



## CLIMATE

# COMBATING DEFORESTATION AS CLIMATE MEASURE: VITO develops expertise

**T**he Climate Change Conference in Copenhagen is leading to high expectations: will we now obtain a new climate agreement that is powerful enough to halt global warming? The approach to deforestation – REDD or Reducing Emissions from Deforestation and forest Degradation – is one of the hot issues: a complex problem requiring significant political negotiations. VITO is combining its expertise in the area of earth observation, spatial-dynamic modelling and reduction in greenhouse gas emissions in order to assist developing countries once REDD comes into force. A first project in Saint Lucia is intended to help see the forest for the trees.

### **1 hectare of rain forest is responsible for 500 tonnes of CO<sub>2</sub>**

The disappearance of forests is responsible for a considerable part of the increase in CO<sub>2</sub> emissions and global warming. Forests store up CO<sub>2</sub> in the form of wood, leaves and roots. They thus constitute an enormous warehouse for storing carbon, and contribute to regulating the earth's climate. One hectare of rain forest is easily home to 500 tonnes of CO<sub>2</sub>, which corresponds to the annual emissions of 100 cars. When a forest is cut down, however, CO<sub>2</sub> is released: 17 to 18 percent of global CO<sub>2</sub> emissions are due to deforestation. In countries with vast forested areas, such as Indonesia, deforestation can be responsible for up to 80% of the country's emissions. Hence, decreasing deforestation is a logical way to combat climate change. In political jargon, this is called Reducing Emissions from Deforestation and forest Degradation (REDD). Combating deforestation also protects the other functions of woodlands, such as biodiversity.

### Political negotiation phase

“REDD will probably be a part of the new Climate Treaty to be concluded in December in Copenhagen”, says **Tom Dauwe**, climate expert at VITO. “But it is still unclear what the REDD mechanism will look like. The general principle is that wooded countries are performing a service to the world by retaining their forests. But allowing these forests to remain is a source of lost income, for example due to the sale of wood, agriculture and mining. There should be compensation for this. Until now, various countries, environmental organisations and universities have made recommendations, and several proposals are on the table. The political negotiation phase has begun, which will culminate in the Climate Change Conference in Copenhagen. At the end of the day, both developing countries and Western countries have something to gain with REDD: for the former, REDD can be a source of income; for the latter, a way to take control of their CO<sub>2</sub> balance via the trade in emissions. However, there are still many issues to be addressed: Financing, placing a money value on CO<sub>2</sub> reductions, organising an honest system of penalties and rewards...”

### VITO bundles

It is clear that once the mechanism for REDD is a fact, there will be a need for specific expertise on deforestation and emission reduction. Developing countries will need to engage in ‘capacity building’ and develop an action plan by 2012. “Much is involved here”, emphasises **Dieter Cuypers**, climate expert at VITO: “How much of a reduction in emissions can a country realise by allowing forests to remain, how will the monitoring be organised, what social and ecological criteria count, who will pay for what?” “VITO is now bundling its knowledge at various levels to be able to assist developing countries soon in this. VITO is in a unique position because it is an expert in the area of emission reduction as well as a specialist in matters of vegetation monitoring based on earth observation. Via its role in earth observation programmes such as SPOT VEGETATION, VITO has access to historical databases with satellite images of the entire surface of the earth. Finally, VITO’s knowledge of spatial-dynamic modelling allows predicting how land use will evolve and how policy measures such as REDD can have an impact. This multidisciplinary expertise means that VITO can soon become an important international actor in the REDD story.”

### Saint Lucia, a first case

VITO is conducting an initial case study on Saint Lucia, a volcanic island in the Caribbean Islands. The island has many hectares of tropical forests that were spared due to the hilly terrain. Added to this is the fact that much agricultural land on the island will come free because banana cultivation has become less profitable. “The combination of a low level of deforestation and the ability to re-forest, makes the island an interesting case for REDD”, explains **Tom Dauwe**. VITO has a spatial model of the island from earlier research projects. It can also make use of the satellite images of the island taken during the last 20 years. Both instruments should help us assess how the woodlands on Saint Lucia are evolving, and what effect financial stimuli in the framework of REDD can have here. Via this pilot project, VITO wishes to contribute to a clearer view of REDD, a crucial link in resolving the climate problem.”