

# 1. Introduction

Forests cover about 30 percent of the Earth's land area. At all spatial scales, from local to global, trees and forests play a critical role in human livelihoods, as well as in ecosystem functioning and health. In many local communities worldwide, people have a daily dependence on forests, engaging in fuelwood-gathering, the harvesting of wood and non-wood forest products, and community-based forest management. Forests also provide wood for larger-scale commercial purposes, habitat for more than half the world's terrestrial species, clean water, and other important ecosystem services.

Understanding the condition and changes through time of the globally valuable forest resource is important for human well-being and ecosystem health. For example, land-cover and land-use change can potentially affect regional and global climates by emitting or sequestering carbon (Pan *et al.*, 2011) and by altering the overall reflectance properties of the Earth's surface (Feddema *et al.*, 2005; Avissar and Werth, 2005).

FAO analyses and compiles data on the extent and state of the world's forests through a process called the Global Forest Resources Assessment (FRA). Published every 5–10 years, the FRA report reflects the major issues of concern prevalent at the time of reporting. In response to post-Second World War needs, early FRAs focused on timber stocks, while more recent editions, including FRA 2010 (FAO, 2010), have addressed topics such as forest biodiversity, forest carbon stocks and the social benefits of forests.

The FRA is an important information source for global efforts to sustainably manage forests, reduce the concentration of atmospheric greenhouse gases and advance other international initiatives. According to guidelines for national greenhouse gas inventories published by the Intergovernmental Panel on Climate Change (IPCC) (Paustian, Ravindranath and van Amstel, 2006), FAO is the main source of activity data and emission factors for forest and other land-use categories in Tier 1 calculations. The IPCC guidelines suggest that, where more detailed country data are unavailable, aggregate information can be obtained from international data sources such as the FRA.

## **THE FRA 2010 REMOTE SENSING SURVEY**

The FRA 2010 Remote Sensing Survey was the result of a partnership between FAO, countries and the European Commission Joint Research Centre (JRC). Its goal was to obtain globally consistent information on the areal extent and changes in tree cover and forest land use between 1990 and 2005 at the regional, climatic domain and global levels. This report presents the results of the global forest land-use component of the survey.