

SCIENTIA AGRICOLA

EDITORIAL

The BIOTA/FAPESP Programme: The Virtual Biodiversity Institute (www.biota.org.br).

The common objective of the BIOTA/FAPESP research projects is to study the biodiversity of the state of São Paulo to:

- a) understand the processes that generate and maintain biodiversity, as well as those that can result in its harmful reduction;
- b) standardise the collection of data and the communication of relevant information on biodiversity conservation and sustainable use to decision makers;
- c) ensure prompt and free public access to this information; and
- d) contribute to improving teaching standards related to conservation and sustainable use of biodiversity.

These are ambitious objectives since the State of São Paulo State with its ca 250,000 km² area spans tropical and subtropical latitudes and as a result has a large variety of ecosystems, each rich in biodiversity.

Six years after the conception of the Programme, there are now 69 major research projects being developed (www.biota.org.br). All major Universities in the State (USP, Unesp, Unicamp, UFSCar), Research Institutes (such as the Botanic Institute, the Forestry Institute, the Geological Institute, Inpe), Embrapa Centers and NGOs (Social Environment Institute, SOS Atlantic Rainforest Foundation, Conservation International and CRIA) are involved, with about 400 researchers trained to a PhD level or higher and 300 university graduates taking part. There is an additional of 80 participants from other Brazilian States and about 50 from abroad.

The research projects linked to the Programme serve to increase knowledge on biodiversity and to simultaneously produce output for use in the formulation of State policies on biodiversity conservation and sustainable use. For this purpose, projects aimed at improving basic scientific knowledge are linked to projects seeking to make economic use of certain species.

The Programme uses the biodiversity definition established by the Convention on Biological Diversity (www.biodiv.org), i.e., biodiversity is the variety of living organisms – fauna, flora and micro-organisms – from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity of both genes and populations of either one or several species, as well as the interactions between species and the ecosystems.

All projects are linked together in the Environmental Information System, SinBiota (<http://sinbiota.cria.org.br>), developed by the Reference Centre on Environmental Information (CRIA) in collaboration with the State University of Campinas (Unicamp). SinBiota was developed in PostgreSQL, using XML and XSLT protocols and an Intel/Linux server. It is linked to an electronic map base (<http://sinbiota.cria.org.br/atlas>), produced by the Forestry Institute of São Paulo by digitalizing the 1:50,000 scale State map sheets by State government bodies in charge of economic development, which are the first users of this information base that is freely available on the Internet.

The Programme has also launched an electronic peer-reviewed journal, *Biota Neotropica* (www.biotaneotropica.org.br) to publish research findings on the classification, conservation and sustainable use of biodiversity in the whole of the Neotropics.

Ongoing and future plans include the incorporation of the data produced by the Programme into existing information bases (e.g. museums, herbaria and microbial culture collections). Whilst it is important that the data collected remain with the custodian, a system that is being developed to allow the integrated use of historic and newly collected data in geographic distribution models such as those developed in collaboration with the University of Kansas, using Genetic Algorithm for Rule-set Production. Another initiative concerns authoritative taxonomic information. There are international initiatives (e.g. the Catalogue of Names (www.gbif.org), Species 2000

(www.sp2000.org) and the Integrated Taxonomic Information System (www.itis.usda.gov) that aim at implementing a complete catalogue of valid names (including synonyms and common names) and the BIOTA/FAPESP information system intends to collaborate with these initiatives.

This volume of *Scientia Agricola* presents a set of studies, which, in line with the BIOTA Programme, link nature conservation and sustainable use of natural resources. The collection of articles includes theoretical and applied studies related to environmental quality, biodiversity conservation and use at all levels of biodiversity, from landscape to communities, populations, species, genes and molecules, of animals, plants and microorganisms.

Although the main aim of the Biota Programme is to improve and disseminate our knowledge on biodiversity and to set strategies for its conservation, the first six years of the Programme have demonstrated that nature conservation requires the involvement of those working on land use policy and agricultural research. Bringing biodiversity studies to *Scientia Agricola* is just one step in that direction.

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