Instituto de Desenvolvimento
Sustentável Mamirauá

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TECNOLOGIAS SOCIAIS

SOCIAL TECHNOLOGIES

WHO WE ARE

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The Mamirauá Institute for Sustainable Development

The Mamirauá Institute was founded in April 1999. It is a social organisation promoted and supervised by the Ministry of Science, Technology and Innovation, acting as one of its research units. Since its inception, it has been developing programs related to research, management and technical advice for conservation sites. Its mission is "To promote scientific research on biodiversity, management and conservation of the natural resources of the Amazon, in a participatory and sustainable manner".

Water, Energy and Sanitation

In the last 20 years, the Mamirauá Institute has been implementing social technologies aimed at increasing access to water, sanitation and electricity in isolated communities in the Amazon. The social technologies are applied in collaboration with the local population. They promote social inclusion and improve quality of life for families who have limited access to public services. These projects are developed by the Research Group for Innovation, Development and Adaptation of Sustainable Technology, the Research Group for Ribeirinho Populations, Ways of Life and Public Policies in the Western Amazon, and the Quality of Life Program.

***In the following pages**, you can learn more about some of these projects.*

WATER

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In an effort to find solutions to the challenge of supplying water for domestic use in rural communities in the Amazon, over the last 15 years, the Mamirauá Institute has developed, tested and applied systems capable of resolving these challenges, such as the following:

River water catchment system powered by photovoltaic solar energy

Photovoltaic panels are placed on the river on floating rafts, pumping water to an elevated reservoir. The water tank is connected to a sand filter for pre-treatment of the water and waste removal. After filtration, the water is distributed by gravity to the community, with a supply point in each household.

Mixed water system powered by solar energy

This system is based on the same principle as the Water Supply System, but includes a 25,000-liter cistern for capturing rainwater by means of a pump, powered by a solar module.

Home rainwater system

The home rainwater catchment system is intended to supply drinking water, using a safe means of capturing rainwater at a low cost, with easy installation and suited to local conditions.

ENERGY

Electricity is supplied to isolated communities in the Amazon through small diesel thermoelectric plants. This results in high costs of operation, maintenance and fuel distribution, and inefficient energy supply - an average of four hours per day. The Mamirauá Institute has, therefore, been developing projects aimed at addressing the lack of electricity. Learn about some of them:

Football field

The field is roughly 1000m² and a solar energy system with about eight hours of battery life powers the LED floodlights. The solar system for each lamppost uses two photovoltaic modules.

Solar Powered Ice Machine

The ice machine is powered by solar energy and is intended for food preservation in isolated communities. It is estimated that each machine has a production capacity of 30 kg of ice per day. The project was a finalist in the Google Social Impact Challenge | Brazil.

***Visit** www.mamiraua.org.br/tecnologiasocial for information about all the other projects: Ecological Stove and Oven, Solar Energy for Schools and Laboratories, Household Photovoltaic Systems, Tracker System and **Cevaciclo** (equipment developed to facilitate flour production and the preparation of pasta).*

SANITATION

The lack of proper sanitation technology exposes the Amazonian population to a number of health risks, including hepatitis and ascaris, in addition to directly impacting the environmental quality of the region. In response to this, the Mamirauá Institute is developing and testing the following projects:

Dry toilets and flush toilets adapted to flood-prone areas

The conventional flush toilet has a common seat (toilet bowl), a sink for washing hands, and a sewage treatment system consisting of two plastic septic tanks, a post-treatment planted filter and an underground cesspool. The dry toilet keeps urine separate. This toilet does not use water to transport waste. Urine and faeces are stored separately for a few months, for dewatering and sanitation. After sanitation, the resulting matter may be used as fertiliser or discarded.

Sewage treatment plant for floating homes

Each treatment plant is intended for one toilet and consists of a septic tank and an anaerobic filter, formed by bamboo rings, gravel and broken brick debris. The main characteristics of the technology are its simple construction and maintenance, and its efficiency in removing 80% of organic matter from sewage.

PARTNERS


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To implement these social technologies, the Mamirauá Institute has relied on the collaboration of several partners and sponsors. Check out the list below.

Partners

- *Google Social Impact Challenge | Brazil*
- *Financier of Studies and Projects*
- *Group for Studies and Development of Alternative Energy Sources of the Federal University of Pará*
- ***Energy and** Environment Institute at the University of São Paulo*
- *National Institute for Science and Tec. in Ren. Energy Sources and Energy Efficiency in the Amazon*
- *Institute for the Development of Alternative Energy Sources and Self Sustainability*
- *Ministry of Science, Technology and Innovation*
- *Maraã Municipal Government*
- *Uarini Municipal Government*
- *National Council for Scientific and Technological Development*
- ***Department for International De**velopment*
- *Sustainable Amazonas Foundation*
- *InSight Light*
- *Institute for Development of Renewable Energy*
- *Institute for the Environmental Protection of Amazonas*
- *Winrock International Institute*
- *Philips*
- ***Energy and De**velopment Program of the United States Int. Dev. Agency*
- *Mamirauá Civil Society*

VISIBILITY

Each of the projects developed by the Mamirauá Institute includes a visibility component, responsible for publicizing the actions aimed at sustainable conservation of natural resources. This is achieved through a series of promotional activities that focus on external communication of the projects, resulting in the strengthening of the Mamirauá brand and that of its financiers. Content production and specific tools target different media and publics. These strategies seek to maximize the communication of project goals, activities and results, not only among the projects' direct and indirect participants, but also among communications professionals and external publics interested in the area. Some of the tools include:

- *Press Office*
- *Management of Social Media*
- *Website*
- *Videos*
- *Photo Gallery*
- *Print Publications*

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