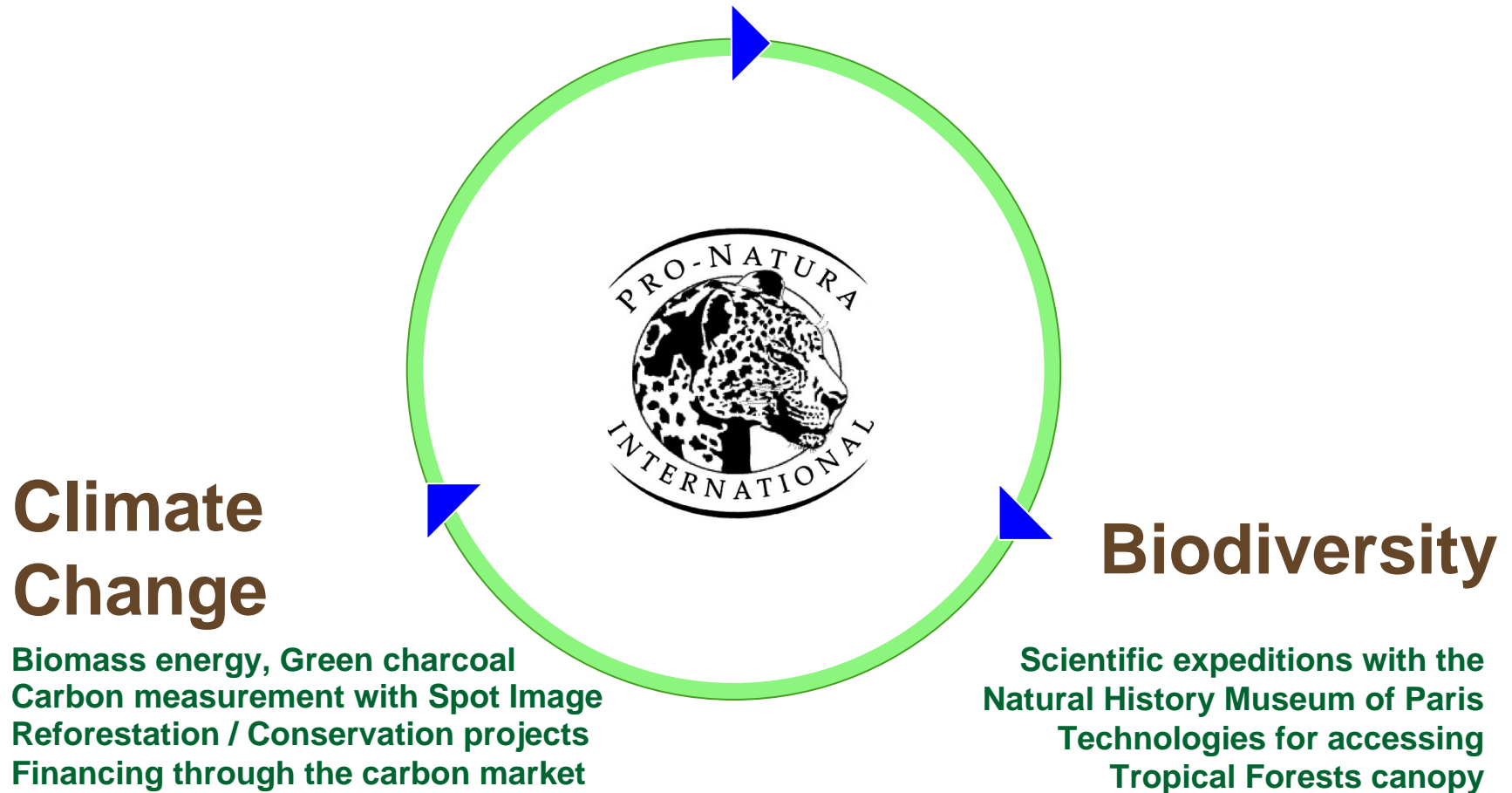


Fighting Poverty

Participatory rural development plans / Sustainable Agriculture & Agroforestry
Micro-Enterprises & Micro-Credits / Education & Health / Nutrition



*Fighting against Rural Poverty
Conserves Biodiversity and thus mitigates Climate Change*

Innovate... through Biomass Energy

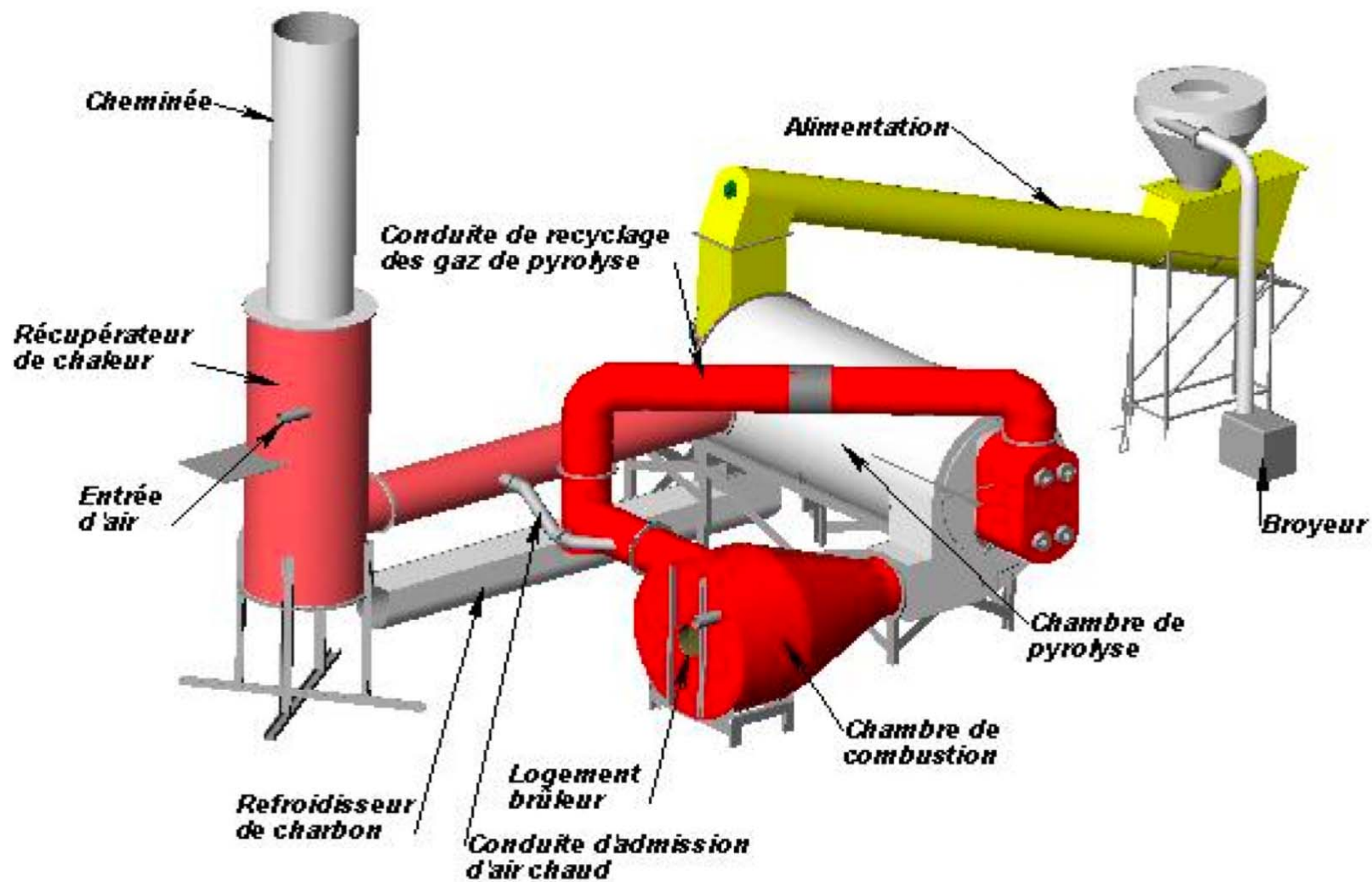
- Two billion people around the world use unsustainable wood for household energy needs
- Need to combat widespread rural problem of indoor air pollution (IAP) that kills more than 1.6 million of women and children each year - one person every 20 seconds - and some two billion more are at risk
- Kills more people than malaria and nearly as many as unsafe water and poor sanitation

Green-charcoal an innovative technology

- Pro-Natura has created 'Green-charcoal' innovative technology promises an environmentally friendly and economically competitive alternative to charcoal
- Uses agricultural waste and annual plants like weeds, reeds, coffee and rice husks, stems, bamboos...not used for animal foodstuff
- Can also use wood and provides a yield of 35%
- Awarded the ALTRAN Foundation's 1st Prize for technological innovation in 2002

Continuous carbonization process

- Carbonization takes place on a continuous basis
- Reactor heated at 550°C
- Pyrolytic gases recycled and burnt in a post combustion chamber
- Process practically autonomous in terms of energy
- Machine needing pre-heating for start up
- Two models Pyro-6F producing 800 tons per year and Pyro-7 producing 1,000 tons per year
- Price Pyro-7 ex-works €240,000, Pyro-6F €205,000





Pyro-6F machine in Senegal





Climate change mitigation potential

- Avoids deforestation and methane emissions
- Avoids emissions from burning of agricultural residues
- Each ton of green charcoal produced generates 11.6 tons of CO₂e
- Pyro-7 produces 12,000 tons of CO₂e per year @ US\$20. per ton
- Electricity production from green charcoal possible in the range of 40 to 500 kW through gasification

Electricity Production from Green charcoal

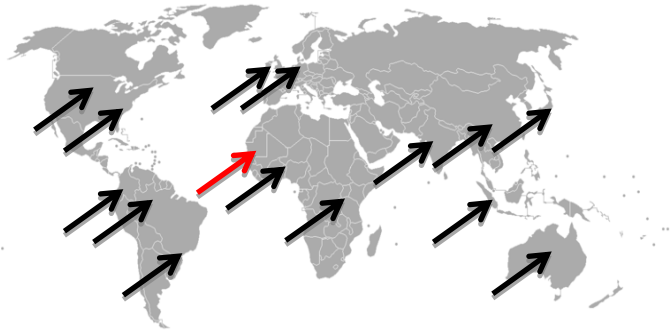


From 60 to 500 kW



Biochar around the world

Growing interest & Research in the Scientific Community



Key Universities

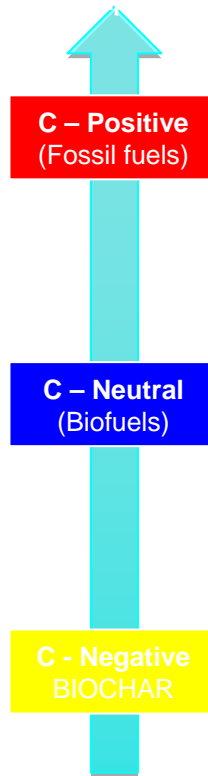
→ Partnership with Pro-Natura

- Bayreuth (Germany)
- Cornell (USA)
- Limerick (Ireland)
- New South Wales (Australia)
- Newcastle (UK)

Events

- IAI April 2007 Conference (Terrigal, Australia)
- IBI Sept. 2008 Conference (Newcastle, UK)
- **Poster presentation of Pro-Natura's biochar projects**

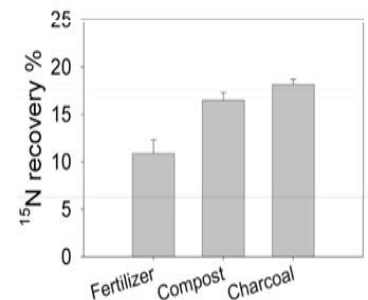
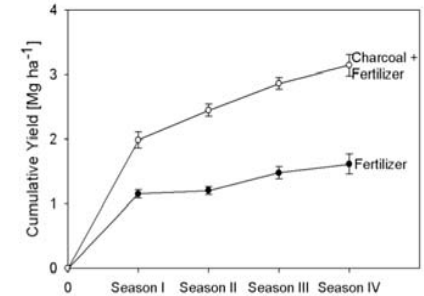
More information: <http://terracarbona.org>



Results of biochar soil amendment

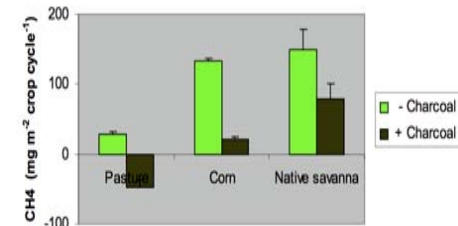
BENEFITS

- Better productivity
- Better quality
- Less fertilizer
- Less soil pollution
- Less GHG emissions
- **HIGHER REVENUE**



Increased N recovery

Integrated Methane fluxes under field conditions in oxisols from South American Savannas



Reduced GHG emissions from soil