

# Improving forage value of degraded pastures in Central America

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## Norwegian Institute for Nature Research, NINA,

is a national and international centre of competence in nature research.

Our competence is used in research activities, assessments, monitoring and environmental impact assessments.

NINA staff is approximately 150.

### Partners:

CATIE  
SUM (UiO)  
NTNU  
UMB

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## Institutional collaboration

**NINA and The Tropical Agricultural Research and Higher Education Center (CATIE) collaborate with the Senter for utvikling og miljø (SUM) at the University of Oslo and with national research institutions in Nicaragua, Honduras and Guatemala to achieve a better understanding of the factors that determine the composition, the utilisation and the management of pastures in Central America**

## Degraded pastures in Central America - PACA

In Central America, pastures cover more than nine million ha (about 30% of the total land area), half of which are estimated to be degraded. Over the past decade this pasture area expanded at an annual rate of four to nine percent, mostly at the expense of tropical semi-deciduous forest. The result has been a massive conversion of forests to pastures, but not the sustainable management of pasture or the use of more suitable alternatives for deforested lands. Specific for this system are the small size of the properties, the increasing conversion into monoculture pastures and the low yield of the silvopastoral system.

For the farm household, pasture degradation is the deterioration in pasture condition or quality. It results from exceeding the land's carrying capacity for cattle during periods of low production; the use of landscapes or soils that are inappropriate for pasture; and management practices not suited to small-size grazing units in the sub-humid Neotropics. These problems become more critical when farm sizes are small since it reduces the potential to exploit seasonal and yearly variation in forage

availability along environmental gradients.

The semi-natural grasslands in Central American silvopastoral systems constitute the main resource for the livestock production in the region. Despite their importance there is barely any knowledge about their composition, the attributes of the plant species and how they are utilised by livestock. Also the factors that underlie the farmers' management decisions are poorly understood. PACA addresses these questions and highlights the importance of understanding livestock production in silvopastoral systems as ecological systems which is essential to ensure ecologically sustainable pasture production and utilisation (see PACA publication list).

The project has developed a wide collaborative network including, in addition to NINA, CATIE and SUM, the Norwegian University of Science and Technology (NTNU) and the Norwegian University of Life Sciences (UMB) and trains MSc and PhD students from the region and from Norway.

[PACA publication list January 2008](#)



Figure 1. *Tropical forest converted to pasture land in Central America. Photo G. M. Rusch*