

A VEGETATION MAP OF SOUTH AMERICA

MAPA DE LA VEGETACIÓN DE AMÉRICA DEL SUR

MAPA DA VEGETAÇÃO DA AMÉRICA DO SUL



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South America accounts for around 12% of the Earth's land surface. The continent is among the most physically, biologically and climatologically diverse of all Earth's land-masses. Climate ranges from arid desertic conditions, through to humid tropical regions and cold permanent ice caps. The continent boasts the largest rainforest in the world, the largest river and has some of the world's greatest concentrations of biodiversity. In addition to the largest tropical forest left on the Earth the continent accounts for nearly a quarter of the world's potentially arable land, around 12% of the current cropland, and 17% of all pastures.

The UN Population Division puts the year 2000 population for Latin America and the Caribbean at 519 million and predicts this could rise to as many as 1,025 million by 2050 (United Nations, 2001). This will put ever-increasing pressure on the land to provide employment, food, fibre and fuel. To provide for the growing population the forests will very likely continue to be cleared to make way for agriculture, ranching and plantations. Commercial wood harvesting too is likely to increase. South America's humid tropical forests declined by 16 Mha between 1990 and 1997, an average rate of 0.38 % per year, though deforestation rates in hot-spots reached 4 %. All the indications are that this process has not stopped.

Deforestation could lead to reductions in regional water cycling and precipitation, as well as affecting the global carbon cycle. Many of the continent's dry land ecosystems are already subject to desertification, grassland production could be reduced because of increasingly variable precipitation and likewise agricultural activities in specific parts of the continent may change in response to climatic shifts. Determining likely climate change scenarios, modelling impacts of climate change, socio-economic planning and protecting the continent's biodiversity all call for regular monitoring of land cover.

Systematic land cover maps for the entire continent have only been produced every decade or so since the 1970's. Earlier maps were compiled from diverse sources and are produced on coarse scales. Maps dating from the 1990's are based on data collected by Earth Observing satellites. Compared with the earlier maps these benefit from uniformity of observation across the continent and offer improved spatial detail. They do not however offer the thematic richness of the earlier products.

The Land Cover map of South America for 2000 presented here offers a combination of spatial and thematic detail previously unavailable. The map uses data from microwave and optical sensors on Earth Observing satellites to map South America's land cover into more than 40 classes at a spatial resolution of 1 km. Mapping to these levels of detail has only been possible because of recent advances in Earth Observing satellite technology and because of the involvement of scientists from South America and Europe with profound expertise in the continent's regional land cover. The quality of the final product stands testimony to the advantages of international scientific co-operation and provides an essential assessment of the continent's land resources at the turn of the new millennium.