



# The conditions for sustainable development

Economics,  
Policies and  
Markets  
Programme

**T**he environmental consequences of economic growth and improved living standards have now reached such proportions that they could pose a threat to human livelihoods. Sustainable development is based on the concept of ecological, economic and social viability, which can be described as the ability of a system to reproduce itself and to resist shocks and the lack of negative feedbacks of that system on itself. Economic policies affect the variables that regulate the system and can therefore affect its dynamic.



Forest in the  
Kourou region,  
French Guiana

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## Objectives

The systematic identification of the links between economic policies, farming systems environmental externalities and, in return, the consequences of environmental change on the economy. The development of tools to assess the impact of economic policies on the sustainability of development process in developing countries.

## Methods

- Analytical works on the integration of the environment in the economic theory at different levels (local, regional, national or international).
- Empirical analysis of viability paths.
- Case studies of environmental damage and databases building.
- Formalization and simulation.

*Tropical  
rainforest*

## Achievements

Greenhouse gas emissions resulting from agricultural development have been studied empirically several times, providing an overview of the possible links between cooperation policies, international policies and agricultural emissions in developing countries. A study of deforestation in Indonesia has brought this process within the scope of the spatial and regional economic theory. Existing databases on water resources and use have been surveyed in order to analyze how to integrate agricultural externalities on these resources into a world computable general equilibrium model. An empirical study has also been conducted of the impact of the Asian crisis on the Indonesian timber and forestry sector. In the case of Amazonian agricultural frontiers, the ECOPOL programme has been involved in an empirical analysis of the key factors governing livestock expansion, the choice of pasture management



practices and the decision to clear new forest plots, and in a study of the interactions between changes in the dairy sector, regional development and small scale agriculture viability, in collaboration with CIRAD-TERA and CIRAD-EMVT and several North and South American institutions.

## The prospects

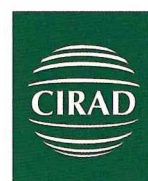
Experimental validation of the methodological results acquired on the interactions between regional development and deforestation in the Amazon will continue. The work will be extended to cover other externalities of farming on the environment, particularly carbon emission and sequestration as a result of land and forest use changes.

## Publications

Piketty M.G., Karsenty A., 2001. The Asian crisis and its impact on the Indonesian timber sector. In: Agriculture in crisis: people, commodities and natural resources in Indonesia, 1996-2000. London, Curzon Press, Montpellier, CIRAD, p. 72-94.

Maunier N., 1999. Les ressources en eau et leurs utilisations au niveau mondial : étude de l'existant et analyse critique des bases de données. Activities report, Université Paris VII, CIRAD, 18 pp.

Poccard-Chapuis R., Veiga J.B., Piketty M.G., Kaneyoshi Hashiguti, de Freitas C.M., Tourrand J.F., 2001. A cadeia produtiva do leite: uma alternativa para consolidar a agricultura familiar nas frentes pioneiras da Amazônia? In: IV encontro de Sociedade brasileira de sistemas de produção, 19-22 March 2001, Belém, Brazil, 16 pp.



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