



Project title:	The role of cactus pear (<i>Opuntia Ficus-Indica L.</i>) in Restoration of Degraded Land and Improving Income of the Rural Poor Communities in the Semiarid Areas of Northern Ethiopia
Thematic area code:	Poverty Reduction through Productive activities (PRP)
Project type:	UNIDO registered project (UNIDO PA Fund 2011 for feasibility study; Project preparation finalized and the content has been approved by UNIDO)
Project reference ID:	XXETH11X05
Duration:	5 years
Budget:	2.5 Million €
Project location:	Tigray National Regional State, Ethiopia
Project Coordinator:	Yoseph Tewodros Delelegn

Short summary:

There is a great potential to better utilize prickly pear (*Opuntia ficus-indica L.*, locally known as "Beles"), as a source of food and fodder in the semiarid parts of Northern Ethiopia. The plant grows in the marginalized and drought affected areas of the Eastern and Southern zones of Tigray region in Northern Ethiopia. The rural communities particularly in the Eastern and Southern zones of the region are highly dependent on *Opuntia* for household consumption and livestock feed, especially during longer drought periods. As other crops are not able to thrive in the harsh environmental conditions, *Opuntia* in particular is considered as a robust and thus lifesaving crop. Its importance comes from its unique potential to tolerate long periods of drought, poor soil and high temperature. The plant is used both as staple food for domestic use and for generating additional income for the rural poor communities. The plant has diversified local and industrial importance, such as health drinks, fish feed, nutraceuticals (natural ingredients and health-promoting foods), nutritional food, baby foods, livestock fodder, and other medicinal importance. There are several untapped possibilities for development of innovative products using this plant which could be an opportunity to improve the livelihood of the rural people in the arid region.



Constraints to the development of the Opuntia for rural development:

The rural communities in the project area have major constraints to meet the National Growth and Transformation Plan (GTP). Some of the constraints are lack of knowledge and skills of local communities in processing and creation of added value agricultural products, lack of investment in processing infrastructure / technology, lack of strategic marketing linkages to traders and processing companies, lack of modern post-harvest handling technology and preservation of agricultural products which lead to high production loss.

Expected outcome:

The project will establish a processing center as a pilot plant in order to better make use of both Opuntia fruits and the pads (cladodes). Different food and feed products with longer shelf life will be trialled and marketed. Building on experience from other countries with a long tradition of processing Opuntia and from leading agricultural research institutes, the project will empower youth and women associations for collection, postharvest handling, hygienic food processing and marketing. This approach will provide poor communities with income generation activities and contributing to food security strategy. On top of that, plantation of Opuntia in the degraded dry lands can help to mitigate land degradation and thus combat the ongoing desertification in the region.

Partner institutions:

Local Partner Institutions are:

Ethiopia: Ministry of Industry, Ministry of Trade, Environmental Protection Authority, Mekelle University, Tigray Agricultural Research Institute, Tigray Bureau of Agriculture and Rural Development, Moms for Moms, Mekelle

International Partner Institutions are:

Austria: ICC (International Associations for Cereal Sciences and Technology), BOKU – Institute of Forest Ecology, UNIDO – United Nations Industrial Development Organizations

Germany: Helmholtz Centre for Environmental Research – UFZ, Department of Soil Ecology

USA: UCLA – Department of Ecology and Evolutionary Biology, Penn State College of Agriculture – Food Science, NutrAfrica, USAID – United States Agency for International Development

Kenya: Eco Mark Africa, Nairobi

Funding Organizations:

UNIDO, ADA, OFID, Cooperazione Italiana, USAID, NutrAfrica, CFC