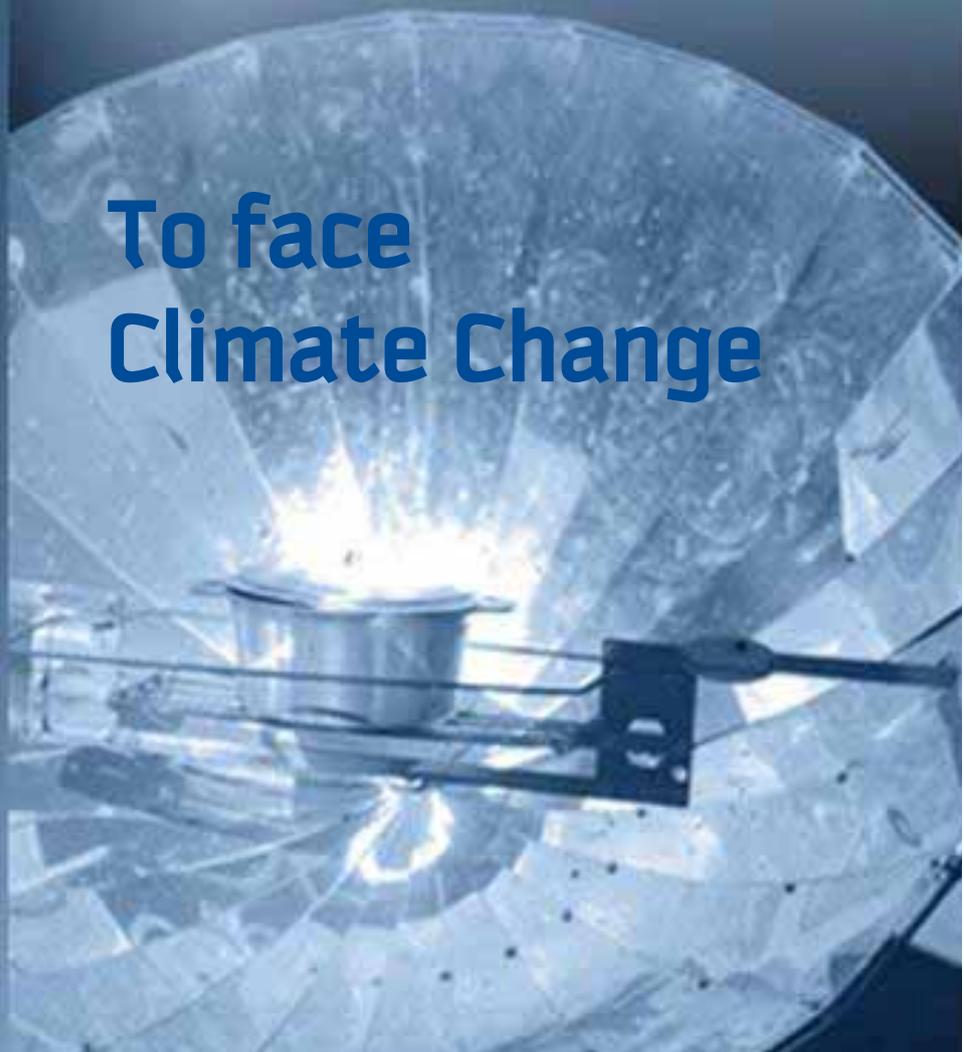




The Angovo Meva Program

To face
Climate Change



Fondation Environnementale Tany Meva

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The Angovo Meva program is a program established to promote renewable energy and/or energy efficiency for households cooking and lighting. The program aims to inculcate more responsible behaviors as regards to energy consumption as part of the effort to reduce reliance on charcoal, fuel wood, and fossil fuel, to maintain Madagascar's capacity for carbon dioxide sequestration, and to reduce carbon emissions while improving the living conditions and welfare of end users livelihood and welfare.

• The Angovo Meva Program and Climate Change

The program promotes:

- The preservation of forests: 100 Pipa stoves save 1ha of forest per year,
- The reduction of CO₂ emissions by the use of:
 - the Pipa Stove and the clean cookstove (an ethanol-fuelled stove): these devices have been tested by the Aprovecho Laboratory and have proven to be low-carbon (emission of less than 20g at the boiling test, Shell Foundation standard);
 - the Pico hydroelectric plant that is carbon-free.

• The Angovo Meva Program and Development

Clean devices relying on renewable energy sources:

- Reduce the incidence of respiratory diseases caused by smoke from firewood and charcoal, diseases that affect young children in particular (10,000 deaths per year, WHO 2006);
- Reduce users' expenses on fuel;
- Improve the services offered by the basic health centers by providing power for sterilization and cold storage of medicines and vaccines;
- Create local jobs: the operation of one hydroelectric plant generates two direct jobs and local labor is needed for the production of Pipa Stove and jatropa candles;
- Improve end users' welfare: houses remain clean and students and other family members benefit from improved lighting.

• The Angovo Meva Program and Gender

The use of clean, efficient and environment-friendly cooking devices:

- Reduces women's domestic workload: they no longer have to fetch wood and their homes (especially the kitchen) remain clean;

- Gives women more leisure time and time to engage in income-generating activities.

Tany Meva and the European Union-supported FORMGED project developed a "Guide for gender mainstreaming in the promotion of cooking devices fuelled with renewable energy " to ensure that women's specific needs and views are taken into account in the dissemination of such devices, given the crucial role they play in domestic activities.

The "Energy Fund" for the sustainable dissemination of renewable energy and energy-efficient devices is a fund dedicated to the promotion of renewable energy and takes a "revolving fund" approach. It was set up in collaboration with microfinance institutions.

• The Program in brief :

- Under the program, five devices fueled with new renewable energy are being marketed:
 - Two cooking devices: the Pipa Stove and the ethanol stove
 - Two lighting devices: the Pico hydro and the jatropha candle
- 4,000 households, 35.000 pupils among , 174 schools, two basic health centers, 1 municipal office , 7 churches are using the renewable energy devices for daily cooking and/or daily lighting.;
- Four 4 Pico hydroelectric plants are operation and a fifth one is under construction;
- A Pipa Stove production unit and a jatropha candle production plant are in place;
- An "energy fund" is operating in three regions, namely Amoron' i Mania, Vakinankaratra, and Atsimo Andrefana.
- A range of development partners have been mobilized to promote renewable energy in Madagascar: microfinance institutions, development projects and programs (World Food Program, UNDP, ...), technical partners (Rural Electrification Development Agency or ADER), international partners (the Mac Arthur Foundation)
- Outlook and Challenges: Tany Meva's goal is to scale up the dissemination and distribution of the devices, tapping into the potentialities of the carbon market

To this end, Tany Meva request any form of technical and / or financial partnership in the related areas: developing project proposals, carbon credit purchase, and support for the dissemination of devices.

- The five devices being promoted

PIPA STOVE

“For clean, efficient and environment-friendly cooking”

The biomass stove is an innovative cooking solution promoted the Tany Meva Foundation. It allows for reducing both the consumption of wood and the cooking time, and as it generates less smoke, it contributes to reducing the incidence of respiratory diseases.



Components:

- Made of clay, fire wrapped with metal
- Fitted with a smoke outlet in the form of a metallic chimney
- Fuelled with any kind of dry waste biomass: corn ear, rice bran, wood chips, wood
- Three (3) sizes: PM / MM / XXL

Efficient: Convenient, handy and easy to use and maintain, fast and optimal cooking, can serve as a heater while cooking

Hygienic: Indoors remain cleaner as less smoke (and therefore carbon dioxide) is produced with better fuel, and smoke is discharge outside.

Economical: Cooking time and firewood consumption reduced by half; 8% reduction in wood consumption, 2 to 5 times less firewood collected than when using traditional charcoal stove.

Safe: Graded 37/40 by the Aprovecho Research Laboratory Center, Oregon US.

Long-lasting: Minimum life span: five (5) years.

Targeted Users : Household, school canteens, food stalls, restaurants.

Achievements

- Sambaina Region Millennium Village, Analamanga Region: 1,100 households equipped with the stove 12 schools in the Millennium Village
- Toliara II and Ampanihy, Atsimo Andrefana Region: 420 stoves distributed to 140 schools
- Town of Toliara and Vakinankaratra: 1,000 households, restaurant managers, food stall managers
Partners: Bira Factories, WFP, UNDP, Millennium Village, ONN-PNNC Seecaline



Since 2009, the Tany Meva Fondation has been working with the World Food Program to disseminate the Pipa Stove in school canteens in the Atsimo Andrefana Region. In 2010–2011, the distribution has targeted 96 canteens in the Ampanihy and Toliara Districts, following an integrated approach: the promotion of renewable energy is embedded in practical environmental education, with a stronger focus on awareness-raising and coaching of target users.



Distribution ceremony of Pipa stoves

JATROPHA CANDLE

“For environment-friendly lighting”

The jatropa candle was developed by the National Center for Industrial and Technological Research (CNRIT) and was one of the devices who won an award during the Tosika Meva contest organized by Tany Meva in 2007.



Components: Paraffin wax, jatropa oil, natural coloring, woven cotton wick

Physical characteristics:

- Hardness: non-malleable, unbreakable
- Shape: cone
- Smoke: none
- Odor: none (smell of jatropa oil only)
- Length: 11 cm

Light intensity: Intense light and brightness compared with paraffin candles

Lifetime: 3 hours at least

Target: This item is produced and distributed by a local cooperative called "Koloharena" to nearly 200 households in Amparafaravola.

Achievements:

- A jatropa candle production unit (capacity: 250 candles per day) has been set up and is operational; local jobs have been created.
- A distribution system for the product is in operational and 26,000 candles have been sold to date.

Target users: Households

Partners: National Center for Research and Industrial Technology (CNRIT), Koloharena Cooperative



Candle display by CNRIT

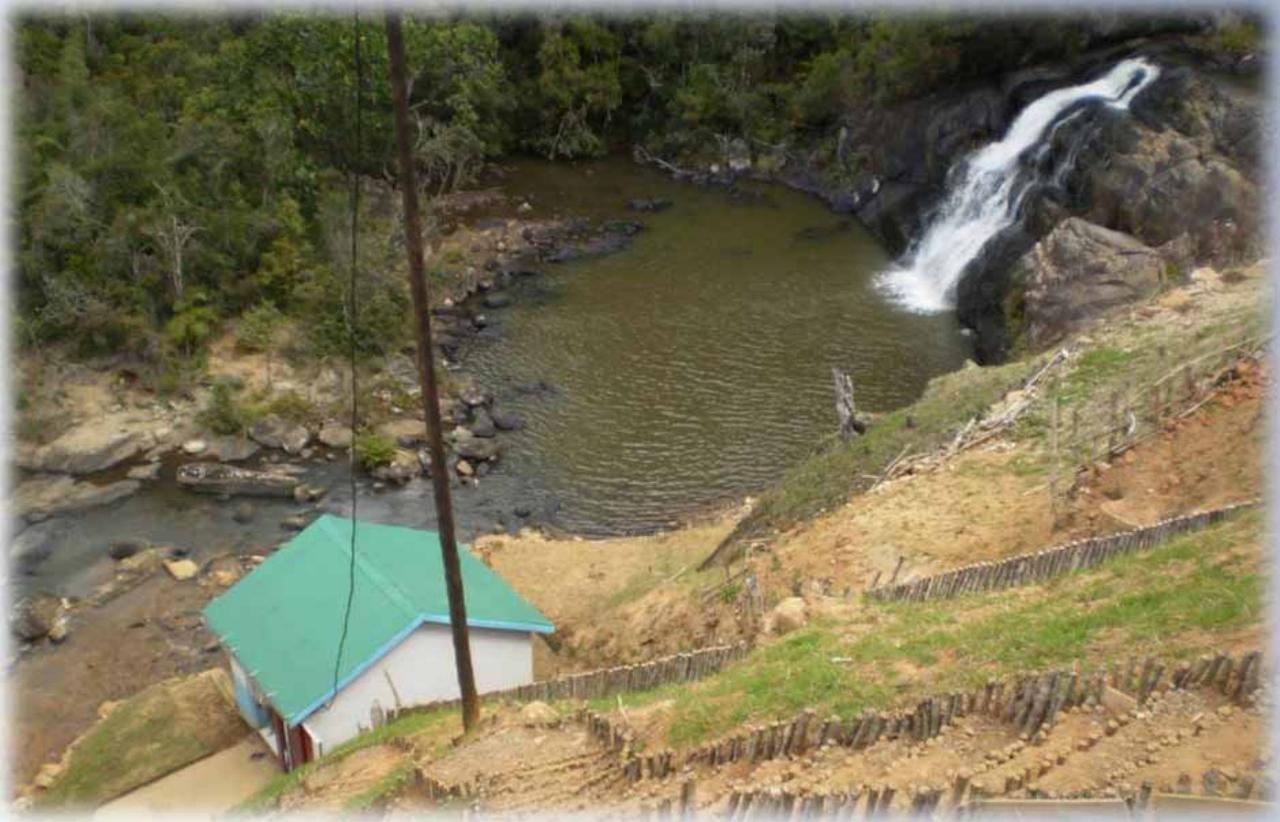


Jatropha candle production

HYDROELECTRICITY PICO

“Harnessing the power of streams for clean electricity and local development in remote areas”

The Pico hydroelectric plant is designed for rural electrification.



- 7.5 to 40 kW

Targeted users: Households, schools, health centers, etc. in remote rural areas

Achievements:

- Management of River Amboiboika's flow, rural commune of Milenaky, Toliara II, Atsimo Andrefana Region:

Installation of a 10 KW Pico hydroelectric plant and a 15kVA bioethanol thermal unit. Electrification of 160 households, one Primary Public School and one Basic Health Center

- Management of River Ambaravarana's flow, rural commune of Merimanjaka, Analamanga Region: Installation of a 40KW Pico hydroelectric plant providing power to 326 households, seven public primary schools and high schools, the municipal office, two basic health centers, and two production units.
- Management of River Andriatishazo's and River Andriantsemboka's flow, Anosibe rural commune of Trimolaharano, rural commune of Sambaina (a Millennium Village): Installation of two plants of 7.5 KW respectively: 281 households, two public primary schools use electricity for lighting and daily activities and 700 households are targeted.
- Management of River Ambohidreny's flow, Analaroa: Installation of two plants of 7.5KW respectively, providing electricity to 245 households, a municipal office, one basic health center, five schools, ten churches, 16 street lighting posts, and one gendarmerie outpost.
- Two Pico hydroelectrical plants are being installed in Anjzorobe and Ambositra

Partners: ADER Agency for Electrification Development, co-funding by the European Union.



Street lighting



Household with electricity at home

ETHANOL STOVE

“Preserving the environment and human life”

This is a stove that uses ethanol as fuel.



Device promoted: clean cook stove in aluminum with flame regulator, produced by Domestic and tested by the Aprovecho Research Center Laboratory, powered by ethanol up to 92°.

Economical: Average consumption is one liter of ethanol per day for a household with five people.

Target: Households who use charcoal stove and have children aged less than five

Achievements:

- 200 households are using the ethanol stove for daily cooking in the town of Ambositra in the Region of Amoron'i Mania and in the town of Vatomandry in the Region of Atsinanana.
- A first Ethanol Show was held in Madagascar.
- A micro-distillery has been set up in Ambositra.

Partners: GAIA, Inc. project, AJDV, SPAI



Households using the ethanol stove in Ambositra

SOLAR OVEN

“For environment-friendly cooking”

Promoting solar oven goes towards supporting the population and its environment.

There are two types of solar oven:

- The cooking box type which is made up of a well insulated case, a reflector, and a glass cover,
- The dish type which is made up of a large dish with the pot placed in the middle where sunrays are directed.



Dish-type solar oven



The case-type solar oven

Features: Temperature can rise up to 150°C inside the oven.

Target: The households population in the South West and Western parts of Madagascar.

Achievements:

- In the Region of South-West, 1,193 households have acquired solar ovens.
- Awareness-raising on the use of solar ovens was conducted in the towns of Toliara, Ampanihy, and Ejeda.
- Production and dissemination of booklets and a video on the use and benefits of solar ovens,
- 115 households use solar ovens for daily cooking around the National Park of Ankarafantsika.
- Target households have engaged in reforestation activities.

Partners: ADES, Volamahasoa, Renaissance et Environnement



Dissemination and awareness-raising on the use of solar ovens in the Region of South-West



Demo on the use of a solar oven

