

B I O D I V E R S I T Y

C L I M A T E C H A N G E

F O R E S T S

Fire Control Project in the Amazon (Fogo Emergência Crônica) Brazil

› COLLABORATIVE
MANAGEMENT

› ENVIRONMENT
AND HEALTH

› ENVIRONMENTAL
SUSTAINABILITY



Background and rationale

By the end of the 1990s, the negative impact of several unusual climatic events in Northwest Brazil was severely affecting human livelihoods and the overall ecosystem balance. The effects of the long-lasting drought had been worsened by the world-wide phenomena of *El Niño* and *La Niña* and by the uncontrolled exploitation of large areas of the Amazon forest. The frequent fires in the forest menaced villages and dramatically undercut the resources on which populations living on the verge of sheer poverty depended. Not last, the delinquent human origin of many fires increased the risk of losing large areas of the forest to flames, even under rainy climatic circumstances. The consequences of fires on environmental quality are extremely heavy: for three or four months per year, during the land preparation season and the opening of wooded land for agriculture, air quality is worse than in heavily polluted San Paolo. At the same time, forest fires have a direct effect on local rainfall, decreasing it dramatically due to the exponential increase of condensation nuclei. The increasing instability of the Amazon ecosystem is also one of the main causes of epidemic outbursts. These are linked to forced population movements,



which help spread the vectors of severe diseases such as malaria and haemorrhage fevers. The most serious consequence is the diffusion of these vectors from the wild isolated forest areas to urban centres, where large numbers of people get exposed to them. The extreme poverty and degradation of the urban centres contribute to the population's vulnerability to the diseases. This serious ecological crisis was further worsened by the wider economic and financial crisis at the national level, including the devaluation of the national currency, the *Real*. Availability of financial resources had been dramatically curtailed for all ministries, in particular the Ministry of the Environment which was cut by 70% against its previous budget. Given these limited resources, the newly appointed Minister faced problems ranging from the Brazilian financial contribution to international programmes for the conservation of the Amazon Forest to the control of forest fires, to the aggressive exploitation by timber loggers and mineral extractors of the Amazon resources, to the chronically low capacity to counteract environmental degradation of the *Instituto Brasileiro do Meio Ambiente* (IBAMA).

Farmers showing the calendar produced by the Project on fire prevention and timing

Within this framework, the Italian Cooperation decided in 1999 to launch an emergency initiative, aimed at tackling the problem of fires in Brazilian Amazon, with a total disbursement of about 2 million euros. This intervention was to be based upon the mobilisation of the local population and civil society, as no wide-scale and centralised project could have any reasonable chance to succeed under the present administrative financial crisis. Efforts were to be undertaken to decrease overhead costs and to develop a local network of associations for implementation at the grassroots level. Execution was entrusted directly to the Emergency Response Department of the Italian Cooperation, and implementation to the latter and local organisations. Indeed, the involvement of local non governmental organisations (NGOs), in particular *Amigos da Terra*, has been instrumental for Project implementation and success. A second phase is under formulation and will be financed for further three years (2003-2005).

Goal, objectives and expected outputs

The development goal of the Project is to help minimise the damage caused by forest fires in hot spots of nine States in the Brazilian Amazon, through actions at grassroots level and in direct collaboration with local population. Such actions are to be coordinated with existing governmental programmes and other initiatives in the environmental, social and health sectors.

The specific objectives are as follows.

- ➊ Decrease the impact on mortality and morbidity of haematophagus vector-borne diseases (malaria, dengue fever and other haemorrhage illnesses) and other diseases linked to degraded environmental conditions (acute intestinal disorders).
- ➋ Strengthen the autonomous capacity of local populations, through their associations, cooperatives, entrepreneurial organisations and municipal institutions, to cope with and control fire emergencies, possibly also through the establishment of fire-brigades.
- ➌ Mitigate the effects of forest fires in the selected *Municípios*.



Furniture produced by the carpentry shops promoted by the Project

Expected outputs are as follows.

- ➊ Mortality and morbidity caused by epidemic diseases reduced (malaria, haemorrhage illnesses and acute gastro-enteritis).
- ➋ Impact of forest fires on social, economic, environmental and health conditions reduced in the selected *Municípios*.
- ➌ Local capacity to react to fire events increased.
- ➍ Awareness and reactive attitudes strengthened on fire-risks and measures to control it, even in isolated settlements.
- ➎ Pilot methodology tested by the Government also in routine activity, besides emergency events.

Main activities were focused on health assistance, food aid to people deprived of the minimal conditions for food self-sufficiency, the establishment of fire monitor groups and fire-brigades, the development of a radio network for early warning and communication, the production and diffusion of information material. An ongoing activity that was initially unforeseen is the promotion of

carpentry shops, for the production of wood furniture with discarded material from sawmills. In fact, a very high percentage of second-choice wood and sawdust was thrown into the rivers after a first processing. This by-product, however, can be pressed and used for the production of furniture and other items, which can then be sold on the local market. Indeed, the Project has purchased most of its office furniture from these small carpentry shops.

Implementation and results

The ten *Municípios* initially selected are located in Acre, Parà, Rondonia, Mato Grosso and Amazonas States. Selection was based upon the high occurrence of fires and high susceptibility to fires, linked to the degradation status of the tree cover. Initially the Project was to be implemented in nine months, but, within the initial budget limits, it has been extended. Taking into consideration the difficult economic circumstances of the Brazilian Amazon, the key to success in this Project was to bring all the stakeholders involved in the forest's use to the same table, to discuss and identify solutions to the fire problem acceptable to everyone. For example, there were different perceptions of what is a problem and what is not.

For many farmers, fire in itself is not a problem, as the local farming system is based upon the traditional practice of slash-and-burn. However, they perceive smoke as a real problem as it causes respiratory diseases, planes cannot land or take off and car circulation is also strongly reduced. Under these circumstances, efforts have been targeted to diffuse practices of safe/controlled fire use.



In particular, firebreaks and some fire-resistant species have been introduced, as well as a radio broadcast informing listeners about the right time to start fires according to meteorological conditions. Food aid has also been provided to allow the adoption of more sustainable agricultural practices.



The entry-point to the local communities was the distribution of aerosol devices to the population, to alleviate respiratory problems. At the same time, an early warning/monitoring system was set-up, based on volunteers' participation: small solar-powered radio-transistors were supplied to inform the fire-brigades, the army and Municipal Authorities about starting fires. Local environmental NGOs have been instrumental in the logistics and in keeping organisational costs within the available budget. Public meetings were organised to discuss fire problems with the whole population; medical doctors, agronomists and technicians, all provided information on the various consequences related to fires.



Following the discussions on causes, possible solutions and feasible actions, all stakeholders committed themselves to take action by signing Municipal Protocols.

These are agreements between private and public institutions in the same *Municípios*, establishing the responsibilities each institution has in the fire prevention and control process. Capacity building and awareness creation are two basic aspects of the Project: fire control, the safe use of fires for agricultural purposes, health assistance on respiratory diseases, environmental education and sensitisation, are among the main topics under this heading. Project results are excellent: an increasingly large number of *Municípios* is asking for assistance; successful presentations of the Project took place at the Brazilian Parliament and at the Brazilian Embassy in Rome; the World Bank asked to include the Project in the G7-funded Pilot Project for Tropical Forests and USAID would like to adopt the same methodology for a similar intervention in other areas of Brazil.

Group of young volunteer Fire Monitors



Lessons learned

According to the Acre Project Coordinator, the Project's success aspects are as follows.

- ➊ The Project is active in the fields of health, environmental education, alternatives to fire use in agriculture, fire control system and communication: it is **dynamic**.
- ➋ The Project involves all stakeholders directly concerned with fire who are free to participate in the debate, to formulate proposals, to identify problems and to define possible solutions: it is **democratic**.
- ➌ Rural and urban populations participate in the Project, through actions aimed at health assistance and the control of urban waste burning: it is **comprehensive**.
- ➍ In Acre State, the protocol was signed after debates took place in rural and urban communities, inside each producers' association, with the participation of Project technicians, Government technicians and officials: it is **participatory**.
- ➎ The Project starts action with basis on the local communities' requests and within the limits of local capacities: it is **local**.
- ➏ The Project collaborates with all partners and stakeholders in identifying actions and implementing them: it embraces **solidarity**.
- ➐ The Project decides actions according to local circumstances and plans of action are specific to each *Município*: it is **innovative** and **experimental**.