



## **WE'LL NEVER FIGHT HUNGER AND POVERTY THIS WAY**



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November 2009

### **PRO-NATURA INTERNATIONAL**

#### **25 YEARS OF REAL INNOVATION FOR THE DEVELOPMENT OF THE GLOBAL SOUTH COMBINING POVERTY REDUCTION, BIODIVERSITY CONSERVATION AND CLIMATE CHANGE MITIGATION**

Founded in Rio de Janeiro, in 1985 by Dr. Marcelo Carvalho de Andrade, Pro-Natura has become one of the few NGO's (Non-Governmental Organisations) from the global south to internationalise.

Since 1993, the Paris-based Pro-Natura International has engaged more than 500 qualified volunteers alongside about 250 employees to primarily work on rural development projects around the world.

The innovative approach that Pro-Natura has developed is founded on the firm belief that poverty reduction, the conservation of biodiversity and the struggle against climate change are best pursued in combination.

Pro-Natura has demonstrated in Latin America, Asia and Africa that the vicious cycle of rural poverty, unsustainable agricultural practices, deforestation and accelerating climate change can be reversed, especially when systems of democratic governance are put in place.

### **Innovation Towards Sustainable Development**

**Member of IUCN, The World Conservation Union**

**Pro-Natura International**

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**International Charity (Association Loi de 1901 JO 23.09.92 N° 39)**

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## **ENOUGH WITH HELPING HANDS, LET THEM HELP THEMSELVES**

### **Our approach: participatory rural development**

For 20 years, we have been working on participatory development projects in north-western Mato Grosso, an area covering 12 million ha of the Brazilian Amazon. Pro-Natura has developed an integrated strategy for regional biodiversity conservation and economically viable natural resource use which today includes 7 municipalities, accounting for 100,000 people. Following extensive surveying we established a Research Centre for Agroforestry and a tree nursery to encourage farmers in the region to adopt sustainable agricultural practices; created an experimental “carbon sink” to absorb atmospheric CO<sub>2</sub> by supporting local farmers to reforest 10,000 ha of degraded pastureland; established ecological-economic zoning maps and collaborated with companies on sustainable timber management.

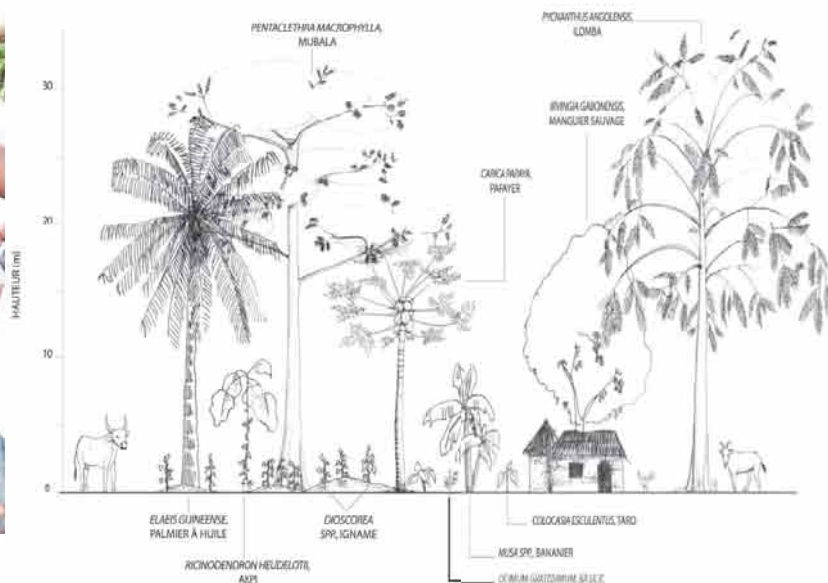
Since 1995 we have applied the lessons learnt in the Brazilian Amazon to the biodiversity-rich Mata Atlantica by creating agroforestry training centres to protect what is left (3 to 5 %) of Brazil’s coastal forest.

In the process we have shown that for sustainable development projects to be successful, local populations can and must engage directly. Our role in all our projects, be they in Africa, Asia or the Americas, is to facilitate local communities to create their own development strategies.

For instance, for 17 years we have been working in the Niger Delta of Nigeria, one of the planet’s richest sources of oil as well as an area of extreme poverty and recurring conflicts. There we have set up a number of *Community Development Foundations*, whose committees are locally elected. The first such initiative was launched with the Akassa community (40,000 people), then extended to Opobo-Nkoro and Eastern Obolo (100,000 people) before spreading to a number of other regions.

*Pro-Natura Nigeria* has also created the Institute for Sustainable Development (ISD) in order to promote “best practices” in participatory development and social justice. The ISD is primarily concerned with eradicating poverty by holding workshops for various stakeholders: community members, women’s groups, politicians, private sector representatives, NGOs and students ([www.pronatura-nigeria.org](http://www.pronatura-nigeria.org)).

A further example of our work is found near the Ivory Coast’s Taï National Park, a UNESCO World Heritage site and the principal vestige of primary forest in West Africa. Over the past seven years, *Pro-Natura Ghana*, in collaboration with an Ivorian Association “*Vie et Forêt*” (*Life and Forest*), has developed an agroforestry training programme to prevent further deforestation on the periphery of the park.



## **IF WE CONTINUE DEFORESTING WE LOOSE MORE THAN DESSERT**

### **Agroforestry and sustainable agriculture are key to food security and significantly contribute to climate change mitigation**

Unsustainable agricultural practices are a major cause of deforestation and global warming. About 20% of greenhouse gas emissions - the equivalent of the emissions from all cars, trucks, planes and ships together - are caused by cutting down tropical rainforests.

Pro-Natura promotes agroforestry, the system that increases productivity by combining crop cultivation and / or livestock-keeping in a forestry setting.

The opportunity is described by the Intergovernmental Panel on Climate Change (IPCC): «More than a million hectares would be suitable for conversion to high productivity agroforestry, with the potential to significantly reduce poverty and deforestation while sequestering carbon on a large scale».

## **Innovation Towards Sustainable Development**

For nearly 25 years now we have demonstrated the efficacy of agroforestry in Latin America, Africa and Asia where we have set up practical training centres for farmers. In particular we have developed innovative tree grafting techniques that double the yield of fruit and the first agroforestry handbook that is today available in both French and English.



**WE WILL WORRY ABOUT DEFORESTATION ONCE WE’VE CUT AND BURNT EVERYTHING DOWN**

**Mitigating climate change: Green Charcoal**

As a result of the rapid worldwide disappearance of forests, the two billion people currently using wood for cooking are facing a domestic energy problem. This is creating social problems and exacerbating deforestation, droughts and desertification. The use of wood as cooking fuel has another serious consequence: the World Health Organisation (WHO) estimates that 1.6 million woman and children die as a consequence of burning wood in badly ventilated homes (more than the death toll of malaria).

Pro-Natura is introducing a domestic fuel called “green charcoal” produced by an ecological process that carbonises organic materials not used for animal feed or soil enrichment. The result of 14 years of research and development, this green charcoal technology won Pro-Natura the Altran Foundation’s 1<sup>st</sup> prize for Innovation.

Our technology produces 4-5 tonnes of “green charcoal” per day using agricultural waste materials such as cotton stems, rice husks, coffee residues. It has now been transferred to a new Paris-based social enterprise, *Green Charcoal International*, which now constructs the Pyro-6F machines and continues R&D.

**14 YEARS OF DIGGING AROUND IN THE SAND ... ALL THAT JUST TO FIND SOME VEGETABLES**

**Massive increases in food yields with the use of biochar**

For 7,000 years Indians in the Amazonian region have been fertilising the soil using powdered wood charcoal, called biochar, and varied organic wastes resulting in a soil of remarkable fertility called *Terra Preta*. Today we understand that biochar acts as a catalyst facilitating the fixation of water and nutrients and the development of a rich population of microorganisms, in turn responsible for increased yields and resistance of crops.

Experiments carried out by Pro-Natura in Senegal, using green charcoal as biochar, in conjunction with world-class authorities like Professor Johannes Lehmann at Cornell University and Professor Bruno Glaser at the University of Bayreuth, have shown increases in plant productivity from 50 to 200%.

These biochar-rich soils can also be considered as true “carbon sinks”, absorbing and storing atmospheric CO<sub>2</sub>. Each tonne of biochar can sequester around 2.7 tCO<sub>2</sub>e (or 27 tCO<sub>2</sub>e per hectare of land where 1 kg of biochar has been used per m<sup>2</sup>). Pro-Natura believes that carbon credits associated with the sequestration of carbon by adding biochar to soil will soon become internationally accepted.

**Pro-Natura’s biochar doesn’t induce the same environmental problems associated with wood charcoal because biochar is green charcoal, that is charcoal produced only from renewable biomass.**



## ***EVEN IN AFRICA THERE IS NO SEASON FOR VEGETABLES***

### **Super Vegetable Gardens with biochar provide a family of ten with a year round balanced diet from a plot of land no bigger than 60 m<sup>2</sup>, while using 80% less water**

To address hunger and malnutrition, Pro-Natura International is introducing *Super Vegetable Gardens (SVG)*, a set of organic and highly productive innovative techniques based on more than 15 years research by JTS Semences. Small 60m<sup>2</sup> plots of land can produce more than a tonne of vegetables annually, food for a family of ten and surplus to sell. The production is constant year-round, independent of seasons with a regular cycle of 45 days. The system permits a reduction in water usage by 80% and limits the work needed to an average of two hours per day. SVG kits consist of specially adapted (non-GM) seeds, soil amendments such as biochar, irrigation equipment, and innovative tools such as nets and water retention mini-sponges.

## ***IF CONSERVATIONISTS DON'T WIN, WE ALL LOSE***

### **The conservation of biodiversity is a big part of tackling climate change**

Pro-Natura International organises the largest expeditions in the field of natural history and has developed innovative flying devices to explore the canopies of the world's rainforests.

After five expeditions to the canopies of the world's rainforests, and in anticipation of the 2010 International Year of Biodiversity, Pro-Natura International has this year launched «Our Planet Reviewed», a programme of unprecedented natural science expeditions designed to identify and study the world's biodiversity "hot spots".



This new initiative in conjunction with the Natural History Museum in Paris and the International Union for Conservation of Nature (IUCN) is bringing over 150 scientists together on new expeditions to Mozambique's Northern coastal forests on the border with Tanzania and Madagascar's southern coastline (<http://www.laplaneterevisitee.org/en>). Paradoxically, the most biodiverse areas in the world are also the most threatened.

#### **A different scale**

The scale and way in which such work is carried out must change. Our last expedition to Santo in Micronesia in 2006 confirmed that ambitious inventories are necessary and possible: the deployment of extraordinary human and logistical resources enabled the sampling of around 10,000 species, several hundreds of which were completely new to the natural sciences. ([www.santo2006.org](http://www.santo2006.org)). ■

