also associated with the increase in the number of non-governmental organizations supporting community koekoex chicken projects that require the Basotho chicken hens to act as surrogates.

THE COMMON GARDEN SNAIL

Location of product: BANGA BAKUNDU FOREST RESERVE, MUYUKA, CAMEROON

Producer organization: Yoke, Ikata, Lykoko and Banga Bakundu Wildlife Common Initiatives Groups

Name of species and ecosystem: *Helix aspersa*; forest, mountain and coastal ecosystems

Global distribution: Native to the Mediterranean region, western Europe, from northwest Africa and Iberia east to Asia Minor, and north to the British Isles. In Cameroon, these snails are commonly found in the South West, Littoral, East, Centre, South, West and North West Regions, which represent the forest, coastal and mountain ecosystems.

Production description: Heliciculture, snail farming, is an affordable production model that utilizes home gardens. Snails are grown in pens of 10 m^2 in home gardens and filled up to 30 cm with damp dark soil. Various leaves and fruits like pawpaw and banana are useful combinations for their fattening and reproduction. Depending on demand an individual could construct about 3-4 pens for sustainable production.

The Southern Bakundu Forest Reserve is highly known for snail farming. This region is situated about 30 km north of the Mount Cameroon and is characterized by vast Cameroon Development Corporation banana, oil palm and rubber plantations and extensive primary and secondary forests. The communities are prohibited from hunting and extracting of forest resources from the reserve. Home grown snails are a means for reducing pressure on the reserve's natural resources and providing alternative food sources. According to World Conservation Society (WCS) figures, the annual cost to run a snail farm is $87 and selling 3,000 snails per year brings in about US$413. This is compared to the $70 that an occasional poached gorilla could provide.

The region is inhabited mostly by the Balong and Bakundu people, who are largely wild fruit gatherers and hunters, who depended on the reserve but are gradually relying less on hunting as they invest in alternative activities through training from the SGP Cameroon project.

Exporting snails is possible through AFACOCOA Ltd, who are licensed breeders and exporters of edible snails in Kumba, South West Region of Cameroon. Through websites like www.alibaba.com AFACOCIA Ltd. could source home garden snails.

Snails cultivated in home gardens in the Southern Bakundu Forest Reserve area in Muyuka Sub-division of the South West Region of Cameroon. In Cameroon, snails are a delicacy prepared in a pepper soup with onion, garlic, and tomato or fried with spices. Snails are an alternative protein source to bush meat, which is obtained through poaching of endangered wildlife from the Banga Bakundu forest reserve. In addition, snails provide a steady income to the 21 communities in the South Western Cameroon. The home garden snails are accessible and also alleviate communities' reliance on wild snail populations.

Animals and Insects

GAINT TIGER SNAIL

Location of product: NOHON YOUKOU, NANE AND GBOWÉ VILLAGES IN THE DEPARTMENT OF GRAND-BEREBY, COTE D'IVOIRE

Name of producer organization: Association of Youths of Grand-Bereby (AJGB)

Name of species and ecosystem: *Achatina achatina*; forest ecosystem

Global distribution: native to Western Africa

Snails are very popular among most of the national population in Cote D'Ivoire. They are collected in forests seasonally and sold by lot from April to May depending on their sizes. This project aims to protect forest biodiversity through actions promoting the Achatina achatina snail (the giant tiger land snail) in the rural supply chains.
Snail farming is an ideal economic activity for land scarce and poor soil areas as it requires very little land for production. The beneficiaries are people in the villages of Nohon Youkou, Nane and Gbowé in the department of Grand-Bereby grouped in the Association of Youths of Grand-Bereby. The establishment of snail farming required training in farming techniques, packaging and marketing. Five "escargotières", or snail mounds, were constructed.

Snails cultivated by women in the village cooperatives.

ORGANIC FERTILIZER

Location of product: ABESIM AND THE VOLTA BASIN, GHANA

Producer organization: Environmental Protection Association of Ghana

Name of species and ecosystem: Invasive Aquatic weeds (are very common on the river bodies especially on the Volta River of Ghana)

Global distribution: Invasive aquatic weeds are common worldwide on major international rivers

Production description: The Environmental Protection Association of Ghana is a network of environmental farmer-based organizations whose main aim is to promote sustainable agriculture through the preparation and use of organic compost. The Association organizes educational programs on the harmful effects of chemicals, builds farmers' capacities in organic farming, and produces and sells organic fertilizer.

The organic fertilizers are produced from a highly managed compost preparation in an open flat area where the organic materials are allowed to compost under temperature regulations and turning. After the materials are fully decomposed, they are bagged and sold firstly to members of the Association. The Association produces and supplies organic fertilizer to 150 farm families in the vegetable producing areas of Brong Ahafo region. Each family receives 25 bags of organic fertilizer annually, enough for two farming seasons. The Association sells 1,250 bags of organic fertilizers to other vegetable growers who are not members of the Association.

Organic fertilizer made from a combination of carbon-rich, brown organic matter and nitrogen-rich, green organic matter. Dried leaves, straw, wood chips, vegetation from two invasive fresh water species (Vossia sp. and Echinochloa sp.), guano bat dropping and chicken and cattle droppings are typical inputs of this organic compost. Analysis of the fertilizer shows the following nutrients composition.

High organic matter content and biological activity make composts effective in a variety of applications, including erosion control, re-vegetation, decomposition and vegetative growth of organic matter and bioremediation. Commercial production and use of compost ensures high microbial biodiversity in agricultural soil, which encourages interspecies relationships and inter-population interactions for healthy, abundant soils. As a result, agricultural production is more adaptable to environmental change and stress.

FOOD PROUDCTS

Honey and Other Bee Products

BAVIAANSKLOOF WILDERNESS AREA HONEY AND MEAD

Location of product: BAVIAANSKLOOF, EASTERN CAPE PROVINCE, SOUTH AFRICA

Producer organization: Friends of the Baviaanskloof Wilderness Area

Name of species and ecosystem: *Apis mellifera scuttelata* and *Apis mellifera capensis*; Mountain ecosystem, Cape Floral Kingdom

Global distribution: Native to central and southern Africa

Production description: A conservation project of the Baviaanskloof Nature Reserve, the honey is produced among the diverse flora of the Cape Floristic Region, home to more than 1000 different species. One bee species (Apis mellifera capensis) used in the hives is known for its unique ability for unfertilized worker bees to lay fertilized eggs without mating. This process reproduces a queen bee.

Baviaanskloof is home to a number of small communities of impoverished farm workers and their families. Honey and mead are income-generating activities with the potential for significant growth. The honey is sold locally while mead production could reach expanded markets in the U.S. Makana meadery is mentoring the Baviaanskloof communities; they currently export to the U.S.

Honey and mead produced from two local bee species in the Baviaanskloof Wilderness Area, part of a global biodiversity hotspot and World Heritage Site.

KILIMANJARO HONEY

Multi-floral, natural liquid honey from native African bees. It is golden in color with a strong aroma. It is used as food supplement and medicinally for persistent coughs and to treat burns.

Honey is used as food and also as cash earning food stuff, many communities who happen to engage in honey harvesting have low income and thus it has proved to contribute in poverty reduction. The project involves 23 village groups consisting of 11 members each men and women.

Location of product: VILLAGES ADJACENT TO FORESTED AREAS ON THE SLOPES OF MT. KILIMANJARO IN MOSHI AND HAI DISTRICTS, TANZANIA

Name of species and ecosystem: *Apis mellifera scutellata*; forested areas on slopes of Mt. Kilimanjaro

Global distribution: Native to central and southern Africa

Production description: Using modern equipments and improved ways of beekeeping, the honey produced by this technology uses closed fire with a smoker. This reduces the chances of forest fires as compared to the traditional way of beekeeping where open fire is used, and thus resulted into uncontrolled fire. The honey is sold in 250 gram containers under the Kilimanjaro Golden Honey brand. It is sold in containers of 250 grams.

Tanzania is second in honey production in Africa after Kenya. In the total 28.66 tons of honey per year in Tanzania about 7 tons comes from Kilimanjaro. There is still a need to promoted improved beekeeping through training. There are still many beekeepers using traditional means with open fires. This reduces the quality of honey as it has fire debris, smoke flavor, which alters the natural honey taste.

Honey and Other Bee Products

WOMEN-CULTIVATED HONEY PRODUCT

Location of product: BAYA, (130 KM FROM BAMAKO), MALI

Producer organization: Action for Rural Growth and Protection of the Environment

Production description: In June 2007, the Action for Rural Growth and Protection of the Environment in association with SGP Mali developed a project to strengthen women's skills in the rural community of Baya, Mali, to protect against land deterioration. The women were trained in honey product making. Profits made from product sales enable the women to grow endangered plants. In addition, new honey production techniques protect the bees.

The honey is sold locally in supermarkets and outdoor markets. Overall, the income is improving their quality of life and paying for their children's schooling and health costs. Additionally, they promote Rotating Savings and Credit Associations where local savings/reserves are a traditional instrument of solidarity towards the fight against poverty in Mali.

Honey, honey soap, and beeswax candles made by rural women.

BEE PRODUCTS

Location of the product: BORODAROU IN THE COMMUNITY OF GONGOUNOU, REPUBLIC OF BENIN

Name of the species and ecosystems: *Apis mellifica* and melliferous plants such as *Parkia biglobosa*, *Itellaria paradoxa*, *Mangifera indica*; gallery forests

Production description: Honey and other bee products is a source of additional income Borodarou community, a cotton-producing community. For this reason the beekeepers pay close attention to the ecosystem around their hives. By protecting vegetation and water sources, they protect their bees from traveling long distances and overworking. This increases their hive yields. In the Borodarou area, it is no longer possible to burn vegetation in areas where there are hives. Likewise, grazing is also forbidden near the hives and tree pruning is not permitted. As a result, beekeeping is a central activity for biodiversity conservation and education about important flowering species for bee pollination.

Borodarou is an agricultural community of three ethnicities (Gando, Bariba and Fula). Beekeeping is highly valuable not only for income but for the use of bee products in traditional medicine, which is practiced widely.

Additional community members would like to do beekeeping and are currently seeking financing to purchase equipment. The local honey market is not saturated. The quantity of honey harvested in 2010 was 90 liters for 11 hives. The products are sold in Borodarou and exported to southern Benin.

Wild bee produced honey, royal jelly, bees wax, propolis and pollen. There are many uses for these products. Propolis, for example, is used as an antibiotic; bee pollen is very rich in protein and beneficial for children's growth. It has a very high market value; and royal jelly is also prized for its nutritional value. The quantity obtained by beekeepers tends to be low, usually just milligrams, making this a high-priced product.

Honey and Other Bee Products

NATURAL HONEY

Location of product: BUGARAMA DISTRICT, MURAMVYA PROVINCE, BURUNDI

Producer organization: Association Femme et Environnement of Burundi (AFEB/Dukingirikibira) (Women and Environment Association) - “Let us protect our forest”

Name of species and ecosystem: *Apis mellifera*; mountainous forest of the Kibira National Park

Global distribution: Around the Kibira National Park, Bugarama area

Production description: This natural honey is produced in modern bee hives and is harvested using knives, smoke (for removing bees), and buckets. It is processed with a honey extractor, which is used for extracting honey from the comb. The nectar comes from the following flower species: Crassocepharum montuosum, Celtis gomfophylla, Albizia gummifera, Markhamia lutea, and Crassocepharum manii. The pollinating season is February, May, June and October.

The AFEB is an association made up of women who have the objective of conserving the Kibira National Park. These women went to live in the national park during the socio-political crisis that happened in Burundi from 1993 – 2004. The women of AFEB went to the park in order to escape war. Women of this association lived in Kibira National Forest during from 1993 to 1997. In 1997 the war in Bugarama region ended, and the women returned home. They decided to make an association for protecting the biodiversity of the National Park as their lives were saved among others by eating fruits from the trees of the park. They stated: “This Kibira National park gave us food during the war, now we have to protect and conserve its biodiversity.” In 1999 to 2000, they began to hold local meetings in order to create the association, supported by local authorities. In 2001, they officially created the AFEB Dukingirikibira and began to implement activities for the protection of the Kibira National Park. Various partners and donors support them including the SGP Burundi for the .planting of 300,000 indigenous trees and implementing beekeeping activities. Among other things the honey is used in a mixture with banana wine for a traditional drink in wedding ceremonies. Burundi is also named the country of milk and honey (showing the value of honey in Burundi; a country of milk and honey means a country with prosperity and peace). So far, the quantity of honey produced by the AFEB is low, but after 7 months the quantity will increase as the total number of modern bee hives is now 200.

Natural honey is primarily used for the feeding of bees, a species highly contributing to the biodiversity in the Kibira National Park. Bees are the main contributors in plant and tree pollinization, contributing to the plants reproduction and dissemination. The species of bees located in the Burgarama area is Apis mellifera.

Natural honey has many medicinal values such as reducing blindness in the elderly and increasing the longevity. This natural honey is bringing in an income for the women of the Association Femme et Environnement of Burundi, (AFEB) and subsequently motivating them to conserve the Kibira National Park’s biodiversity. The Kibira National Park has an area of 40,800 hectares and is an mountain forest ecosystem. The National Park is home to many native birds and insect species. The flora is endemic to the vegetation of east African mountains.

HONEY

Location of product: BOUGOUNON, FILASSO AND KODOUM, ODIENNÉ VILLAGES, CÔTE D'IVOIRE

Name of producer organization: Association for the Supervision of Honey Producers of Sarhala (AEPMS)

Apis mellifera adansonii; Savannah Ecosystem with gallery forest

Production Description: The villages of Bougounon, Filasso and Kodoum in the Mankono department of Coite d'Ivoire struggle with balancing economic needs and maintaining the sustainability of natural resources (soil, water and forests). As a result over-exploitation of the soils, agricultural productivity is low. This project proposed organic beekeeping as an economical and ecological solution to fight against the poverty while protecting forest biodiversity. An association of beekeepers was established. The members received beekeeping training and equipment with 270 hives installed in the three villages. Firewalls were created around the forest areas to protect from bush fires. Today, the villages produce an average of 8,100 gallons of honey every year. The total income generated on average per year is 16.2 million FCFA (approx US$38,784) and the annual income generated per a beekeeper is more than 500,000 FCFA (approx US$950).

Organic honey from hives in the Savannah with intermittent gallery forests.

Juice/Tea/Beverages/Yoghurt

MARULA BEER

Location of product: TEMBE, KWAZULU NATAL PROVINCE, SOUTH AFRICA

Producer organization: Tembe Traditional Council (Tembe Community)

Name of species and ecosystem: *Sclerocarya birrea*; miombo woodlands of Southern Africa and the Sudano-Sahelian range of West Africa

Global distribution: sub-Saharan Africa outside the humid forest zone from Mauritania and Senegal to Ethiopia and Eritrea, south to Namibia, Botswana, Zimbabwe, Mozambique, South Africa and Swaziland; also present in Madagascar and introduced to Mauritius, the island of Réunion, Australia, India and Oman

Production description: Marula is a vital food to the Tembe, an indigenous Zulu community of the Northern Kwazulu Natal province (near the borders of Mozambique and Swaziland). At an annual event, the Tembe chief gathers the traditional leaders, government representatives, and community members to celebrate and express thanks for the first marula fruit of the season. This cultural celebration, called Umthayi, kicks off the marula harvest in January.

Marula is most known as the fruit that “drives elephants mad” when dropped to the ground and lightly fermented. It was a dietary mainstay in South Africa, Botswana and Namibia throughout ancient times. The marula tree is found in many of South Africa's Game Parks and rural communities, including Limpopo Province, KwaZulu Natal, Eastern Cape, and Mpumalanga.

Marula beer is usually available in South Africa in summer months, while demand is highest during the first harvest celebrations. Marula beer is made using the ripe marula collected from the ground. The fruits are peeled and then mixed with clean water in the bucket, and then the pulp is mashed to produce a thick liquid. The remaining pulp and pips are squeezed by hands and then removed. The liquid will then be covered in the bucket for up to 5 days for fermentation process to take place. The locally produced marula beer is consumed locally and with improvements in quality standards and storage conditions it could be packaged and sold nationally. The process of making traditional marula beer at the community level is still done by hands and at a small scale.

Marula beer is a traditional product enjoyed by many, especially during the summer season. The beer is made from the amarula fruit, a protected tree species in South Africa which has multiple uses for its fruit, nuts, leaves and bark such as food, cultural uses, ornamental and medicinal uses. The abundant fruit is high in vitamin C and essential minerals. Marula fruit products include jelly, jam, lotions and other beauty products, and amarula cream liquor.

ROOIBOS TEA

Location of the product: SOUTH-WESTERN SOUTH AFRICA

Producer organization: Heiveld Cooperative, www.heiveld.co.za

Name of species and ecosystem: *Aspalathus linearis*; Fynbos biome, a natural shrubland in a small belt of the Western Cape of South Africa

Global Distribution: Produced and sold in South Africa, the product is currently exported to the United Kingdom, Germany.

Production description: Aspalathus linearis is endemic to the south-western region of South Africa, which is predominately semi-arid and mountainous. Fynbos biome, the biodiversity hotspot in South Africa's Cape region, is currently the only production location of rooibos tea in the world. Up to 99% of all rooibos is cultivated with 95% of all rooibos produced on large farms or plantations, which also produce potatoes and grapes. The co-operative farms in the Fynbos biome have a significant impact on the ecosystem, as large areas have been cleared in the past for their establishment.

The co-operative is comprised of farmers of Khoisan descent, an indigenous community known for their knowledge of the production and management of the rooibos tea plant. The founding members of the co-operative wanted to create a vehicle for social justice, and one of their objectives is promoting the social and economic development of the Suid Bokkeveld community. The Heiveld developed trading relations with fair trade partners who support the co-operative by selling products at premium prices and passing the benefit on to the producer.

Consumer demand for rooibos, based on exports and South African sales figures, indicate that demand grew from 10,000 metric tonnes in 2004 to 15,000 metric tonnes in 2008. The Heiveld Co-operative produces about 50-80 tons of rooibos tea annually, which it exports directly to its clients. The Heiveld is a registered exporter, and export orders are tested and certified by the South African Perishable Products Export Control Board prior to loading. Heiveld rooibos tea is certified as an organic product by the EU and Naturland[7] Standards, as well as Fair Trade International.

Rooibos (Afrikaans for "red bush") is a broom-like member of the legume family of plants, which grows in South Africa's Fynbos, a shrubland in the western cape of South Africa. The plant is used to make herbal tea known as rooibos tea, or bush tea (in Southern Africa), redbush tea (in the UK), South African red tea, or red tea. The Heiveld Co-operative produces various grades of organic rooibos:

Supergrade: High quality rooibos, medium cut
Superfine: High quality rooibos finely cut, suitable for high quality tea bags
Coarse: Medium strength rooibos, best suited for ice teas, flavoured teas and extracts

[7] http://www.naturland.de/home0.html

Juice/Tea/Beverages/Yoghurt

GITUGI BLACK TEA

Location of product: lower SOUTHERN SLOPES OF MT. KENYA AND THE EASTERN SLOPES OF THE ABERDARES MOUNTAIN RANGE, KENYA

Name of producer organization: Produced by Gitugi Tea Factory Company Limited and marketed by Kenya Tea Development Agency (KTDA) Limited

Name of species and ecosystem: *Camellia simensis*; upland mountain (Mt. Kenya World Heritage Site)

Global distribution: cultivated in tropical and subtropical climates

Production description: Tea production is one of the pillars of the modern Kenyan economy. Kenya is currently the third largest producer of tea in the world and the largest exporter of tea worldwide. Gitugi Tea is recognized as a premium producer of high-quality Kenyan black tea. It was selected for product branding as part of a campaign to promote Mt. Kenya as a World Heritage Site (WHS). The Community Management of Protected Areas Conservation Initiative (COMPACT), a sub-programme of the SGP at the global level, together with the Kenya Federation of Agricultural Producers (KENFAP), identified several local agricultural producers with high-quality products who also were active in environmental conservation work. A professional artist designed attractive, new labels for selected products which included a conservation message. The new Gitugi Tea packaging appeared in the market in November 2011 with the following conservation message: "Gitugi Tea factory together with their farmers in partnership with SGP-COMPACT and KENFAP support conservation of Mt. Kenya World Heritage Site. Let's join hands to save our trees and rivers."

Gitugi Tea Factory promotes environmental conservation efforts among its tea farmers in the Mt. Kenya and Aberdares region through tree planting activities and promotion of agroforestry. Through agroforestry the forest cover is restored and the water catchment area improved for better water quality. These activities helped to conserve biodiversity in the Mt. Kenya and Aberdares ecosystems, as well as downstream ecosystems that rely on water from Mt. Kenya and the Aberdares.

Gitugi Tea Factory Company Limited was formed in 1984 and is located between Mt. Kenya and the Aberdares mountain ranges. The tea factory is supplied by approximately 5,500 individual small scale farmers with about 1000 ha of tea plantations owned and operated by the residents in the area. In recent years, rainfall patterns have changed as a result of forest destruction and climate change, decreasing the productivity of the tea. As a result, household incomes have fallen and many residents resorted to harvesting natural resources from the nearby forests. Through the new branding of their tea, there is hope that the importance of the Mt. Kenya WHS will be elevated and the pressure on the natural resources lessened.

Gitugi tea is internationally recognized as one of the best black teas in the world, with a rich flavor and aroma. The tea plants are grown slowly in the fertile soils of Mt. Kenya and the Aberdares in cool temperatures at high altitudes, which helps to provide the distinctive and rich flavor for which the tea is known.

MT. KENYA YOGHURT

Location of product: MERU COUNTY, KENYA

Name of producer organization: Meru Central Dairy Cooperative Union

Name of species and ecosystem: cow milk with bacterial cultures including *Lactobacillus delbrueckii subsp. Bulgaricus* and *Streptococcus salivarius subsp. thermophilus*. *Lactobacillus acidophilus* and *bifidobacteria*; upland mountain Mt. Kenya World Heritage Site

Global distribution: Mt. Kenya Yoghurt products are sold to local and regional shops and supermarkets in the Mt. Kenya and Nairobi areas of Kenya

Production description: Mt. Kenya Yoghurt was selected for product branding as part of a campaign to promote Mt. Kenya as a World Heritage Site. The Community Management of Protected Areas Conservation (COMPACT) Initiative, a sub-programme ofthe SGP at the global level, together with the Kenya Federation of Agricultural Producers (KENFAP), identified several local agricultural producers of high-quality products who also were active in environmental conservation work. A professional artist designed attractive, new labels for selected products which included a conservation message. Following the product launch ceremony in January 2010, vanilla and strawberry yoghurt containers from Meru Central Dairy Cooperative Union appeared on store shelves throughout the Mt. Kenya and Nairobi regions with the new labels which included the following conservation message: "Meru Central Dairy Cooperative Union in partnership with SGP-COMPACT supports conservation of Mt. Kenya World Heritage Site. Let's join hands to save our trees and rivers."

The dairy cooperative promotes environmental conservation efforts among its farmers in the Mt. Kenya and Aberdares region through tree planting activities and promotion of agroforestry. Through agroforestry the forest cover is restored and the water catchment area improved for better water quality. These activities helped to conserve biodiversity in the Mt. Kenya and Aberdares ecosystems, as well as downstream ecosystems that rely on water from Mt. Kenya and the Aberdares.

The Meru Central Dairy Cooperative Union was formed in the 1990's and consists of approximately 4,000 member households residing in eastern Mt. Kenya. In addition to dairy farming, many of these member households practice small-scale agriculture for household consumption and some additional income. Some family members in households near semi-urban areas such as Meru, Chuka and Chogoria towns also work in small service-oriented businesses or government offices.

Mt. Kenya Yoghurt is made from fresh, all-natural ingredients (milk, sugar, fruit, and live yoghurt cultures) and is free of preservatives. Combined with its smooth and thick texture, these qualities give the yoghurt a superior taste that has garnered several awards, including being voted "Best Yoghurt" at the East and Central Africa Cheese Festival in 2007 and 2009. Yoghurt also has high nutritional value as a source of protein, calcium, riboflavin, and vitamins B6 & B12. It may be consumed as a healthy and tasty snack or as part of a balanced meal.

Breads

DIKA BREAD

Location of the product: ZOÉTÉLÉ, SOUTHERN REGION, CAMEROON

Producer organization: RENAISSANCE, EVAK BEFAM and MARAOT Common Initiative Groups

Name of species and ecosystem: *Irvingia gabonensis* and *Irvingia wombulu*; undisturbed lowland forest of the African tropics.

Global distribution: Both Irvingia spp. occur in the humid lowland forests of tropical Africa in Angola, Cameroon, Central African Republic, Congo-Brazzaville, Equatorial Guinea, Gabon and the Democratic Republic of Congo. I. wombolu extends as far west as Senegal. Dika bread can be found in African tropical countries, in Europe and North America.

Production description: Traditionally, the fruits are piled up in heaps and left to ferment before the seeds are extracted. As an alternative to fermentation, the fruits can be split open with a machete to reveal the hard seed inside. The extraction of kernels from seed consists of splitting the seed in halves with a machete, and the kernel is removed with the help of a knife.

Dika bread is obtained by roasting and grinding the kernels into a paste, which is put into a cake container and left to dry for a few hours. Once dried, the cake is removed from the container and is ready for use. Dika bread can be stored for up to one year.

The trade for the mango kernels from Cameroon to neighboring countries has been valued at US$ 260,000/year for 104 tons. There are few statistics available to quantify the volume and value of trade locally, regionally or internationally. The price that producers get for the fruits and kernels depends on the location of the market and fluctuates greatly with seasonal availability. Although fresh seeds are seasonal, the production of dika bread is available all year round. The market chain for this product is not well organized, and the production is not limited to a particular group. However, the product is in the local, national and international markets.

"Dika bread" is a sun-dried cake of I. gabonensis (African mango) and I. wombolu (Bush mango) kernels. Despite the high value of the bread, production of it is generally at the subsistence level. The natural habitat for both mango species is humid lowland forests. The fruits are not currently endangered, but clearing forest for agricultural land is threatening their natural habitat.

African mango fruit is rich in vitamin C and is widely consumed as a dessert fruit or snack throughout Western and Central Africa. It is used for making jam, jelly and juice. Bush mango kernels (extracted from seeds) are an important part of the West and Central African diet, providing carbohydrate and protein. The kernels ground into a paste are used as a food thickening agent in soup and stew in West African dishes.

SEAWEED BREAD

Location of product: NGAPAROU AND POINTE SARENE VILLAGES, SENEGAL

Producer organization: Ngaparou and Pointe Sarene Women's Associations

Name of species and ecosystem: *Gracilaria verrucosa*; coastal, marine ecosystem

Global distribution: West African coast

Production description: The unsustainable plundering of sand from the Senegal coastline is destroying coastal vegetation. Moreover, building construction on the coast has reduced access to the sea-water runoff and therefore contributes to the loss of sea algae. Through sustainable seaweed products, women in two villages Ngaparou and Pointe Sarene are changing the outlook for Senegal's coast. The main objective of project is to preserve the algae in parts of the Continental Shelf while supporting traditional knowledge and sustainable harvesting practices.

In both villages, local women received training in the identification, collection and treatment of seaweeds for use as an agricultural fertilizer and in food consumption. In Pointe Sarene, the women are now producing seaweed fertilizer, and in Ngaparou, the women are collecting seaweed for bread making.

Harvesting seaweed is an important source of revenue for these women, who struggle to subside above the poverty level. The women can earn up to US$100 per month by selling algae for end product use. The algae market is also creating local employment. The Ngaparou bakery that makes seaweed bread employs on average 35 women to make 2000 breads daily. A private company has about 15 full time and 60 part time employees.

Bread made from the Gracilaria verrucosa seaweed, a red algae from the West African coast.

Spices

DRIED FRUITS FOR TEA, PRESERVES, AND JAMS

Location of the products: ADUNKO-DAHO (COMMUNE OF ABOMEY-CALAVI) AND AVLÉKÉTÉ (COMMUNE OF OUIDAH) VILLAGES, BENIN

Producer organization: Adounko- Daho and Avlekete group of Solar Salt Women

Name of the species and the ecosystems: Salt; mangroves

Global distribution: Sea salt is found all around the world

Production description: Solar drying for the production of sea salt it a tremendous contribution to local biodiversity and livelihood protection. In the villages of d'Adounko-Daho and Avlékété before solar drying was used, the woman made sea salt through fire with mangrove wood. The impact on the local mangroves was devastating. Clearing mangrove trees creates desertification, erosion and siltation, the destruction of fish spawning grounds and fisheries, and the deterioration of the local fishing economy.

Solar drying, on the other hand, decreases pressure on the mangroves and improves the working conditions for the woman. Overall, the solar drying technique cuts down on the women's working time and labor, and they do not have to contend with fire and smoke conditions.

The production of sea salt is simple. Ocean water is collected in containers to be solar dried in batches. The salt water becomes brine, high salt concentrated water, which evaporates and crystallizes, eventually, becoming a pure, white salt. Sea salt is natural, without impurity, brilliant white, and contains the essence of the sea.

Sea salt from d'Adounko-Daho and Avlékété is sold in local markets (Dantkopa, Kpassè, Come) and supermarkets; travelling salesmen sell it throughout Benin as well. All the salt is sold as soon as it is produced. Currently, 20 kg per day from 16 batches are produced. Greater profitability and sustainability of the mangroves could be attained with up to 100 kg per day in 90 batches.

Solar dried sea salt produced by rural women in Benin. Three types are produced (small-, medium- and large-granule sizes) each with a different purpose. The small grain salt is used in the hotels, restaurants and households for cooking. Medium grains are used in glass making and marine fish products. Among other uses, large grain salt is used for drying meats and fish.

The Heiveld Cooperative and Rooibos Tea:
Reclaiming local knowledge for prosperity and the environment

Figure 1: The Suid Bokkeveld area where the Rooibos tea is produced

As with many other post-colonial societies the descendents of the KhoiSan, the “first people” of South Africa, experienced systematic and profound disempowerment by colonial settlers and their descendents. In the rural areas of the Western and Northern Cape Provinces of South Africa the modern descendents of the KhoiSan speak a language derived from Dutch, and they remain on the economic fringes of society today. Apartheid was officially abolished in 1994, but its legacy lives on in the inequitable social and economic relations in these communities where more than 90% of agricultural land belongs to white land owners and so-called “coloured” farmers are confined to the most marginal areas.

One of the many legacies of the KhoiSan is their knowledge of rooibos (Aspalathus linearis), an indigenous plant used since pre-historic times to produce a health-giving and refreshing beverage. This knowledge was shared with white settlers, who in the 20th century were able to benefit from the commercial opportunities offered by the growth of an export-oriented industry. The labor to establish the huge plantations of rooibos upon which the industry is based was provided by “coloured” people, who were prevented from participating in the other benefits of the industry by racially discriminating policies, legislation and other means of exclusion. Those few “coloureds” who had access to land on which rooibos could be produced (usually only on a small scale) were excluded from markets and state support.

The rooibos plant is native to the harsh environment of the mountainous winter rainfall areas west of South Africa and has evolved a number of unique adaptations to thrive in its drought-prone, low nutrient habitat. The leaves and young shoots of rooibos have been used by indigenous peoples of South Africa since prehistory to produce rooibos tea. The Suid Bokkeveld, where the rooibos is cultivated is a remote rural area situated on an incised plateau to the north of the Cederberg Mountains, in the

Northern Cape Province of South Africa (Fig.1). The area lies south of the village Nieuwoudtville (31° 23'S, 19° 07'E) covering an area of approximately 1,600 km2.

The Heiveld Cooperative is an organization of small scale growers from the Suid Bokkeveld who produce cultivated and wild harvested rooibos tea for niche fair trade and foreign organic markets. It was founded in 2000 by 14 founding members and to date the Heiveld Cooperative has more than 60 men and women farmers as members. The founding members of the cooperative wanted to create a vehicle for social justice. One of its objectives is "promoting the social and economic development of the Suid Bokkeveld community." Through the contribution and support from local non-governmental organizations (NGO's), science institutions and donors, the cooperative developed and installed infrastructure for tea production and processing. The Suid Bokkeveld created employment for local community members, especially for women. The constitution specifies that 30% of the cooperative's profits are used to benefit people who are disadvantaged on account of gender and race. The Heiveld employs 3 mentor farmers, experienced organic farmers from the Suid Bokkeveld to advise local farmers on sustainable organic farming systems. Since its certification in 2002, fair trade is one of the cornerstones of the Heiveld Cooperative. The fair trade system ensures that the cooperative provides the finest organic rooibos tea while paying a fair price to the producers and ensuring that there are improvements in the lives of its members.

The Heiveld Cooperative is governed by a democratically elected board of 5 members, all of whom are small-scale rooibos producers and residents in the Suid Bokkeveld. The Heiveld constitution was developed in a participatory way, with high levels of transparency at each stage. The cooperative produces approximately 40 tons of rooibos per year and exports bulk and packaged tea to 7 countries in Europe and North America while selling some locally. Since its formation, members of the Heiveld Cooperative have collaborated with the Environmental Monitoring Group, Indigo Development & Change, the University of Cape Town and other research and development organizations to address production constraints and social needs. The cooperative members are integral partners in research and development innovations in the Suid Bokkeveld. They, contribute valuable local knowledge that otherwise would remain undocumented. The cooperative is undertaking farmer-driven activities to conserve soil and water through financial support from donors including the Global Environmental Facility's Small Grants Programme.

AQUATIC PRODUCTS

Marine

SUSTAINABLE SEAFOOD

Location of product: DIONOUAR VILLAGE, PERIPHERY OF THE NATIONAL PARK SALOUM DELTA, SENEGAL

Producer organization: Women's Federation of Dionouar

Name of species and ecosystem: *Penaeus notialis*, *Crassostrea gasar*, *Cymbium pepo*, *Anadara senilis*, *Sepia officinalis*; coastal, marine ecosystem

Global distribution: West African coast, 700 km zone along the Senegalese coast

Production description: Dionouar is a small island of 5,000 people. It is composed of several islands connected by inlets and bordered by mangroves. Over the years, the mangrove ecosystem has been negatively impacted through unsustainable oyster harvesting (cutting down mangroves to get to oysters) and cutting mangroves for wood for smoking fish. Mangroves are important breeding grounds for many marine species. Thus, these practices threaten their continued life cycle and livelihoods of islanders. Through the Women's Federation of Dionouar (FELOGIE), nine groups of women restored the mangrove ecosystem with sustainable management practices. These are: advocacy and empowerment of professional fisheries; capacity building (new oyster harvesting techniques); assisted regeneration of mangroves; a participatory code of good practice. The main results are the recovery of the mangrove's life-enhancing conditions, which restored spawning areas for fish. Several fish species reappeared, including Iphegenia (a type of mollusk), and rare species like Carpinella aurita, Epinephelus Aenus (white grouper) are abundant.

The FELOGIE produces over 80 tons of processed fish products annually with revenue of US$ 1,500,000. FELOGIE divides up the work through harvesting, processing and marketing divisions. They market the seafood at trade fairs in Dakar and organize tastings.

Seafood, shrimp, oysters, mollusk, cockle, cuttlefish and murex (sea snail), sustainably harvested off the island of Dionouar near the Biosphere Reserve of the Saloum Delta. Seafood is very popular in Senegal, especially the national dish "thiéboudieun "(rice with fish).

ENDEMIC BARINGO TILAPIA

Location of product: KAMPI YA SAMAKI, KENYA

Name of species and ecosystem: *Oreochromis niloticus baringoensis*; Lake Baringo

Global distribution: Endemic to Lake Baringo

Production description: The Baringo tilapia once formed a vibrant fishery, which supported a fish processing factory as well as a large fish market. In the 1960s, the fishery production ranged from 500 – 600 metric tonnes per annum but declined to less than 200 metric tonnes per annum by late 1980s. Since then, the catches are characterized by fluctuations, leading to periodic closures of the fishery during seasons of low catch. This can be attributed to several factors, but the introduction of the predacious lungfish (Protopterus aethiopicus) is the predominant factor. Competition for habitat coupled with predation pressure by the introduced species contributes to the decline in Baringo tilapia catches and sizes.

The species is endemic to Lake Baringo. Its ecological and economic significance made Lake Baringo a designated RAMSAR site (wetland of international importance) in 2002. This fish species is of potential economic value and currently it is utilized on a very limited scale for food.

Lake Baringo is surrounded by impoverished population that is challenged by prolonged droughts and perennial famines. Episodic floods aggravates the situation, bringing with it adverse effects ranging from diseases to destruction of property. During prolonged droughts the fishery is the only source of livelihood for the Baringo communities.

The goal of the community enterprise is to provide the freshest Baringo tilapia at competitive prices to customers within the country and abroad. Currently catches from the wild of the species have dwindled with an annual production of less than 10 metric tonnes with periodic closed seasons. The project seeks to produce over 500,000 young fish in constructed ponds. Most of the young are then stocked in special cages, designed to allow for the feeding and growth of the fingerlings. Once the fish are grown, they are released into the open lake to help replenish the fishery and the declining numbers of this endangered and endemic fish species. The overall goal is to increase production to 20 metric tonnes of adult Baringo tilapia per year. Given the high growth rate and breeding in ponds, additional ponds are needed for efficient production, rearing and holding young fish.

Baringo tilapia, a perch-like fish, endemic to Lake Baringo, Kenya. It has a mildly sweet, milky flavor and firm pinkish, white flaky flesh. It is highly nutritional and the most popular fish among consumers in the region. The species is the fastest growing among the tilapines attaining table sizes in only four months. Locally, the species is known as "samaki". The community values the species so much that they named one of the biggest towns on the lake shore Kampi ya Samaki.

Freshwater

CANNED TILAPIA

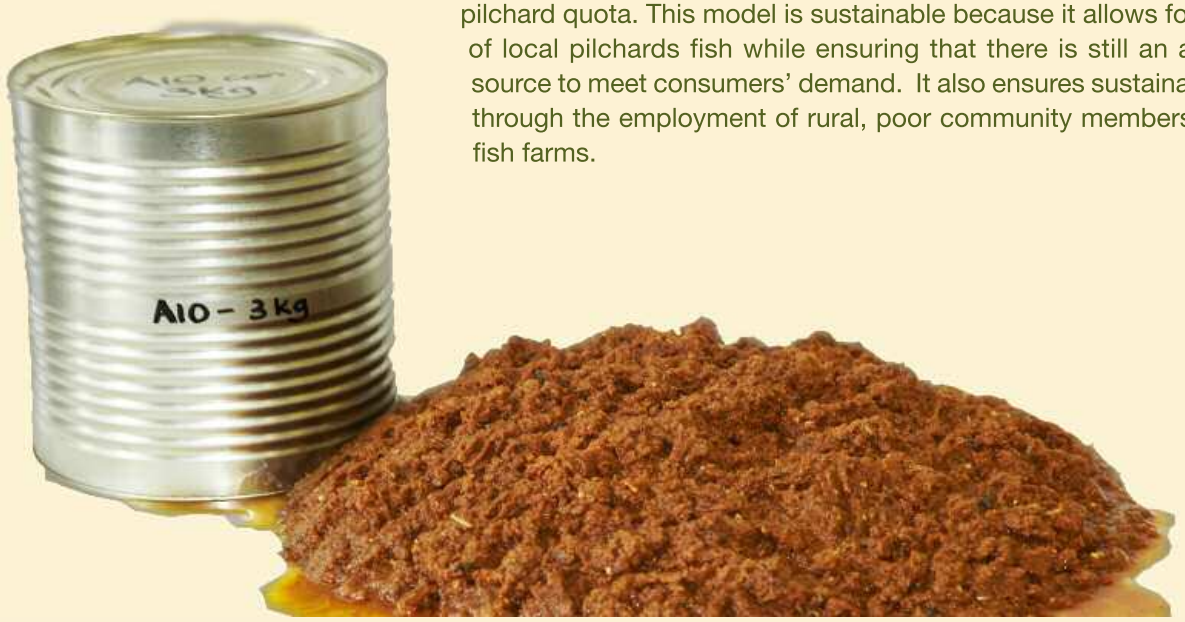
Location of product: CAMDEBOO, GRAAF REINET, SOUTH AFRICA

Producer organization: Camdeboo Women's Trust

Global distribution: native to Africa, can be found from Egypt to East and Central Africa, and as far west as Gambia

Production description: Pressure from overfishing of fish such as pilchard (sardines) motivated the women of Camdeboo to develop an alternative fish source for consumption. Since 2004, the allowable catch for pilchard has steadily dwindled from 457,000 tons to 90,776 in 2008. At this rate, South Africa's demand for pilchard is not keeping pace with its availability. There is demand for canned fish is high. The Camdeboo Women's Trust is developing tilapia farms to provide an alternative food source and to create jobs in a community where 40 % of the people live below the poverty line. Two-hundred and thirty women will be involved in the project, which includes raising and canning tilapia.

The tilapia will be produced in a manmade habitat, in big tanks, on farms originally aimed for agriculture. Water from the fish tanks is used for irrigation of farm crops. The production is done through the establishment of commercially viable aquaculture "clusters", each consisting of a central management farm and a network of satellite farms. The satellite farms benefit from the collaboration by receiving a shareholding in the central structure. Bulk buying of equipment and feed, collaborative marketing, dedicated training, high quality extension services, and legal and accounting support is possible through the cooperation between the various entities. The fish produced is canned in order to increase shelf life and sold at an affordable price to fill the enormous gap caused by the reduction in the annual pilchard quota. This model is sustainable because it allows for conservation of local pilchards fish while ensuring that there is still an alternative fish source to meet consumers' demand. It also ensures sustainable livelihoods through the employment of rural, poor community members in the cluster fish farms.



Farm-raised, canned tilapia produced by women.

FORESTRY PRODUCTS

Bioenergy

SUNFLOWER BIODIESEL

Location of product: GROWN IN COASTAL SAVANNAH ZONE, GOMOA EAST DISTRICT, AWUTU DISTRICT OF THE CENTRAL REGION; PROCESSING OF THE OIL IN TEMA, GHANA

Producer organization: Tema Cooperative Sunflowers Producers Association

Name of species and ecosystem: *Helianthus annuus*

Global distribution: Sunflowers are native to North America, but they are very often associated with the Mediterranean and tropics. This species has a broad distribution in all the six ecological regions of Ghana.

Production description: The sunflower farms are an integrated agricultural model that encourages the farmers to practice sedentary farming instead of the traditional shifting cultivation, which is contributing to biodiversity and natural vegetation loss in the area. The farms are established on degraded community lands to restore them to ecological health and productivity. Ten rural communities in the coastal savannah zone in Gomoa East District, and four rural communities in Awutu District of the Central Region are participating.

Through the Tema Cooperative Sunflowers Producers Association (TCSPA), a farmer-based organization made up of 60 farm families, sustainable land management through the cultivation and utilization of sunflower is being promoted. The TCPSA is made up of three enterprises. The first enterprise supports the production of the sunflower feedstock under sustainable agriculture. The second enterprise operates as a private company that is processing and marketing the sunflower products. The third enterprise integrates livestock and honey production into the sunflower cultivation. They are utilizing the waste products for livestock feed and investing in on-farm honey production. Glycerin, a by-product of sunflower biodiesel is also being sold to pharmaceutical and cosmetics companies.

The farmers produce and supply 2,500 litres of biodiesel to fuel their own tractors and sell 11,000 litres annually to other consumers. About 120 litres of organic honey is produced annually and bottled for sale. Between 120 - 150 bags of organic fertilizer are produced from the residue sunflower cakes and sold to vegetable farmers.

The raw oil is used as cooking oil. Processed sunflower biodiesel is used to power farm tractors and machines. After the oil extraction, the residue (sunflower oil cake) is used to feed livestock and poultry and also as inputs for preparation of organic fertilizer; sunflower seeds are dried and processed as snacks. Apiary is also integrated into the sunflower farms for production of organic honey.

NATURAL SILK PRODUCTS

Location of product: HAMA, TARTOUS, LATTAKIA, SYRIA

Name of species and ecosystem: *Morus alba*

Global distribution: Native to China; found throughout silk-producing countries today

Production description: Part of Syrian cultural heritage, silk production has been a part of Syrian economic life since the Roman Empire. Traditional silk products such as brocade and Damask, which derives its name from Damascus city where this fine fabric was manufactured, were traded on a large scale for centuries. Today, the silk industry is in decline in Syria as competition from other materials and olive and apple trees replace mulberry trees.

A women's unit of a farming association is reviving the tradition of silk making and products. This enterprise is both economical and sustainable. Mulberry trees are environmentally friendly as they grow without chemical fertilizers and clean the air from harmful gases and particles. The women are earning additional income from their products.

However, additional capacity development is needed to support the natural silk products market. Currently, the product availability and designs are limited. Producers need training on marketing to expand the potential of these products. Direct selling to customers during exhibitions or to antiques shop are the prime markets at the moment. Smaller silk yarn balls are needed as well to reduce the amount of work and ease the knitting process.

Hand-made silk products: scarves, blouses, table clothes, and carpets.

Non-Timber Forest Products (NTFPs)

WILD SILK PRODUCTS

Location of product: AMORON'I MANIA REGION, MADAGASCAR

Producer organization: Ny Tanintsika; Union AMAFI, COBA Lovasoa, COBA Fiombonana, COBA Fandresena, COBA Miaradiae (manage the forests that are important for silk production); and Coopérative Tambatra and Coopérative Firaisankina (women weavers)

Name of species and ecosystem: *Borocera madagascariensis*; tapia tree (*Uapaca bojeri*) forest, original vegetation of the highlands of Madagascar

Global distribution: Central highlands of Madagascar

Production description: The tapia tree, the source of food for the Borocera madagascariensis silkworm, is endemic in the high plateau in the center of Madagascar. Every year the forests and their resources are threatened by fire. The development of the wild silk crafts is a source of motivation for communities to conserve the tapia tree and the silkworms. Through women's weaving cooperatives, wild silk products are made through manual techniques that do not require fuel or electrical energy. Thus, this is a low-impact, environmental product. The products are sold in local markets. The women hope to further expand their market to tourist and for export.

Wild silk crafts made from the endemic Borocera madagascariensis, silk worm. Malagasy wild silk is very strong and obtains its longevity in products. Today, the wild silk products like scarves, robes and shrouds are rare. The Malagasy people consider it a noble material and a mark of distinction used for important meeting and ceremony. Silk is a very high quality 100% natural fiber that cools you when it is hot and warms you when it is cool. These Malagsy products are dyed with plants, seeds, leaves and other natural dyes.

MULBERRY LEAVES AND SILK YARN

Location of products: KIMAHURI SUBLOCATION, KABARU LOCATION IN KIENI EAST DIVISION OF NYERI COUNTY AND CHOGORIA, MERU COUNTY, KENYA

Name of producer organizations: Kimahuri Youth United Self Help Group (KYU) and Gacera Nyanjara Self Help Group

Name of species and ecosystem: *Morus alba*; upland mountains

Global distribution: native to China, cultivated widely throughout the world in warm, temperate regions

Production description: In the rural communities around Mt. Kenya, the majority of residents support their livelihoods through agricultural and livestock. As a result of increasing population growth around the mountain, large areas of indigenous forest have been cleared for settlement and agricultural production. Inconsistent and unreliable rainfall patterns, drought and over-extraction of water from rivers and streams have resulted in crop failures, death of livestock and increased economic difficulty. As a result, many residents harvest natural resources such as timber for fuel wood and construction materials. This unsustainable exploitation of resources causes a loss of biodiversity and decreases the ability for the ecosystem to support the livelihoods of the surrounding communities.

With the support of the Community Management of Protected Areas Conservation (COMPACT) Initiative, a sub-programme of the SGP at the global level, Kimahuri Youth United Self Help Group (KYU) and Gacera Nyanjara Self Help Group developed environmental enterprises to reverse these trends. KYU was formed in 2005 and currently comprises 35 members engaged in two conservation-based enterprises: sericulture and trout aquaculture. Women comprise approximately half of the youth group, and they are the primary leaders of the sericulture enterprise. Each of the primary activities of this enterprise is directed and performed by women, including mulberry tree planting, silkworm rearing, silk harvesting, silk spinning, weaving of consumer products and marketing and sale of the products. Through the work of the 35 members indirect employment for an additional 200 members of the community was created via the supply chain for fish and silk products. Increasing sales of fish and silk products, KYU doubled its income from 2009 to 2010, reaching approximately US$20,000 in 2010. The Gacera Nyanjara Self Help Group was formed in 2004 and consists of approximately 30 members. Although the project is primarily led by men, several women participate in all facets of the enterprise, which has created direct employment and improved incomes for all of the group members and their families. The sale of silk yarn and finished products has yielded an income of approximately US$ 3,000 from 2006 to 2010.

As of November 2011, the raw products (mulberry leaves and silk yarn) and consumer products (silk scarves and rugs) are primarily sold to local and regional clientele in the Mt. Kenya and Nairobi areas of Kenya. The two enterprises will expand their capacity to produce a diverse variety of high-quality consumer products such as silk clothing, bedding and upholstery and mulberry-based nutritional supplements.

Silk is a high quality, smooth, soft and shiny fabric of durable and strong fibers. Two enterprises produce mulberry leaves, silk yarn, silk scarves, rugs and silk-based nutritional products. The mulberry leaves have a high nutritional value and can be added to food and used as livestock fodder.

Non-Timber Forest Products (NTFPs)

GUM

Location of product: KOUSSANAR, AREA OF TAMBACOUNDA, SENEGAL

Producer organization: Village Development Committees

Name of species and ecosystem: *Sterculia setigera*; tropical forest

Global distribution: West tropical Africa

Production description: Aging gum trees, unsustainable exploitation and a lack of regeneration are all contributing to a diminishment in the gum tree population in the tropical forests of Koussanar, Senegal. The forests themselves are greatly affected by extensive farming, livestock straying, abusive logging, erosion, fire and drought. To reverse this trend, as well as the poverty that perpetuates it, the Village Development Committees were set up by the Rural Council to implement participatory management of the gum trees for sustainability and economic viability. The committees are preserving the species with interventions reforestation, fire buffers and monitoring that enriched the forest with Sterculia setigera and protect the overall biodiversity of the forest ecosystem.

The rural community where the project is located covers an area of 3,129 km2 with a population estimated at more than 30,000 inhabitants. The population consists mostly of Mandinka, Fula and Wolof whose main economic activities are agriculture and raising livestock; logging, firewood and charcoal production and gum extraction are also economic activities.

Sustainable management of gum and promotion of it economically makes sense. Environmentally, gum promotes alternative energy; fights against forest fires by providing alternative livelihood activities from slash-and-burn agriculture; rehabilitates degraded lands (as gum tree seedlings grow well in fallow lands); and organizes the community to work together to manage the forests. Economically, income from gum benefits the poorest (women and youth) in the community. On average, they earn US$280,000 annually. Currently, 60,000 tons of gum at the price of US$ 1.75 per kilogram is collected each year. There is demand for more supply from the market.

Gum extracted from the Sterculia setigera tree. Gum is multi-purpose with significant nutritional and medicinal value. It is a highly sought after locally in Senegal for couscous dishes, animal fodder from the seeds, and traditional medicine. Its other primary use is as an emulsifier for cosmetics and pharmaceuticals.

INDIGENOUS TREES (FOR HANDICRAFTS)

Location of product: ST. LUCIA, KWAZULU NATAL PROVINCE, SOUTH AFRICA

Producer organization: Manukelana Nursery

Name of species and ecosystem: Various indigenous species such as *Acacia caffra*, *Acacia karoo*, *Acacia xanthophloea*, *Acokanthera oppositifolia*, *Antidesma venosum*, *Ficus natalensis*, *Berchemia zeyheri*, *Brachylaena discolor*, *Sclerocarya birrea*, and *Bridelia micrantha*; Isimanagliso Wetland Park, a World Heritage Site and adjacent environments such as Maputaland, an area rich in biodiversity

Global distribution: indigenous to South Africa

Production description: Manukelana lies within a major southern African center of plant endemism, the Maputaland center, and borders the Isimanagaliso Wetland Park, South Africa's first World Heritage Site. This site is home to over 2,000 species of plant, more than 32 of which are listed as South African Red Data Series, a collection of rare and threatened species.

The Manukelana nursery is comprised of community members from the surrounding settlement areas. A large component of the population is unemployed and relies on natural resources for subsistence. The nursery creates an opportunity for community members to receive training and employment in an environmentally important service. The knowledge gained from working at the Manukelana nursery contributed to a project with a government partnership to green low-income housing settlements in Mtubatuba, which is 30 km from the tourist town of St. Lucia, through the planting of indigenous plant species. The nursery also established an organization that trains school kids on eco-agriculture and vegetable gardening.

A number of indigenous trees grown in the nursery are on the endangered list and are of significant importance in South Africa and elsewhere. The local craftsmen also use some of the plants producing handicrafts that are sold to tourists.

Over 60 different indigenous tree species, some endangered, and a stock of over 3000 plants all cultivated from seed at the Manukelana nursery. The nursery is an educational and tourism center for schools and visiting communities. Indigenous plants and other herbal plants are sold on site.

Timber

INDIGENOUS TREE SPECIES SEEDLINGS

Location of Product: OBONG ITAM/IKOT USO AKPAN, ITU L.G.A. AKWA IBOM, NIGERIA

Name of production organization: Biodiversity Preservation Centre (BPC)

Name of species and ecosystem: *Brachystegia eurycoma, Treculia africana, Nauclea diderrichii, Tetrapleura tetrapera, leucaena leucocephal, Xylopia aethiopica, Tectona grandis*; Tropical Rainforest

Global distribution: West Africa

Production description: The continuous use of land by the rural dwellers for agricultural production, unsustainable exploitation and other development activities such as construction lead to habitat degradation and loss of biodiversity. The purpose of Biodiversity Preservation Centre is to restore the critically endangered tree species through propagation and planting of indigenous, multi-purpose tree species.

Though the current primary concern is the conservation of these plants and restoration of their habitats, SGP Nigeria is exploring ways and opportunities to harness their market potentials through awareness creation, collaborations and community capacity building.

Tetrapleura teraptera is an important seed used as spice in preparing native soups with medicinal value.

Treculia africana and Leucanea leucocephala are part of the stable food diet in Nigeria.

Nauclea diderrichi is a commercial timber species.

Brachystegia eurycoma seeds are used for oil and as soup thickener.

Xylopia aethiopica seeds are used as a spice and a traditional medicine.

Tectona grandis is a timber product considered very valuable, because of its ability to withstand weather. It even prevents any metal used in it from rusting.

DAMASCUS ROSE

Location of product: MARAH, SYRIA

Producer organization: Association for Damascus Rose Farmers

Name of species and ecosystem: *Rosa damascene*; cultivated gardens and orchards

Global distribution: Bulgaria, France, Italy, Turkey, Iran, Morocco, USA and India.

Production description: Rosa damascene, or Damascus Rose, is a hybrid of Rosa gallica with either Rosa phoenicia or Rosa moschata (Huxley 1992), which was bred in Asia Minor and distributed throughout Syria, the Near East and the Middle East. Rosa damascena is one of the oldest cultivated rose species, dating back thousands of years.

The majority of household farmers in Marah grow Damascus Rose in addition to growing other crops like grapes and almond trees. According to the local community, Marah is one of the oldest villages that specialize in the growth of Damascus Rose and manufacturing its products. Continuous drought, however, is affecting the growth of Damascus Rose in Marah. It is important to increase the areas where Damascus Rose is planted to ensure the species continues in this historical growing region. Some interventions are being implemented such as water harvesting techniques and drip irrigation systems that use water efficiently. Revival of Damascus Rose production throughout Syria can also be addressed through awareness raising the awareness of its cultural significance through publishing articles and research dissemination and multi-media.

In 2009, the total population in Marah was estimated at 5,000 inhabitants living in approximately 700 households. A recent surveyed revealed that 270 households currently grow Damascus Rose. With a high unemployment rate (40%) in Marah and the growing demand for rose products, there is considerable room to grow the Damascus Rose production in Marah. The community established an Association for Damascus Rose Farmers to further develop Damascus Rose production, processing techniques and marketing opportunities.

Descendent of wild roses, Damascus Rose is used to make a variety of products. In Syria, these are rose water, rose oil, rose jam, tea made with dried rose petals, various sweets, and soaps. Rose products produced in Marah are of a superior quality because the roses are rain-fed, which results in a stronger and more concentrated scent. The roses are pink to light red and relatively small flowers that grow in groups.

Rose oil is one of the most expensive essential oils, and used in perfumes, food flavoring and liqueurs. Damascus rose oil is also therapeutic, soothing the mind from tension and stress.

Rose water is used for medicinal, culinary and celebratory purposes. As the gentlest of all astringents, rose water is often used as toner for fair and dry skin or as an anti-ageing product.

Rose petals, or rose hips, are used in jams, jellies, marmalades, soup, herbal teas, and wine.

Rose fruits (achenes) are crushed to produce oil (called rose hip seed) that is used in skin products.

Sayikope and Tsetsekopy Organic Group

Organic composting for soil fertility and improved livelihoods

The Sayikope and Tsetsekope Organic Group is a member of the Environmental Protection Association of Ghana. Sayikope and Tsetsekope are communities within the Adidome district, traditionally made up of farmers producing vegetables and food crops along the Volta River. Over the years, however, this activity declined considerably due to the formation of the Volta Lake as a result of the Akosombo and Kpong dams. The economic base of the area was eroded with many of the economically active population migrating to the upper part of the lake. Additionally, the creation of the dam adversely affected the ecology of the area in several ways:

- The annual flooding of the Volta river banks stopped and prevented the deposition of silt to improve soil fertility on a regular basis;
- Siltation of the lower part of the Volta dam increased and this encourage the growth of river weeds; and
- The increasing presence of the river weeds limited the breeding and growth of oyster and gradually destroyed the oyster fishing business, which was a major traditional industry in the areas.

The loss of biodiversity in the lower part of the Volta Lake and the collapse of its associated micro and small enterprises promoted the University of Ghana's Volta Basin Research team in 1990 to conduct studies into the causes of the problem and alternative livelihood for the local people. Among other findings, the research found out that the biodiversity of the lake could be enhanced through fish farming and that the river weeds were potent for the production of organic fertilizer to ameliorate the soil fertility problem for the farmers.

The Adidome Farm Institute was equipped to train and assist the communities within the lower Volta basin to embark on aquaculture whilst producing organic compost

in farming. The availability of organic fertilizer enhanced the production of organic vegetables and bananas, for local consumption and export to Europe.

The Sayikope and Tsetsekop organic group, made up of 65 members was formed about ten years ago when smaller farmer groups from Sayikope, Tsetsekope and Adidome came together to be trained the Institute. The group then got certified by the Adidome Farm Institute to produce organic fertilizer and later re-organized into a commercial entity producing organic compost for sale to the commercial farmers along the Volta Lake. The group has three teams. The first team harvest and processes the river weeds to produce organic fertilizer. The second team uses the organic fertilizer to produce banana and vegetables and sell to other to farmers. The third team and transforms the area where the weed was harvested into fish pens to raise tilapia for sale.

With technical backstopping for the Adidome Farm Institute and the Drama Network, a local non-governmental organisation, the group and stepped up its production technology to meet international standards. The Drama Network introduced more organic active ingredients in the processing of the weed to boost the mineral composition up to acceptable limits. The Sayikope and Tsetsekope Organic group produces about 125,000 kg of compost every quarter and the compost is bagged into various sizes ranging from 5 kg to 50kg to meet the market demand. These bags are then sold to farmers and vegetable producers in Accra, Akuse and Adidome.

PERSONAL CARE AND HEALTH

Medicinal Plants

Seven endangered wild plants known for their traditional medicinal and economic importance in the local area were selected for a conservation project. Some of these plants are:

Urgina Maritima (common names include sea squill, red squill, sea onion) is a wild medicinal plant native to coastal Mediterranean areas. It is cultivated in the northern coast of the Egyptian desert and Sinai Peninsula. A perennial herb, it is used in modern medicine to heal neurological pain, skin problems, deep wounds and eye afflictions. The herb is also used in conventional medicine to treat asthma, bronchitis and heart disorders.

Bryonia cretica, found in western Eurasia, North Africa and South Asia, is a perennial plant used to treat dropsy, rheumatism and sciatica. Nowadays, it is primarily used in homeopathy to treat whooping cough, pleurisy, bronchitis, rheumatic pain and chilblains of the hands and feet.

Teucrium polium a native to the Mediterranean and Middle Eastern region used to treat a variety of ailments. It is used as an anti-hypertensive, anti-bacterial, carminative, anti-nociceptive, anti-inflammatory, anti-diarrhea, anti-diabetes and anti-convulsant remedy.

Capparis spinosa is a perennial species found in the Mediterranean region. The caper bush is known for its edible buds and fruit which can be pickled. In traditional medicine an herbal tea is made of the caper root and young shoots to treat rheumatism. Pedanius Dioscoride, the Greek physician and botanist, provides instructions on the use of sprouts, roots, leaves and seeds in the treatment of strangury and inflammation.

Senna alexandrina mill is a shrub native to upper Egypt and parts of the Sudan but is now also grown in India and Somalia. Historically, Senna alexandrina was used as a laxative in the form of senna pods or as a tea made from the leaves. Modern medicine has used extracts since at least the 1950s as a laxative.

ENDEMIC MEDICINAL HERBS OF EGYPTIAN DRY LANDS

Name of product: ENDEMIC MEDICINAL HERBS OF EGYPTIAN DRY LANDS

Location of product: NORTH-WEST EGYPT

Producer organization: Arab Association for Development and Environmental Protection

Name of species and ecosystem: *Urgina Maritima, Bryonia Cretica, Teucrium polium, Capparis Spinosa*, Senna Alexandrina Mill; dry lands

Production description: The conservation project was conducted on the north-west coast of Egypt once an area rich in vegetation. Changes in the natural environment led to the endangerment of these localspecies. The project aimed to ensure the sustainable use of these plants through a cultivation and breeding program.

Seed and seedling collections were conducted. Sites for cultivation were identified and appropriate breeding methods were implemented. For three species over 80% of the collected seeds/seedlings have been successfully cultivated and bred.

A team of 200 young people from the local community were trained in seed collection, planting and site maintenance to support the project. A number of seminars and workshops were conducted to raise awareness within the local community on the importance of the conservation of these natural resources and maintaining biodiversity in the area.

WILD, MEDICINAL PLANTS

Location of product: ZAKHEIRA, NEW VALLEY GOVERNORATE, EGYPT

Name of producer organization: The Community Development Association in Zakheira, New Valley Governorate

Name of species and ecosystem: *Achillea aegyptiaca*, Reehan, *Glycyrrhiza glabra*, Malvaceae family, *Foeniculum vulgare*, *Lawsonia inermis*

Production description: The Community Development Association in Zakheira, Egypt set out to preserve wild plants with medicinal, economic, and environmental importance in New Valley Governorate. They established an experimental farm for the cultivation of wild and medicinal plants, which grew the use of medicinal plants in the area. With the help of the National Center for Research in Cairo, technical support was provided to farmers on the proper methods of cultivation, collection, drying and preserving medicinal plants. As a result, new job opportunities were created, especially for young people, and farmers' incomes improved. Efforts were also made to educate the public about wild plants and their importance to biodiversity.

Several species of economically and medicinally important plants grown in the New Valley of Egypt. The plants include:

Egyptian Yarrow (Achillea aegyptiaca), which is used for intestinal, liver and spleen health; the roots are effective in treating malaria.

Licorce (Glycyrrhiza glabra), which strengthens the immune system, and is an anti-viral and anti-histamine.

Reehan, which is used in the treatment of colds, headaches, dizziness and to marinate fish and meats.

Hibiscus (Malvaceae family), which can lowers blood pressure, strengthen the heart and used in drinks.

Fennel (Foeniculum vulgare), used in cooking, treatment of constipation and to repel fleas.

Henna (Lawsonia inermis), a natural pigment used for hair dying and medicinal uses such as anti-fungal, headache remedy and cleansing wounds.

Medicinals

Made from 100% pure organic chamomile, this herbal tea has long been desired, with its fresh flavor and relaxing effect. One of the most widely used herbs in the world today, Chamomile was first discovered by the Egyptians who dedicated it to their gods for its many useful properties.

Chamomile is an herb from a flowering plant of the daisy family. The active ingredient in chamomile is an essential oil known as bisabolol, which has a number of anti-irritant, anti-inflammatory, and anti-microbial properties. Chamomile can be used to treat a number of everyday such ailments such as insomnia and other sleep disorders, panic attacks, menstrual cramps, stomach flu, and ulcers.

Thyme tea is made with 100% pure organic thyme. It is a naturally caffeine-free herbal tea.One of the most widely used herbs in the world today, thyme was first used for its aid and relief to common colds and bronchitis. Thyme tea can be used as a mouthwash or to treat a sore throat or infected gums, ease rheumatic pain, headaches, treat anemia, bronchial ailments, intestinal problems, and in treating coughs related to colds and flu.

ORGANIC CHAMOMILE AND THYME TEA

Location of product: BSEIRA VILLAGE, TAFILEH GOVERNORATE, JORDAN

Name of producer organization: The Fatima Al Zahraa Women's Society

Name of species and ecosystem: Chamomile (*Asteraceae* family) and Thyme (**genus Thymus**); Arid and Semi-Arid Mediterranean Mountain Ecosystem

Global distribution: Thyme grows all over the world and varieties can be found from Greenland to Asia, with a strong presence in the Mediterranean area; Chamomile similarly is found throughout the world, especially in temperate climates.

Production description: The local women of Bseria (in an initiative of the Fatima Al Zahraa Women's Society) organically grow chamomile and thyme and process it from plant to tea cup. Producing these plants helps the local community and rural women by providing a new source of income. They are also enhancing the products' packaging and quality to increase their marketability in new marketing channels such as at the Dana Nature Reserve where local community products are sold at the "Wild Jordan" shop.

ORGANIC SAGE AND THYME TEA

Sage tea traditionally used for inflammations of the mouth, throat and tonsils, as its volatile oils soothe the mucous membranes. The infusion made strong, without lemons and sugar, can also be used as a lotion for ulcers, and to heal skin abrasions. Other health benefits believed to be derived from sage tea or dried sage include as a tonic for the stomach and nervous system, colds and sore throats, pains in the joints and lethargy.

Thyme tea can be used as a mouthwash or to treat a sore throat or infected gums, ease rheumatic pain, headaches, anemia, bronchial ailments, intestinal problems, for coughs related to colds and flu.

Location of product: ZARQA GOVERNORATE, JORDAN

Name of producer organization: The Soldiers' Families Welfare Society

Name of species and ecosystem: Sage (*genus Salvia*) and Thyme (*genus Thymus*); Arid and Semi-Arid Mediterranean mountain ecosystem

Global distribution: Sage is found in three distinct regions: Central and South America (approx. 500 species); Central Asia and Mediterranean (250 species); Eastern Asia (90 species); Thyme grows all over the world and varieties can be found from Greenland to Asia, with a strong presence in the Mediterranean area.

Production description: The Soldier's Families Welfare Society was established in 1971 as a social development organization that works to improve the status of women in disadvantaged areas. They use awareness campaigns, training opportunities, and job creation as the primary means for economic development. In 1982, the Society implemented training and income generation programs for women in co-operation with the Pathfinder organization. In November of 2005, they started planting herbs and making tea with the support of the Small Grants Programme.

Through the sage and thyme tea project, the society currently employs more than 150 women on a regular basis, with more than 3000 job opportunities on a seasonal basis. The components of this project include a large processing unit that provides high quality dried and processed herbs and cereals to the local market. They produce sage and thyme tea bags in the order of 3,000 boxes a month (1 box contains 25 tea bags); 860 boxes of dried thyme a month (1 box contains 0.5 kg); and approximately 120 boxes of dried sage a month (1 box contains 100 g).

Medicinals

"SECRET GRAND-MERE" MEDICINAL AND HERBAL TEAS

Location of product: CHEMIN GRENIER, MAURITIUS

Producer organization: Association Pour L'Education Des Enfants Defavorisés (APEDED)

Name of species and ecosystem: Chamomile, Yappannah, Bomme du perrou, Plantain, Basilic, Lemon Grass, Aloe Vera, Thyme, Ginger, Sage, Othosiffon, Neem, Herbena, Muriers, Aubepine, Curcuma, Oeillet D'inde, romarin, Garlic and 13 varieties of local medicinal plants

Global distribution: Local varieties are endemics and native to Mauritius; global distribution for the exotic plants.

Production description: Knowledge about the healing properties and uses of medicinal plants was obtained from elders who are well-versed in herbal medicine. The result is the first ever brand of medicinal and herbal teas produced by and marketed by local women entrepreneurs. Secret Grand-Mere is prepared by 20 women with the support of Association Pour L'Education Des Enfants Defavorisés (APEDED). APEDED provides free pre-primary education to the women's children, who otherwise would not be able to afford to attend school. The teas are sold in supermarkets and fairs and the income is shared amongst the women.

Thirteen different medicinal and herbal tea varieties produced by women under the brand 'Secret Grand-Mere'. This project conserves and promotes the sustainable use and knowledge of medicinal plants. Some examples of the most widely used medicinal plants are: Yapannah for colics, Basil for indigestion, Green Zafran for pains and wounds, Bom du Perou for bronchitis, ginger for cough, Manglier for diabetes, Citronella for influenza, Thyme, Persil, Celery, Aloe Vera and Noni to cure different illnesses.

Bath and Personal Care Products

AROMATIC AND MEDICINAL PLANTS

Dried plants, floral water and essential oils naturally and equitably produced to promote the medicinal virtues and traditional knowledge of these endemic plants. Rose floral water, tones and refreshes, soothes and hydrates the skin. Its softening properties are perfectly suit for dry skin and are ideal for wrinkle prevention. White wormwood floral water is a medication for diabetics (to decrease blood sugar levels), or as an antipyretic (applied to the forehead to lower fever). Pennyroyal essential oils are to help digestion and to ease intestinal colic and coughs. Thyme essential oils are anti-infective, anti-microbial, anti-fungal and anti-viral. It has thinning and expectorant properties, and helps ease headaches and migraines. Dried wild sage helps tighten skin tissue, heal wounds and prevent inflammation.

Location of product: DOUAR AIT OUFELLAH, AGUELMAME SIDI ALI, KHÉNIFRA PROVINCE, MOROCCO

Name of producer organization: The Al Kair Association

Name of species and ecosystem: Wild mint (*Ziziphora hispanica*), pennyroyal (*mentha pulegium*), thyme (*thymus ciliatus*), hawthorn (*crataegus monogyna*), rose (*rosa damascena*), pellitory (*anacyclus pyrethrum*), wild sage (*salvia lavandulifolia*), white wormwood (*artemisia herba-alba*). Site of biological and ecological interest (SIBE-Site d'Intérêt Biologique et Ecologique) of Aguelmame Sidi Ali (Morocco).

Global distribution: Aguelmame Sidi Ali lake region

Production description: Aromatic and medicinal plants (AMPs) from Aguelmame Sidi Ali are the main source of income for local communities. For a long time, their exploitation was unsustainable. The harvesting, led by women, was unorganized, and the AMPs were sold to intermediaries for very low prices. Now, the population of Aguelmame Sidi Ali is organized to ensure sustainability and profitability of AMPs. With women developing more sustainable harvesting techniques, it is hoped that less time will be spent in the fields. This will help the women's families overall and provide greater opportunities for their children to attend school. Economic constraints and livelihood practices prevent children from going to school in high numbers in this area. Thus, with greater harvesting efficiency and profitability, women and children will have more choices.

The Al Kair association, made up of 35 women, developed a line of products made from plants such as thyme, mint, white wormwood, and sage. Production requires increased capacity in terms of the conservation management of natural resources, and favors the preservation of the local ecosystem. The sale of these products in local markets and agricultural fairs generates about US$14,000/year. This income significantly improves women's and children's living conditions, as they now have access to healthcare and education.

Medicinals

ESSENTIAL OILS OF RAVINTSARA

Location of product: AMBOHIBARY, LAKATO, AMPASIMPOTSY, AMBATOVOLA AND BEFORONA COMMUNITIES, DISTRICT MORAMANGA IN THE REGION ALAOTRA-MANGORO, MADAGASCAR

Name of producer organization: Fédération Miaradia

Name of species and ecosystem: *Cinnamomum camphora*; primary rain forest

Global distribution: Native to Madagascar, found along the Eastern and Central parts of the country; found in the newly protected area Ankeniheny –Zahamena Biological Corridor

Production description: Ravintsara oil is extracted from the plant through steam distillation of the leaves. With the establishment of the Ankeniheny –Zahamena Biological Corridor communities are now involved in the management of the resources in and around the new protected area. The reforestation of ravintsara in the abandoned and degraded areas increases the forest area and the carbon sequestration. Planting ravintsara and selling the essential oils, or even only the leaves, motivates the rural communities in the conservation of the rain forest. It is a source of income for the community-based organization, Fédération Miaradia which is a federation of 20 community-based organizations, for the management and governance of the primary forests in their charge. The essential oils are sold by the enterprise Hanitr'i Gasikara.

One-hundred percent pure and natural ravintsara oil, the "camphor of Madagascar", a native plant of Madagascar's threatened primary rain forest. Ravintsara oil has many medicinal uses including as a neurotonic (gives energy), an antiviral and germicide, to support immune system and cardiac health, and clear the respiratory system.

PURGA OIL

Location of product: RIBEIRA DOS BODES, SANTO ANTÃO ISLAND, CAPE VERDE

Producer Organization: Atelier Mar - Women´s Group of Ribeira dos Bodes, Santo Antão

Name of species and ecosystem: *Jatropha curcas L.;* grows in sub-tropical conditions, can withstand severe drought periods, and low soil fertility. It has the capacity to help land recover from erosion problems. Since it cannot be used as a food crop or for forage, it plays an important role in protecting land and crops from cattle destruction.

Global distribution: *Jatropha curcas* is originally from Central America, but can be found and it is cultivated in the Caribbean, Cape Verde, Guinea-Bissau and other countries in Africa and Asia.

Production description: Purgueira is traditionally grown in Santo Antão Island, a rural poor and agro-silvo-pastoral community facing extreme drought conditions. Water accessibility and sustainable livelihoods are issues of major concern in Santo Antão Island. The group of women engaged in purga oil production is part of the Ribeira dos Bodes Community Development Association, a community-based organized formed in 2001 with 52 members, 33 men and 19 women.

The traditional process to make purga oil is done entirely by women. It entails gathering and cracking jatropha seeds, which are then boiled in water, using fire wood/fossil fuel. During the boiling process the oil is collected with a wooden spoon and boiled again a second time to remove still existent water.

The new system, which is promoted by the SGP Cape Verde project, uses an innovative seed grinder. This advanced small machine has the ability to grind the seeds, while extracting the oil content from them, which is faster than the traditional way. This practical way to produce oil is environmental friendly, because there is no firewood collection, no CO2 released, and seeds residue are used as fertilizers. The traditional system produces 73g of oil/hour, whereas the new enhanced grinder system gets 183g/hour. The new manufacturing process enables women to spend less time collecting firewood, while producing enhanced oil quality and quantity, which in turn will give them access to more income, and promote environmental conservation.

During the past few years, the value of the oil and its properties has been widely promoted and reinvigorated. Its multipurpose commercial and conservation significance is critical in combating desertification. It is seen as vital to maintaining island cultural traditions, as well as a way to promote agro-biodiversity.

Purga oil made from Jatropha curcas, or Purgueira as it's called in Cape Verde, seeds. The oil contains B1 Vitamins and is used to treat rare skin and scalp diseases, minor ear aches, abdominal cramps, and arthritis pain. The oil is also used as raw material for organic soap production that is used to remove unwanted skin spots.

Medicinals

LOCAL MEDICINAL PLANTS

Location of product: ILOBU, OSUN STATE, NIGERIA

Name of producer organization: Bread of Life Development Foundation

Name of species and ecosystem: *Acalypha wilkesiana; Alstonia congensis; Acanthospermum hispidum; Amaranthus viridis; Basella alba; Corchorus olitorius; Azadirachta indica* (local name:dongoyaro); Caladium bicolor vent; *Acanthospermum hispidum; Corchorus olitorius*; Tropical Ecosystems

Global distribution: Lowland forests of South West Nigeria

Production description: Indigenous communities cultivate these plants in the wild within community forests and also in backyard gardens. They have used medicinal plants for various purposes for a long time, but today they are fast disappearing. Medicinal plant cultivation is being abandoned due to rural out migration and the clearing of forests for housing, road and industrial development.

The purpose of this project included reactivating indigenous knowledge of the plants and creating awareness of their immense medicinal, herbal, aesthetic and ecological value. Two conservation sites have been established, and information on the products is being published by an SGP Nigeria grantee into a small book to create awareness beyond the local community. The Federal Forestry Research Institute earmarked the sites for scientific studies of these and other plants where students may go for practical research.

All the plants are of medicinal and herbal importance, and are used both locally and across the country to treat fever, diarrhea, abscess, asthma, boils, burns, ulcers, convulsions, purgatives. Some of them are also used for aesthetics and are ornamental in nature, while others are used to control of soil erosion.

NATURUB

Name of product: NATURUB

Location of product: ISECHENO VILLAGE, VIRHEMBE SUB-LOCATION, SHIBUYE LOCATION OF SHINYALU DIVISION, KAKAMEGA COUNTY, KENYA

Name of producer organization: Muliru Farmers Conservation Group

Name of species and ecosystem: *Ocimum kilmanscharicum*; Kakamega Forest Ecosystem

Global distribution: Nairobi (capital city of Kenya) in major supermarket retail chains; and parts of Western province

Production description: Ocimum kilmanscharicum is found in the only surviving tropical rainforest in Kenya, the Kakamega forest. The forest provides a unique shelter for a remarkable diversity of animals, plants, birds and insects. It is also an important source of water and raw materials for community livelihoods. However, due to population and economic pressure, the exploitation of the forest for products has led to extensive destruction of the forest and its biodiversity.

Local community members were assisted by the International Center for Insect Physiology and Ecology to domesticate and cultivate Ocimum kilmanscharicum as an economic crop. Currently, over 360 households cultivate the plant on small holder farms adjacent to Kakamega forest. The project provides alternative income to households and contributes to the conservation of forest biodiversity by decreasing dependency on forest products by 59% of the households.

The Muliru Farmers Conservation Group is a rural community group that is located adjacent to Kakamega forest. The group was formed in 1997 by 30 local community members. Its main objective is to contribute to the conservation of Kakamega forest through promotion of alternative income-generating activities and agro-forestry among the local community. The group established an Ocimum kilimandscharicum processing facility near the Kakamega forest in 2005. The facility is processes Ocimum kilimandscharicum plant material into essential oil for manufacture of Naturub balm and ointment. Members of the community harvest the plant from their farms by cutting its stems at the base and plucking the leaves. The dried leaves are processed using a hydro-distallation equipment to produce essential oil. Traditionally, the leaves of the plant are boiled in water to generate an aroma, and the patient is made to inhale the vapour.

Naturub is developed from purified extracts of Ocimum kilmanscharicum, a wild indigenous plant from the Kakamega tropical forest. Based on the traditional knowledge and practices, Naturub is registered as a medicine, used for alleviating flu, cold chest congestion, muscular aches and pains, and insect bites. Naturub is sold in 4 different sizes.[8]

[8] http://www.mulirufcg.org/naturub-products.html

Medicinals

MEDICINAL PLANT PRODUCTS

Location of product: M'BATTO, COTE D'IVOIRE

Name of producer organization: Initiatives Group for the Development of Medicine (GIDMA)

Name of species and ecosystem: *Nuaclea latifolia, Ocimum graticimum*, and *Cacia podocarpa*

Production description: The rich heritage of medicinal plants from Côte d'Ivoire is not only greatly threatened by the over-harvesting, bush fires, development of cash crops, but also by abuse by herbalists. More than a hundred species primarily in the treatment of common ailments are disappearing. This project was to provide practical solutions for the renewal of these economically and ecologically important plants. Several activities were implemented including establishing botanical gardens, activities with women farmers, a 12-acre community forest reserve, management and protection of the medicinal plants such as nuaclea latifolia, and Ocimum graticimum, and training 20 people in the art of plant reproduction and sustainable harvesting of rare medicinal plants. Two small enterprises were also established, a medicinal plant pharmacy, and a seed bank.

A variety of natural medicinal products some from endangered and rare plant species.

VETIVER BATH AND PERSONAL CARE PRODUCTS

Location of product: ISLANDS OF MAURITIUS, MAURITIUS

Producer organization: Entreprendre au Féminin – Océan Indien

Name of species and ecosystem: *Vetiveria arguta* and *Vetiveria zizanoides*; Adaptable to many ecosystems: semi-arid, coastal and mountain and forest ecosystems

Global distribution: Vetiveria arguta is endemic to Mauritius; found on Round Island, Gunner's Quoin and a few mainland sites (Lion Mountain, Chat et la Souris, Corps de Garde); reintroduced to Ile aux Aigrettes. On Rodrigues Island it is rare (e.g., Grande Montagne). Vetiveria zizanoides can be found in other island such as Madagascar and Seychelles.

Production Description: Vetiver roots and leaves are used for extraction of essential oil and essences. The essence is collected when the plants are steam distilled. It is used to make floral water, after-shaves and insect repellent. Vetiver is known for its fragrance and medicinal value since ancient times and the essential oil distilled from the roots of vetiver is one of the most complex mixtures of alcohols and hydrocarbons. The slow evaporation rate of vetiver oil coupled with its pleasant aroma makes it a perfect perfume. The roots are also used to make ventilating screens/curtains which when moistened develops a wonderful perfume. Essential oil is also used to prepare perfumed soaps and candles.

This is the first artisanal production of essential oils from vetiver in Mauritius. Women entrepreneurs are engaged in cultivation of the plant. They use basic distillation techniques which are currently being refined. The project is unique in that it maximizes the multiple uses of the vetiver plant and provides a source of sustainable income for different groups of women entrepreneurs. The Agricultural Research Extension Unit of the Ministry of Agro-Industry provides technical support.

Entreprendre au Féminin – Océan Indien is an association whose members are women entrepreneurs of micro-enterprises set up for the promotion of women entrepreneurship of the Indian Ocean nations. The economic activities of its 60 members span four broad industry sectors, namely agriculture, handicraft, manufacturing and service.

Production is currently small as the women are refining the product and seeking additional land for exotic and native vertiver cultivation.

Essential oils, essences, after-shave, perfumed soap, candles, natural, fragrant blinds and insect repellant made from vertiver varieties. Vetiveria arguta is a rare endemic herbaceous grass of Mauritius. Vetiveria zizanoides is an exotic, mainly used for the project as Vetiveria arguta is very rare and difficult to obtain.

Bath and Personal Care Products

SHEA BUTTER PRODUCTS

Location of product: SIBY, MALI

Producer organization: Association Conseil pour le Dévelopment (ACOD)

Name of species and ecosystem: Butyrospernum parki or Vitellaria Paradoxa), dry savannah

Global distribution: Western and Central African countries, with one variety (nilotica) occurring in Eastern Africa.

Production description: Shea butter is hand-made by women in the municipality of Siby, Mali. A project set up by Association Conseil pour le Dévelopment (ACOD), the Centre for International Studies and Cooperation and SGP Mali has two aims: 1)- protection, sustenance, and management of the shea park (Parc à karité), and 2)- support for women producers of shea butter. The project is supporting the commercialization of this product to increase the women's income earned from production.

In July 2006, a cooperative, already counting 500 members, was created to strengthen the level of women's organization through practical support of questions pertaining to production and commercialization.

Women handle more than 95% of the shea butter production process. Hand-made butter maintains all of its natural properties, which is not the case for factory-made fragmented shea butter. ACOD's shea butter is 100% natural, manually churned and does not contain any additives.

Shea butter soap, cream, hair treatments and pure shea butter hand-made by women's cooperative. Several varieties of shea butter soap are available including: shea butter and coconut soap; shea butter and glycerin soap; shea butter and carrot soap; shea butter and green clay soap; shea butter and cucumber soap; and shea butter and neem soap. Shea butter cream is infused with floral scents. Hair cream is offered in two sizes (125 g and 250 g), and three sizes of pure shea butter are available (1 kg, 250 g, and 125 g).

The shea tree is a traditional African food plant. It is claimed to improve nutrition, boost food, foster rural development and support sustainable landcare. The shea fruit consists of a thin, tart, nutritious pulp that surrounds a relatively large, oil-rich seed from which shea butter is extracted. Shea butter has a distinctive odor and may have a granular texture, but melting the butter in the palm of one's hand makes it soft and liquid. It contains a number of fatty acids (oleic, linoleic, stearic, arachidic and palmitic fatty acids).

Shea butter has softening, nourishing and cell renewal properties for skin and hair. It can be used as an antiseptic since it contains natural peroxide, and helps prevent wrinkles due to its content of allantoids. Shea butter is also a natural SPF15+ sunscreen. Shea butter also contains liposoluble vitamins A, D, E and K.

MORULA OIL AND SOAP

Location of product: LERALA, BOTSWANA

Name of producer organization: Kgetsi Ya Tsie Tswapong Hills Women's Resources Enterprise Community Trust (Kgetsi ya Tsie)

Name of species and ecosystem: Sclerocarya birrea; semi-arid ecosystem

Global distribution: Indigenous to miombo woodlands of Southern Africa and the Sudano-Sahelian range of West Africa

Production description: As a multi-use species, morula is very important in agro-forestry and as a livelihood source for rural communities, particularly women. Morula products contribute to improvement of livelihoods, poverty reduction, generation of income, employment creation and economic empowerment for rural women. The products contribute to development and diversification strategies to enhance biodiversity and ecosystem resilience. Linking the indigenous knowledge base of natural resources to the national, regional and international markets has created an incentive for sustainable use and conservation of biodiversity.

The morula tree is found throughout Botswana and is used differently by each tribe. For many women, collection of morula fruits is a common daily habit. With the increased commercialization of morula products, its conservation in its natural habitat, as well as cultivation in farming systems, has grown. Grafted morula plants are now available to be incorporated in agro-forestry farming system. As a result, farmers can access fruits more easily.

Morula oil is highly prized cosmetic skin oil, cold pressed from kernels as pure and natural oil. The nuts are sun dried to reduce exposure to excessive heat that could otherwise reduce the shelf life of the oil. The oil is produced by a group of rural women through the use of an oil pressing machine. The product is packaged on site by the women.

Kgetsi ya Tsie is a rural women's trust with a membership of at least 1500 women, operating in 27 Tswapong Hills villages. The production of morula oil is a community enterprise run by women that desire to bring together their entrepreneurial abilities to further their economic and social status.

Morula fruits are seasonal, and during the harvesting season, women stock piles the nuts for use for the entire year. Through the bulk storage, the women are able to supply kernels for cold pressing throughout the year.

Kgetsi ya Tsie require expertise in packaging, further value added products and marketing the product. With such support the women will reap more benefits from the initiative.

Morula is a multi-use nut. The oil is used in cosmetics and soaps as a base; the pulp is used to produce juice, wine, jam and sweets; the nuts can be eaten raw or salted as a snack. The morula bark is used for medicinal purposes, while the trunk of the tree is good for craft and household utensils production. The hard seed coat/core is used as fuel. In addition, the tree is kept for shade, and the fruits are also eaten fresh without any processing.

Morula oil is excellent for moisturizing, skin rehydration and reduces skin redness. Morula soap is a pure natural product made from a mixture of morula and coconut oil. It is a facial soap with similar qualities as the morula oil.

Bath and Personal Care Products

ORGANIC JATROPHA SOAP

Location of product: RIBEIRA DOS BODES, SANTO ANTÃO ISLAND, CAPE VERDE

Name of producer Organization: Atelier Mar - Women´s Group of Ribeira dos Bodes, Santo Antão

Name of species and ecosystem: Jatropha curcas L.; grows in sub-tropical conditions, can withstand severe drought periods, and low soil fertility. It has the capacity to help land recover from erosion problems. Since it cannot be used as a food crop or for forage, it plays an important role in protecting land and crops from cattle destruction.

Global distribution: Jatropha curcas is originally from Central America, but can be found and it is cultivated in the Caribbean, Cape Verde, Guinea-Bissau and other countries in Africa and Asia.

Production description: Purgueira is traditionally grown in Santo Antão Island, a rural poor and agro-silvo-pastoral community facing extreme drought conditions. Water accessibility and sustainable livelihoods are issues of major concern in Santo Antão Island. The group of women engaged in jatropha soap production are part of the Ribeira dos Bodes Community Development Association, a community-based organized formed in 2001 with 52 members (33 men and 19 women).

The production of organic jatropha soap starts by the gathering and burning of jatropha seeds, banana leaves, and its branches. The ashes are collected and placed in a basket with small holes, and water is added. The liquid that flows out of the basket is collected in a bowl. The process is repeated until a certain degree of concentration is obtained. The concentrate is heated for several hours until it access liquid evaporates.

While still cooking, jatropha oil is added to the obtained mixture, and stirred with a wooden spoon. This process is known in the local language as Colocar o Pau, which means “add the wooden stick.” After being stirred to a certain point, the formed soap is removed from the boiling container. The soap is then hand molded with a cloth and wrapped in banana leaves.

Traditionally the organic soap is used to for day-to-day body cleansing activities and for treatment of rare skin and scalp diseases. Jatropha soap is widely promoted by the community women as a way to keep alive their traditions and to obtain additional income while helping the environment. Although jatropha seeds have a high oil content (fatty oils), in Cape Verde the use is not intended as of yet for biodiesel production; rather in is mainly used to make jatropha oil and organic soap for traditional medicinal purposes.


الجعده
Teucrium polium

Tema Cooperative Sunflowers Producers' Association

Rehabilitating land for sustainable fuel, food and cooperation

In 2005, ten farmer-based organizations (FBOs) made up of 10 members each were supported under the Agricultural Services Sub–Sector Investment Program to produce sunflowers. This support covered capacity building in sunflower production and a 50 percent rebate on seeds. Out of this process the farmers created the Tema Cooperative Sunflowers Producers' Association.

The Association is a multi-purpose association for the rehabilitation of degraded community lands through cultivating and processing of sunflowers into oil and biodiesel; using the biodiesel to power farm tractors, food processing machines and domestic lanterns; using the cake from the sunflower oil to feed livestock and poultry and to fertilize the degraded lands. The initiative also integrates apiculture (beekeeping) into sunflower farming for the production of honey.

In July 2008, the TCSA received funding from the Global Environment Facility's Small Grants Programme to support their work in rehabilitating degraded land. The project assisted the farmers to acquire oil processing machines and bio-digesters for the production of biodiesel. The Chemical Engineering Department of the Kwame Nkrumah University of Science and Technology provides the farmers with research on the production of biodiesel and quality control. The University of Ghana Crop Science Department provides expertise on the cultivation of sunflowers and the Council for Scientific and Industrial Research provides research and development support to the entire project.

In response to climate change mitigation measures in Ghana, the Association developed a five year business plan to meet 30 percent of the biodiesel needs of the Volta River Authority and to supply 20 percent of the sunflower oil needs for the fish canning companies in Tema. In addition, the Association stepped up production of biodiesel to meet their members consumption needs, as well as households that use sunflower oil for domestic consumption

HANDICRAFTS

AFRICAN BLACKWOOD CARVINGS

Name of species and ecosystem: *Syngonanthus nitens*; Cerrado biome

Product location: Jalapão region, Tocantins state, Brazil

Global distribution: Capim dourado is found only in the Cerrado biome of Brazil.

Production description: Capim dourado grows in the humid grasslands of the Cerrado biome. These grasslands are part of Brazil's Permanent Preservation Areas because of their role in maintaining a healthy watershed and as home to a global biodiversity hotspot of endemic flora and fauna. This delicate biome is under threat from land conversion for agriculture, especially along river ways where the soil is incredibly fertile. The sustainable management and harvesting of capim dourado for unique handicrafts helps to prevent the conversion of the Cerrado from its natural state.

In the Jalapão region of Tocantins state, this plant is the most important source of income for local communities. While many communities make capim dourado handicrafts today, it all started with a community of slave descendants, Mumbuca. A woman from Mumbuca learned how to use capim dourado for crafts from nearby indigenous people. Today, in cooperation with scientists, local communities have contributed in formulating a specific legislation that establishes the period and management procedures for the capim dourado harvest. This law guarantees that the harvest of the flowers stems takes place only after the maturation of the of the seeds, and that they are left in the field in order to help maintain the species' population.

Carvings made from African Blackwood, or mpingo as it's called locally. The Makonde tribe of make a range of carvings, as well as earnings, necklace and buttons from blackwood chips. The carvings reflect African culture and life.

The African Blackwood is a highly sought after small tree that reaches 4–15 meters; yet, takes more than sixty years to mature. Its use for timber, instruments, furniture, and specialty items is leading to its disappearance at an alarming rate.

DETARIUM NECKLACES

Location of product: MUNICIPALITY OF OUÉLLESSEBOUGOU, MALI

Name of producer organization: Groupement des femmes transformatrices de detarium and Pole des Actions Intégration des Droits Humains en Afrique, (PACINDHA)

Name of species and ecosystem: detarium microcarpum; Tropical forests

Global distribution: West African forests

Production description: Two community-based organizations organized a project geared towards the development of detarium microcarpum. The primary project goals are: 1) raise collective awareness within the populations and local authorities of Ouelessebougou to protect and restore the degraded detarium microcarpum plants, and 2) develop the different detarium microcarpum products by rationing their exploitation and commercialization by women's groups specifically set up for this purpose.

The species plays an important role in international commerce because thousands of tons of its fruits are widely commercialized and exported every year, namely to Senegal.Women are the primary benefactors of these actions. To work on the detarium fruits, 10 women's cooperatives, made up of 500 women, have been organized in 10 villages within the Ouelessebougou commune. These cooperatives are community and socially-oriented.

In annual production capacity today, the women from one of the 10 villages (Dafara) are able to produce 350,000 CFA francs (approx US$665) worth of detarium per year. The women from the 9 other villages have smaller productions, but they still produce between 150,000 F- 200,000 F worth of products each year.

Detarium microcarpum is a multi-use tree. The fruit plays an important role in feeding the rural population of Sahel and in the fight against poverty. It is a vital ingredient in baby cereal, and its grains produce oil. Detarium microcarpum is used medicinally for muscle soreness, snake bites, diarrhea, vomiting, and stomach aches. Detarium "pearls" are hand-made necklaces made by women from the detarium seeds.

BAMBOO CRAFTS

Location of product: MUTASA DISTRICT IN HONDE VALLEY, MUTASA NORTH, ZIMBABWE

Name of producer organization: Sustainable Tourism Enterprise Promotion, STEP TRUST

Name of species and ecosystem: Oxytenanthera abyssinica;

Global distribution: southern Africa in Limpopo Province and eastern and northern Zimbabwe

Production description: The area under the agro-ecological region III of the Honde Valley is unique in that it is endowed with rich soils along the perennial river beds. Traditionally, the Honde Valley community has used the bamboo instruments for farming, e.g., to process and harvest crops. Over the years the Manyika men in the valley perfected the art of bamboo craft making and passed on the skills over generations. They are best known for the production of mats, baskets and winnowers.

There are 4 communities, at least 120 households, involved in producing the crafts, with women especially benefiting from this enterprise. The crafts being produced at the moment retain great cultural and ritual significance. With many women having the limited opportunities in the formal sector, the sheer number of women able to work in craft production is a huge benefit. Beyond financial independence, craft work has helped women to become more confident, and they have an elevated status within their families and communities. Craft projects attract participants to workshops and meetings where other development-oriented topics can be tackled such as natural resources conservation. Bamboo craft production is also helping to keep traditions alive by working with local materials, techniques and designs.

Slit reeds have to be woven while still soft, flexible and fresh, otherwise once they dry they become brittle and easily break during weaving. Weavers dip their raw materials in water regularly to keep the weaving strips soft and flexible. Crafts can be attacked by weevils if not properly processed and stored. Many weavers dip their wares in salt, varnish, or spread cow dung to extend the shelf live.

Local and regional markets for the bamboo products include South Africa, Botswana and Zambia. Exhibiting at Tourism Expo's has established contacts in Austria, Germany, China and Japan.

Since the communities are now benefiting economically from the bamboo, they have realized the need to conserve the resources so that it does not deplete. Seventy-five percent of the households are involved in crafting, and they earn most of their income from crafts. They are now producing small value-added products which uses less bamboo resource during weaving. Also the weavers are championing the idea of using sustainable harvesting techniques and propagating the bamboo species. Weavers and villagers in the operating wards are engaged in awareness campaigns to conserve the resource. Fire awareness and rehabilitation programs are also under way. So far the weavers are propagating the bamboo plant in their fields and around their homes.

Bamboo crafts (masengere is the common name used by locals in Honde valley of Zimbabwe, elsewhere in Zimbabwe it is known as the Bindura Bamboo). Products include lamp shades, paper bins, small baskets, hats and picnic baskets among many other crafts. Products are in different sizes, shapes and designs. The baskets are neatly woven and subtly decorated with decorative stitching and colors.

DOM PALM LEAF HANDICRAFTS

Location of product: ERITREA

Name of producer organization: National Union of Eritrean Women (NUEW)

Name of species and ecosystem: Hyphaene thebaica; semi-desert scrub and savannah woodland

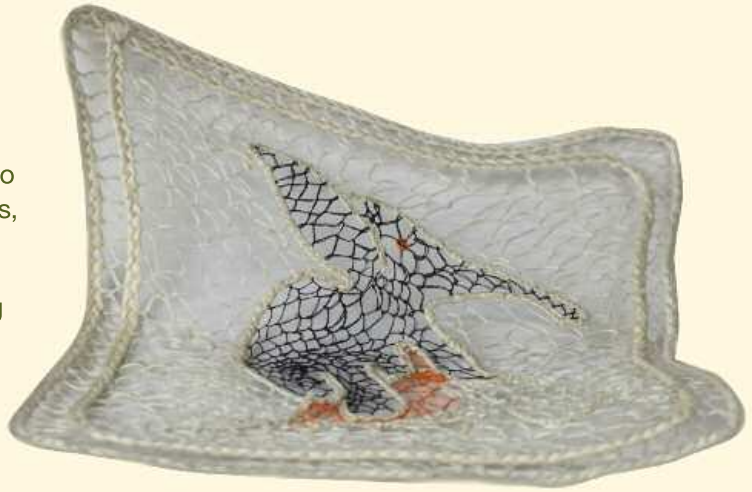
Global Distribution: Widespread in the Sahel, grows from Mauritania to Egypt, from Senegal to Central Africa and east to Tanzania

Production description: The production of dom palm leaf crafts is best described through the story of an Eritrean refugee, Ms. Meryem Ibrahim. Meryem, a mother of 5 children, left Eritrea to Sudan in 1988 when she lost her husband during the war with Ethiopia for independence. Meryem returned to the western lowland of Eritrea in 1995 where dom palm grows in abundance. Meryem's family depended first on the support from extended family members and food aid from the World Food Programme. As this kind of support did not sustain longer, Meryem began making mats and baskets of Dom palm tree leaves and sell them in the local market. For her, this was the only job she could do, having learned it earlier from her parents.

To support Meryem further and live a sustained livelihood, the National Union of Eritrean Women (NUEW), an SGP grantee, assisted her in registering for the Rural Credit Programme. Meryem got a loan so as to improve and modernize her mat, hat and basket making activities. With the money she got from the credit scheme, she bought beads and embroidery threads of different colors for making colorful and attractive mats, baskets and hats. Today, she sells her products in national and regional occasions, weddings, festivals, and religious festivities. She returned the money she borrowed from the credit scheme as per the time frame given to her. Meryem is now self supporting and her younger children are regularly going to school. Inspired by Meryem's success, a number of women headed households in the region have followed suit in Dom palm craft making.

Handicrafts made from locally available dom palm leaf. Crafts are adorned with beads and embroidery threads of different colors for making colorful and attractive mats, baskets and hats. Dom palm trees have many uses including for food, fodder, fuel, timber, dye, alcohol, and medicine.

SISAL BASKETS AND PLACE MATS



Location of product: CAPE VERDE

Producer organization: Associação de Apoio à Auto-promoção da Mulher no Desenvolvimento - Delegação Região Norte - Sisal Transformation Units of Chã das Caldeiras, Paúl e Rabo Curto

Name of species and ecosystem: *Agave sisalana*; high altitude and humid areas, including protected zones in Cape Verde

Global distribution: possible origin Yucatan of Mexico; today found throughout the tropics such as Brazil, the Caribbean, Tanzania, Kenya, and in Cape Verde

Production description: The fibers (the usable part of the plant) represent only 4-5% of the gross mass of the sisal leaf. The leaves may be cut every 6 months or so, depending on availability, and the entire life cycle of the plant is 6 to 7 years. (There have been attempts to improve the economic productivity of sisal by using the waste material for biogas. In Santo Antão, this has not been promoted as of yet, nor has it been tested as forage, which is known to be valuable.)

The initial process to make sisal products is almost the same for all products. It only differs on techniques used when fibers are ready for each desired product, i.e. baskets, hats, or place mats.

In some countries the fiber is extracted by crushing the sisal leaves and beaten by a rotating wheel. In Cape Verde this method is not used. After the leaves are collected, the fiber is extracted using a traditional bamboo stick cut on one of the ends in a V shape, while the leaves are placed and sliced through until the fiber is extracted.

The fiber is then dried, brushed and prepared in different braiding sizes, depending on the purpose the fiber is being prepared for. The braiding is done to strengthen the fiber and to make sure the final product is durable. Some communities in Santo Antão dye some fibers to make products more attractive.

Unlike in other countries like Brazil, Cape Verde is not a major producer of sisal products and fiber. It is used rather to make local products for the local market. This project is situated in Cova, Paúl, and Torre Natural Park, 3,217 ha of land extending in all three Santo Antão Municipalities, Ribeira Grande, Paúl, and Porto Novo. The area incorporates a significant representative area of humid mountain ecosystem and encompasses a great and significant number of endemic species. It contains large areas of unexplored land and vegetation, which is threatened by fuel wood collection and exotic species invasion. There are at least 10 small communities, with an estimated population of less than 2,000 people, living within the park, including the men and women involved in this initiative. They are poor and vulnerable to environmental conditions, and subsist on small plots of land and pastoral activities.

Sisals is a drought resistant plant with a variety of uses due to it is elasticity, durability, and resistance to deterioration in saltwater. Traditionally used for ropes, twines, baskets, and shoes, these days its uses include handicrafts, hats, place mats, etc, as way to increase income and promote sustainable livelihoods, mainly within women in the Cova, Paúl and Torre Natural Park. Alternative materials such as polypropylene are growing in use and leading to the decline in sisal use.

FSC-CERTIFIED "GOOD WOOD" CARVINGS FROM NEEM

Location of product: MOMBASA, MALINDI AND WITHIN THE KENYAN COAST, KENYA

Name of producer organization: Akamba Handicrafts Cooperative (Mombasa, Kenya), Malindi Handicrafts Cooperative (Malindi, Kenya), and Bombolulu Handicrafts (Mombasa, Kenya)

Name of species and ecosystem: Azadiracta indica; Eastern African Coastal Forests Ecoregion, one of the Global 200 priority ecosystems

Global distribution: Currently certified neem wood carvings are only produced in Kenya; neem wood is a common material for carvings and other wood uses in the Indian Ocean basin (East Africa and South Asia)

Production description: The activities of the carving industry pose a significant threat to species and habitats in the Kenyan coastal forests. The carving industry relies on a small range of indigenous hardwoods, particularly Mpingo or African black wood (Dalbergia melanoxylon) and Muhugu or Mahogany (Brachylaena huillensis). The species are slow growing with poor regeneration and also provide a habitat for birds, reptiles and a wide range of mammals in hollows. The trend also threatens the wood supply for the 80 year-old carving industry and the livelihoods of approximately half a million people. Wood carving is a significant foreign exchange earner for Kenya with export earnings estimated at US $20 million per year, 2-3% of the nation's total export earnings.

Over the last 15 years, conservation organizations, government and other stakeholders developed two complementary strategies to stem the degradation of indigenous forests resulting from wood-carving, namely:

1) Substitution of indigenous trees with farm grown species that are fast growing species known as "Good Woods" to ease utilization pressure on natural forests. In this case, the farm grown species identified is neem which grows plentifully on farms in the region.

2) Environmental certification of "Good Woods" to increase its appeal in a growing conservation conscious market especially abroad. In this case, the certifying body selected was the Forest Stewardship Council (FSC),[9] which tracks the farm tree management and carving processes to certify environmental and social sustainability.

The handicrafts industry is dominated by the Akamba community, which pioneered the craft in Kenya over 50 year ago. This applies to the two major co-operatives named above. There is a strong family involvement in the business and kinship groups. However, Kenyans from other communities have now joined the sector in significant numbers.

Bombolulu Handicrafts organizes and markets products of people with physical disabilities in Mombasa. It produces crafts of high quality and beauty including certified woodcarvings.

The carvings are made in a unique style developed over the last 50 years in Kenya, portraying aspects of its world famous wildlife and indigenous people. An important element of the brand is its contribution to conservation of Kenya's indigenous forests. The enterprises are also able to make carvings to any design or specification.

[9] http://www.fsc.org/

BAMBOO HANDICRAFTS

Location of product: RWANDA

Producer organization: Cultural Conservation Act (CCA)

Name of species and ecosystem: Bambusa vulgaris

Global distribution: Widely grown throughout the tropics and subtropics

Production description: The vegetative propagation of bamboo has been promoted in Rwanda as an alternative to the collection of rhizomes in parks. The collection of rhizomes used to be a major threat to the Virunga National Park (VNP) in the north (best known for the Mountain Gorilla, Gorilla beringei beringei) and the Nyungwe National Park (NNP) a mountainous rainforest in the south. The two parks are indeed the main home to bamboo resources comprising of the naturally grown Sinarundinaria alpine, and the later introduced Oxythenanthera sp and Bambusa vulgaris.

Bamboo seedlings, mostly from the fast growing B.vulgaris variety, are now sustainably produced by communities and planted in farmers' fields countrywide, as well as at the outskirts of protected areas. This reduces the reliance on bamboo from parks and therefore reduces conflicts between the parks and their neighboring communities.

The CCA is among other non-governmental organizations (NGOs) that have encouraged communities to plant bamboo in their fields. CCA created a youth cooperative of 60 members that currently makes bamboo handicrafts for tourists.

The bamboo used by CCA has an additional conservation value: a part of it is sustainably harvested from the bamboo belt that the NGO planted all around the Buhanga eco-park, a sacred forest in the North of Rwanda. This forest of 31 hectares has an astonishing beauty with vegetation dominated by the spectacular dragon trees (Ficus toningi), liana (Urera cameronensis), Dracaena steudneri and Pennisetum purpureum. It is also home to many small mammals, different birds, and colorful butterflies, a must see for tourists in Rwanda.

Bambusa vulgaris, also known as common bamboo or golden bamboo, is the most widely grown bamboo throughout the tropics and subtropics. Its easy propagation explains its seemingly wild occurrence. B. vulgaris has a wide variety of uses. The Cultural Conservation Act (CCA) in Rwanda is using the bamboo to make handicrafts comprising of jewelry such as earrings and necklaces and decorative items.

BASKET WORK

Location of product: LALANGINA DISTRICT, HAUTE MATSIATRA REGION, MADAGASCAR

Producer organization: Union of craftswomen (AMM)

Name of species and ecosystem: Pandanus kimlangii, Pandanus acanthostylus, Pandanus longissimepeodonculatus, Pandanus mangokensis, Scirpus; found in humid tropical forest and wetlands around the forest

Global distribution: Forests of Ialamrina and Andranomiditra, which is part of the new protected area corridor Fandriana–Vondrozo, Centre of Madagascar

Production description: With the capacity building support of the non-governmental organization (NGO) Terzzio Mondo women crafters are improving traditional basket making for a higher quality product. To support their profit making the women join the union of craftswomen (AMM) to increase the production and gain support for the capacity building. AMM has set up marketing channels to enable its members to increase their revenues. Samples of products have been tested in Italy through fair trade markets and met with customer satisfaction.

One of the goals of the project are to reduce the existing exploitation of natural resources such as Pandanus palm and Scirpus grasses by sustainably managing it for basket work. They are partnering with community-based organizations (CBOs) in charge of forest management in order to access to the natural material as part of a social and environmental contract. The women have also tested the cultivation of Pandanus palm and Scirpus grasses outside the protected forests in order to increase the production and preserve their sustainability.

All natural, biodegradable baskets used and integrated in the everyday lives of Malagasy people. Using these baskets cuts down on the daily use and consumption of plastic bags.

OFOIN (ANTIARIS TOXICARIA) BARK PRODUCTS

Location of product: DIMBOKRO, CÔTE D'IVOIRE

Name of producer organization: EHOUKABE Foundation

Name of species and ecosystem: Antiaris toxicaria; savannah ecosystem

Production description: The production of Antiaris toxicaria bark ("ofoin" in local language) is an old practice that existed for generations in the Baoulé communities of Côte d'Ivoire. It is also a typical expertise of the Baoulé people.

The "ofoin" is made from Antiaris toxicaria bark. Traditionally, once a tree is identified for the "ofoin" craft the villagers cut down the tree to retrieve the bark. As the first layer of bark is very thick and hard, the villagers remove it until they can access the softer bark. A smooth and rounded wooden paddle is used to beat the bark until it is very soft. The final processing step is to dry the soft layer of bark in the sun for two to three days. The dried layer is called the "ofoin" in local language. It can be used for making clothing, shoes and bags. There are also some artists who use it for painting. It is also dyed in different colors depending on the need or desire for use.

Through this project funded by the Global Environmental Facility's Small Grants Programme (SGP), people learned to produce the "ofoin" without destroying the forest by a simple technique that removes the bark without cutting down trees. The project also aims to create 14 hectares of a Antiaris Toxicaria plantation in seven villages to replace the trees that have been destroyed. Through this project, SGP's support preserved this vital economic species and the heritage of the forest.

The non-governmental organization EHOUKABE, which initiated this project, is now promoting the using of "Ofoin" as an export product and sharing their expertise in production and processing to do so.

The Antiaris toxicaria bark ("ofoin" in local language) is a traditional fabric typical to "Baoulé" people living in the centre of Côte d'Ivoire. This product is made from tree bark. Formerly, it was used to make clothing, but nowadays thanks to the work of designers, the "ofoin" also is used to make bags, shoes, etc. Even some artists are using it for painting. The bark is a source of income for the rural population of seven local communities' Booré, Totokro, Djangokro, Ouangokro, N'Dayakro, Alougbé and Kouadiokro in central Cote d'Ivoire.

CONTACT INFORMATION

If you would like to have information about the Biodiversity Products Portal, please visit:

www.biodiversity-products.org

If you would like to have more information about one of the biodiversity products, you can also contact one of the SGP national coordinators under 'Contact us' on the SGP website:

www.sgp.undp.org

If you would like more information about SGP at the global level, please contact:

GEF Small Grants Programme
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ABOUT GEF SMALL GRANTS PROGRAMME

Funded by the Global Environment Facility (GEF) as a corporate programme, the GEF Small Grants Programme (SGP) is implemented by the United Nations Development Programme (UNDP) on behalf of the GEF, and is executed by the United Nations Office for Project Services (UNOPS). Launched in 1992, the SGP supports activities of non-governmental and community-based organizations in developing countries towards biodiversity conservation, climate change, protection of international waters, reduction of the impact of persistent organic pollutants and prevention of land degradation, while generating sustainable livelihoods.

SGP is operational in 128 countries and provides funding up to $50,000 per project for community actions. To date, SGP has channeled more than $300 million to communities through more than 15,000 projects around the world, which have resulted in direct global environmental benefits and also influenced the formulation of national and local policies on sustainable environmental and development management.

SGP The GEF Small Grants Programme

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