

ENVIRONMENTAL EDUCATION FOR PRIMARY SCHOOLS

South American Ecosystems Atlas

The Ecosystems Atlas of South America and Antarctica is an educational programme for primary-school pupils. Software is distributed free to South American institutions that develop educational activities relating to the environment. The project is the result of successful collaboration between the National Institute for Space Research (INPE) and Vale do Para  ba University, supported by the Bradesco, Vitae and Atech foundations.

One of the outcomes of the first Conference on Remote Sensing Education, held in Balne  rio Cambori  , Brazil in May 1997 was the Cambori   Document describing remote-sensing educational activities in the region. One major thing it noted was the lack of material for remote-sensing education in Portuguese and Spanish and the high cost of satellite imagery for classroom educational material. These were the reasons behind INPE deciding to create the EDUCA SeRe programme in 1998.

Programme Goals

The programme is divided into four projects. The aim of Project III, Ecosystems Atlas of South America and Antarctic, is to create image-maps and an atlas using satellite imagery, more particularly to:

- develop educational material on the subjects of geography, science and the environment
- distribute data and educational material for study of the environment and natural resources
- make primary-school pupils aware of important ecosystems in South America and Antarctic
- make easily accessible to such pupils the results of environmental remote-sensing research.

The Atlas was presented to South American institutions on 8th November 2005 at INPE headquarters in Sao Jose dos Campos, Brazil, and officially presented to MERCOSUL (common market of South America) institutions two days later, during the Remote Sensing Education V conference held in Cordoba, Argentina.

Development and Structure

Forty-four professionals from seventeen institutions in eleven countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guyana, Peru, Uruguay and Venezuela) participated in developing the Atlas. All contributors were involved in remote sensing but their backgrounds varied from ecology to cartography to forest engineering. The Atlas was developed completely by internet; project participants never met. It is distributed in CD-ROM format in Portuguese and Spanish and is free to those developing education programmes relating to the environment in South America. The Atlas includes 250 images (satellite imagery and photographs) and 147 pieces of text. The imagery (JPG format) includes that derived from Landsat/TM, Spot, Cbers, NOAA/AVHRR, ERS, Envisat, Terra/Acqua, SAC-C and Goes, and differs in resolution and bandwidth to highlight the dynamics of ecosystems illustrated. The Atlas includes resources on two eco-regions, the Amazon rain forest and Atlantic forest in Brazil, and nineteen ecosystems. Topics covered include ecology and ecosystems, climate, physical geography (relief, river basin), socio-economic aspects (economy, folklore, traditions, language, food and demography), and fundamentals of remote sensing. Information about the movement of the earth is demonstrated with globe animation, highlighting seasons and cloud-cover. The Atlas was tested in two Bradesco foundation primary schools for the underprivileged before being presented to the wider educational community.

Dissemination and Use

The Atlas can be ordered by completing application forms on the website. Information concerning institution and use must be supplied and provides us with an indication of the types of users and distribution in South America. Over a period of three weeks the Atlas project received around four hundred applications from countries in South America, Africa and even Portugal. At the time of writing nearly three thousand atlases have been distributed, about 80% in Brazil, where the Atlas is used by institutions representing public (78.5%), private (18.1%) and NGO (3.26%) interests. Of the educational institutes, 73.14% are grammar schools, 51.4% high schools and 10.9% universities.

Since November 2006 INPE and SELPER (Latin American Remote Sensing Society) Education Committee have been carrying out a dissemination programme in the region. The Atlas is being presented at many remote-sensing conferences and seminars at universities and educational authorities, including, for example, the Brazilian Remote Sensing Symposium in April 2007. Atlas information was published in the symposium news and on the INPE homepage, and consequently in many newspapers and science homepages.

