

Who is ADES?

1. ADES in brief

The non-profit association ADES (*Association pour le Développement de l'Énergie Solaire Suisse - Madagascar*), based in Mettmenstetten, Zurich, has been in existence since 2001. It is active exclusively in Madagascar and is recognised by the Malagasy government (accord de siège).

ADES manufactures energy-efficient cooking appliances in Madagascar and promotes the use of renewable energies. By using solar and energy-saving cookers, large quantities of wood and charcoal can be saved. This protects the climate, biodiversity and health and enables people to escape poverty.

ADES has the ZEWO seal of quality and is certified according to the Gold Standard as a climate protection project of the myclimate foundation.

1.1 Locations in Madagascar

ADES operates eight stationary production, sales and information centres in Madagascar as well as a mobile promotion centre. ADES focuses on regions where forests are most threatened or where fuel is particularly difficult to obtain and therefore expensive. The locations Toliara and Ejeda in the south were also chosen because they are the most needy and only a few aid organisations are active there. By reducing fuel costs and creating jobs, ADES offers alternatives to emigration in this region.



locations

- **Antananarivo, Antsirabe**
advice, sensitisation, training and sales, environmental education, training for resellers
- **Ejeda**
consulting, sensitisation, training and sales, environmental education, training of resellers, breeding of young plants, reforestation and consulting in the field of agroforestry.
- **Mahajanga, Morondava**
advice, sensitisation, training and sales, environmental education, training for resellers
- **Fianarantsoa**
production of clay inserts for energy-saving cookers and final assembly of energy-saving cookers, consulting, sensitization, training and sales, environmental education, training for resellers
- **Toliara/Tuléar (2 centres)**
Madagascan headquarters, production of solar cookers and sheet metal sheaths for energy-saving cookers, consulting, sensitisation, training and sales, environmental education, training for resellers, large-scale kitchen project
- the mobile sensitisation and sales centre is on the move in rural areas

1.2 ADES creates jobs and apprenticeships

In the eight stationary ADES centres, 138 Madagascan employees produce, sell and repair cooking utensils (see photos below), advise interested parties, train users and offer environmental education modules for primary and secondary schools. ADES has created 143 jobs with local suppliers and 100 people earn an income by reselling ADES cooking appliances. ADES pays fair wages and offers above-average social benefits. About half of the senior staff, most of the members of the sensitisation and environmental education teams and a large proportion of the people who sell stoves as self-employed are women. Physically demanding work is carried out exclusively by men. On average, 20 family members are supported with a wage.



clay gratings for charcoal energy-saving cookers are formed



processing of clay cores for energy-saving cookers
Photos: ADES

Employees are comprehensively trained and further qualified for the job. In addition, ADES regularly offers various internships for students and vocational school students in the fields of environmental awareness, information technology, metal and woodworking and pottery. If possible, the young professionals are offered a permanent position in one of the ADES centres after completing their training.



employees in metalworking



Don Bosco technical school trainees in the woodworking studio
Photos: ADES

In order to further increase cooker sales and to sensitise even more people to environmentally and climate-friendly behaviour and the protection of their health, ADES relies on a growing network of locally anchored independent resellers. They play an important role in the distribution of cooking appliances in areas where ADES does not have its own centres. This is why ADES trains them to become qualified and reputable business partners and representatives who create trust, build sustainable customer relationships and sensitize their target audiences to environmental issues. Regular training courses are held in all centres.



training for resellers



resale as a family project photos: ADES

In a country with an extremely high unemployment rate, resellers have the opportunity to earn an (additional) income and choose their working hours freely. They purchase the energy-saving cookers at a reduced price and offer them at the official sales price of ADES. In this way they earn an income from the margin per cooker sold. Cooperation with the centres is contractually regulated. ADES also pays a portion of the transport costs for the purchased products..

1.3 Product range: the energy-efficient cooking appliances from ADES

ADES equips Madagascar households, restaurants, schools and hospitals with cooking equipment adapted to local conditions and use.



From the back left: box cooker for private households, parabolic cooker, box cooker for schools. These appliances work exclusively with solar energy.

Front: the whole range of energy-saving cookers for wood and charcoal.

photo: ADES

2. Country

2.1 Key figures

Madagascar lies in the Indian Ocean, about 400 kilometers east of the coast of Mozambique. With 587 295 square kilometres, it is the fourth largest island in the world in terms of area and has about 25 million inhabitants, a third of whom live in urban areas. The median age of the population is 19, their life expectancy 66 years. The country has a very high population growth rate of around 3 %.

Madagascar is one of the poorest countries in the world. Its economy bears the typical features of a developing country. On the world development index of the United Nations it occupies place 158 of 188 and thus belongs to the category of countries with the least development. Over 90% of the population live below the poverty line. Most people fight for their daily survival. Madagascar has one of the highest malnutrition rates in the world. Clean water, medical care and electricity are luxuries most people can only dream of.

2.2 Political, economic and social situation

Since the 2009 coup, the country has been in an institutional, political and social crisis. The already difficult economic situation has deteriorated dramatically, and corruption is rampant at all levels.

International investments and aid funds are flowing very sparsely towards the island state. Various states and multi-lateral donors have promised Madagascar aid, but if government does not respect the rules of good governance and corruption develops rapidly, no development programmes can be defined and implemented. As a result, the situation of many families continues to deteriorate and discontent among the population grows.

The climate is marked by strong contrasts. The island is frequently hit by natural disasters such as tropical cyclones, floods and locust plagues. The amount of precipitation is the lowest for decades. In the south, there has been drought for years. Millions of people are acutely affected by hunger and are dependent on external aid; the incomes and food supplies of more than half of all Madagascans are threatened.

2.3 Dwindling forests - a threat to the environment and biodiversity



*Deforestation also leads to soil erosion and major environmental damage in the Mahajanga region. Only the green areas have not yet been cleared.
Aerial view: Insert_token, flickr cc*

Madagascar is home to a unique fauna and flora with a high proportion of endemic species. However, these are highly endangered, as less than 10% of the original forests of the former green island have been preserved, and overexploitation of the forest continues. 120,000 hectares of forest disappear every year. The consequences are devastating: erosion and desertification lead to the loss of habitats for animals and plants as well as arable land. Watercourses carry humus away and silt up, the climate changes, pests and diseases spread.

The trees fall victim to the extraction of tropical timber and construction timber as well as the need for land for the cultivation of food. But 80% of the wood felled is used for cooking. A rural household consumes four tons of firewood per year to prepare meals on an open fire. In the cities, charcoal is used for cooking. To cover the coal needs of a household, six tons of wood must be felled each year. This not only has devastating consequences for the environment and

the climate. Firewood and charcoal are expensive and place a heavy burden on the already tight household budgets.

2.4 Cooking on an open fire - an underestimated health risk

Over 95% of Madagascar's population uses solid fuels, in particular wood or charcoal for cooking. Smoke from burning wood is far more harmful to health than exhaust fumes from most other fuels. Who cooks over open fire or

on a simple stove with wood or coal (see photos below), exposes itself and its environment fine dust, carbon monoxide, nitrogen oxides, poisonous organic compounds and further health-endangering materials. Women and children in particular run the risk of contracting respiratory infections, tuberculosis or lung cancer. According to estimates of the World Health Organization, about 4.3 million people die annually worldwide from the consequences of wood smoke, more than 18,000 of them in Madagascar alone. The daily use of ADES stoves significantly reduces this risk.



Cooking over an open fire

3. Goals and activities

3.1 Goals

ADES makes a valuable contribution to the protection of forests and the climate and to improving the economic and health situation of tens of thousands of Madagascans. ADES manufactures solar and energy-saving cookers, sells them at a reduced price to the local population and sensitises them to energy-efficient cooking and environmental protection through intensive public relations work and environmental education programmes.

3.2. Environmental protection, poverty reduction and health protection through clean, energy-saving cooking

With a solar or energy-saving cooker, an average household reduces its wood or charcoal consumption by more than half and avoids three tons of CO₂ emissions per year. Its fuel costs are reduced by an amount equivalent to about a quarter of the minimum wage in Madagascar. This means that more money is available to cover the basic needs of the family, for example for a sufficient and balanced diet, medicines and school costs. In addition, women and children spend less time collecting firewood and maintaining the cooking fire and can devote themselves to other activities.

Clean, efficient and cost-effective cooking solutions considerably reduce the risk of illness and death: those who cook solarly do not produce any harmful exhaust fumes. Thanks to an efficient combustion process, energy-saving cookers significantly improve the environment and, in particular, protect the health of women and children who spend most of their time in the home and yard.

4. Figures at the end of 2018

- More than 1.2 million people have benefited from lower fuel costs, significantly better indoor air quality and a lower risk of fire accidents thanks to ADES stoves.
- To date, the 220,000 energy-efficient stoves sold have protected over 2,000 km² of Madagascan forest. Today, 4.6% of Madagascan households use ADES stoves.
- In fact, over 1.4 million tons of CO₂ have been reduced with the same amount of wood saved.
- 520 hours of wood collection are eliminated per year per household with an ADES cooker.

- The cost of the fuel is about a quarter of the average monthly salary. And this in a country where 92% of the population lives on less than USD 2 a day and about 85% has no access to electricity.
- ADES energy-saving cookers reduce the need for wood or coal by more than 50% - an extremely valuable amount for the small household budget.

5. Partnerships

ADES works in partnership with organisations working towards similar goals. For example, ADES has been a climate protection project of the Swiss foundation myclimate (www.myclimate.org) since 2008 and is certified with the Gold Standard. The energy partnership Energising Development EnDev (<http://endev.info>) is another important partner. EnDev promotes sustainable access to modern energy services in developing countries. Numerous private donors as well as foundations, cantons, municipalities, parishes, parishes and service clubs financially support the activities of ADES. ADES works closely with regional and local authorities, traditional dignitaries, schools and various grassroots groups such as women's groups, church groups and farming cooperatives to raise awareness and disseminate stoves. Also the WWF Madagascar, the Welthungerhilfe (WHH) Germany and many other Malagasy and international non-governmental organizations, which implement environmental and promotion projects, participate in the distribution of several thousand ADES stoves per year.

6. Projects 2019

- General donations contribute to our project "**sustainable investment in the production of solar and energy-saving cookers**".
- **Mobile centre:** As a current and innovative project, the sensitisation work and the sale of solar and energy-saving stoves is being expanded via a mobile promotion centre in the centre of Madagascar. Two further such mobile centres are to cover the north and south of the country in the future.
- **Development of parabolic solar cookers:** ADES intends to produce the parabolic cookers independently. Production is already well advanced but must still be brought to a semi-industrial level in order to keep costs as low as possible.
- **Tailor-made institutional cooking solutions with solar energy and improved biomass stoves:** With the help of Energising Development, ADES is testing a new energy-saving institutional cooking model in eight schools run by project partner Bel Avenir. The energy costs saved will be used, among other things, to continue the school nutrition programs taking place there. At the end of the project, it will be possible to replicate the model in 400 schools where the World Food Program also runs school nutrition programs.
- **Environmental education in public schools:** A rethinking of environmental awareness requires further measures. ADES starts with the youngest and visits them in public schools in consultation with the local authorities. In 2019, ADES will train 8,000 pupils and 800 teachers in 80 primary and secondary schools.
- **Adult education:** ADES regularly accompanies and sensitises all participants and conducts various training and further education programmes for employees, partners and resellers.
- **Afforestation:** ADES has been carrying out afforestation in Ejeda for a number of years and is now using its valuable experience to promote reforestation around Ejeda and in other regions.

March 2019

