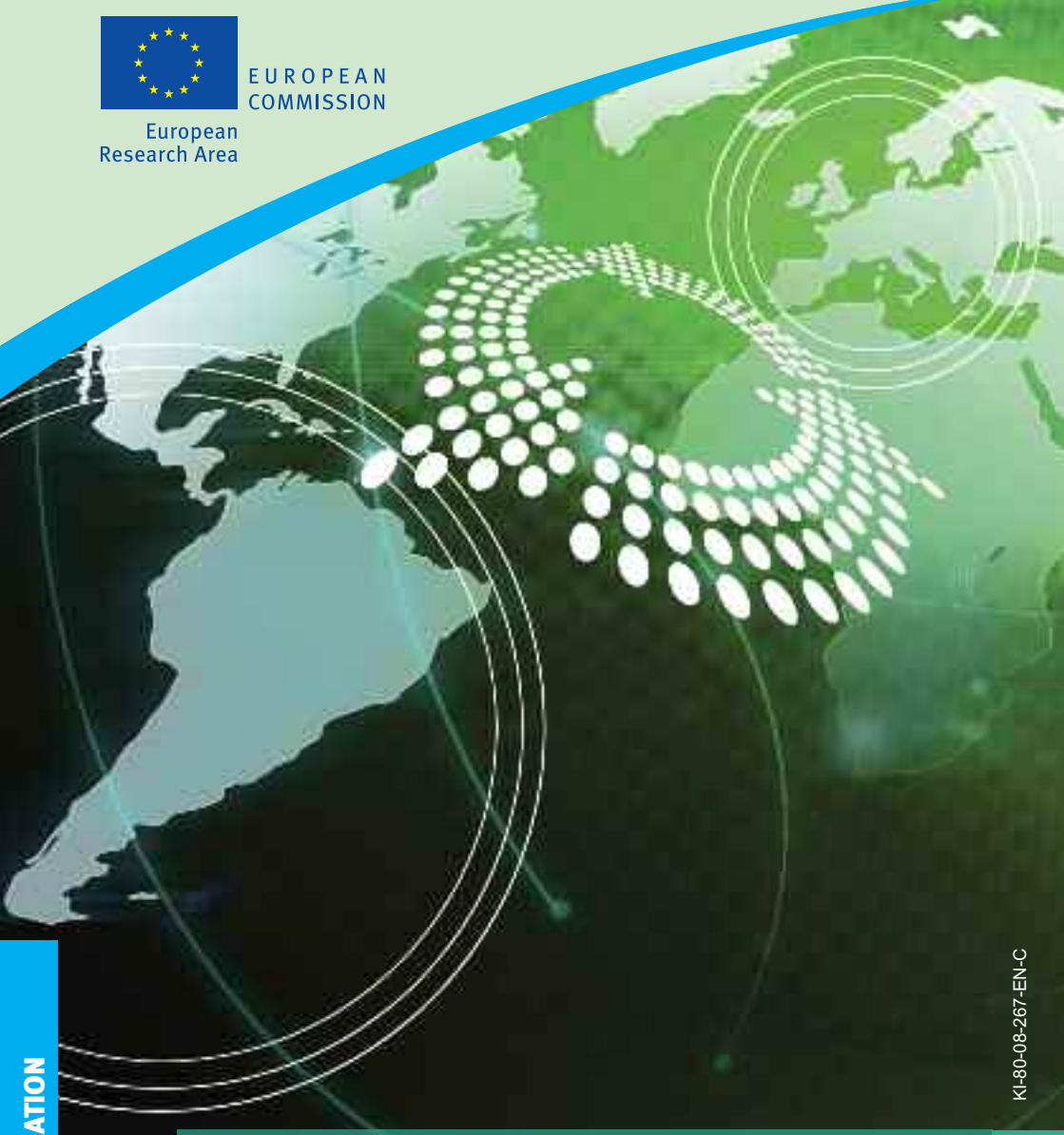
EUROPEAN COMMISSION

European Research Area



GENERAL INFORMATION

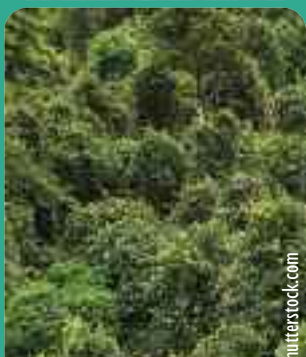
Scientific and technological cooperation on environment challenges between Latin America, the Caribbean and the European Union

KI-80-08-267-EN-C

Introduction

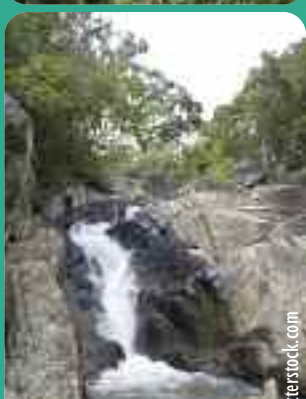
Today most leaders recognise the critical role of knowledge in marshalling solutions to increasingly complex challenges to our societies. Entire economies are judged by the investment they make into education, science, technology and innovation. Knowledge is indeed critical for turning these challenges into opportunities for more sustainable development. The 1999 Rio Summit of Heads of State and Government of Latin American, Caribbean and European countries therefore placed scientific and technological cooperation firmly on the agenda for bi-regional cooperation. Since the Madrid Summit in 2002, leaders are promoting the development of an EU-LAC Knowledge Area for solving societal problems and creating new opportunities.

European, Latin American and Caribbean sensitivities towards environment problems can be different because of diverse circumstances and historical trajectories. However, there is much agreement, not only on shared cultural values and economic interests, but also in the identification of issues of common interest. All countries in both regions have ratified the Convention on Biological Diversity, endorsed the Johannesburg Plan of Implementation adopted at the World Summit on Sustainable Development and the Millennium Development Goals. The EU Water Initiative has a regional Latin America Component and several bi-regional workshops have refined priority issues for research cooperation in the specific socio-economic context of Latin America and the Caribbean.



Four countries have S&T cooperation agreement with the European Union (Argentina, Brazil, Chile and Mexico); three sub-regional groupings negotiate association agreements: Central America, the Andean Community and MERCOSUR. Chile and Mexico are already associated to the European Union. Cooperation uses instruments from several policy areas, including external relations, trade, technical and economic cooperation and scientific cooperation.

Environmental policy dialogue at bi-regional level is still in its infancy, but it can draw on a growing number of bi-regional research collaborations. In the 6th Research Framework Programme (FP6 – 2002-2006) alone, some 221 collaborative scientific projects mobilised 538 teams from Latin America (529) and the Caribbean (9) and 2,679 European (and other non-Latin American) teams with a total value of more than €1.3 billion (EC contribution more than €700 million). Conservatively defined, 74 of these projects addressed environmental topics directly, without including agricultural projects with environmental components. A small sample is shown here.



Under the 7th Research Framework Programme (2007-2013) international cooperation is intended to be more substantial, better coordinated and integrated by opening all its components to international cooperation. It also creates an enabling framework for such cooperation through measures on scientific and technological policy dialogue, promotion and activities to improve coordination of international S&T cooperation of EU Member States.

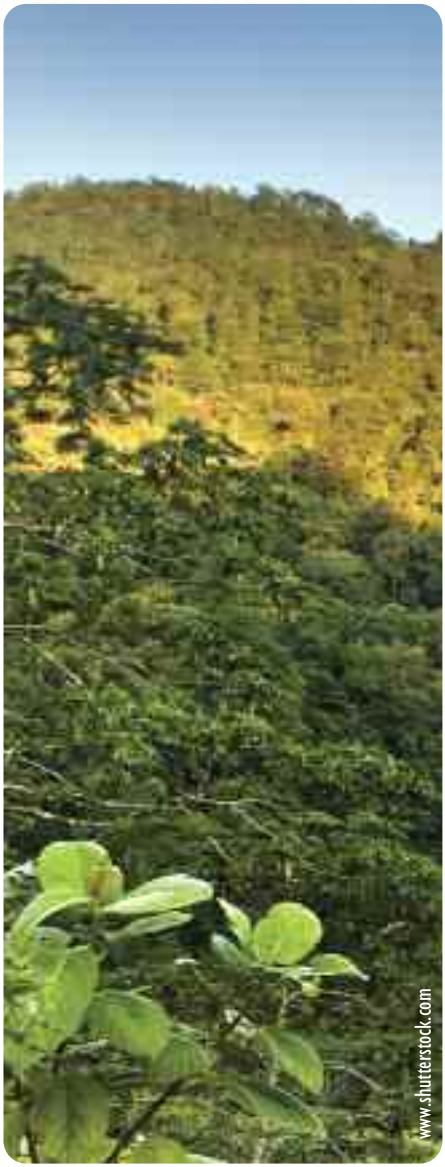
This is in addition and complementary to bi-regional and bilateral technical and financial cooperation through - geographically focused - National and Regional Indicative Programmes and support through - global - thematic budget lines, such as on Environment and sustainable management of natural resources including energy.

CLARIS – A Europe-South America Network for climate change assessment and impact studies

The objective of this network was to strengthen collaboration between European and South American teams in order to develop common research strategies on climate change and impact issues in the subtropical region of South America through multi-scale integrated approaches (continental-regional-local). The project focused particularly on La Plata Basin and favoured the transfer and adaptation of knowledge and expertise on Earth System Models and their different components and coupling procedures. It allowed European and South American teams involved in regional climate modelling in South America to compare and exchange their methodologies. They started to set up a high-quality daily climate database for temperature and precipitation, which is believed to be of great value to validate and further evaluate the capabilities of the European Climate Assessment Project in simulating climate trends and frequency changes of extreme events. Extreme events are of particular interest to South America, given the effects of the El Niño Southern Oscillation on the continent. Thanks to three pilot activities the feasibility and potential of using climate information for decision making has been explored in relation to three major areas of interest: agriculture, health and pollution. The more intense communication and researcher exchange enabled through the CLARIS project was useful to make progress on identifying the most promising research strategies. It also helped to strengthen links to public and private organisations in the three thematic areas which need advice about climate variability to design or adapt their management and investment strategies in vulnerable regions.

The CLARIS project ran from 1/9/2004 to 30/8/2007 and was coordinated by Dr. Jean Philippe Boulanger of CNRS in France. A total of 14 teams from Argentina, Brazil, Chile, France, Germany, Italy, Spain, The Netherlands and Uruguay participated.

http://www.claris-eu.org/



CENSOR – Climate variability and El Niño Southern Oscillation: Implications for natural coastal resources and management

Marine biodiversity and heavy pressure on marine resources are strongly influenced by the ENSO (El Niño Southern Oscillation) climatic variability. It affects particularly aquatic and land habitats along the Pacific coast of Chile and Peru and the upwelling system of the Humboldt Current. Both phases, the warm phase (El Niño) and the cold phase (La Niña) have far-reaching effects on the ecology, socio-economic conditions and infrastructures in Chile and Peru. The local traditional fisheries represent principal activities for the local economies in both countries. Despite large numbers of studies of the El Niño phenomenon, the underlying mechanisms and processes responsible for these effects have not yet been analysed. Traditional fisheries and invertebrates and fishes in coastal and brackish areas suffer significantly from El Niño periods. Both phases have also positive effects, which local fishermen and coastal communities have not so far taken full advantage of.

The CENSOR project works on the use of data that can help better understand El Niño and La Niña effects on coastal ecosystems and their resources. Early results have already been published and also shared with communities in coastal areas. The researchers are hopeful that the new knowledge is useful for reconciling social and economic interests in the countries concerned with environmental conditions. To this effect, they are, among others, also making databases and publications available in the public domain.

The project runs from 01/10/2004 to 30/09/2008 and is coordinated by Dr. Sven Thatje with double affiliation: AWI (Alfred Wegener Institute for Polar and Marine Research, Bremerhaven (Germany) and National Oceanographic Centre of the University of Southampton in the UK. The 14 collaborating teams are from Argentina, Chile, France, Germany, Peru, Spain and the UK.

www.censor.name

INCOFISH – Reconciling multiple demands on coastal zones with emphasis on aquatic ecosystems and fisheries

INCOFISH conducts specifically targeted strategic research towards reconciling multiple demands on coastal zones. It has evaluated and integrated data, tools and concepts suitable to contribute to the goals set by the World Summit for Sustainable Development in Johannesburg, such as restoring healthy fish stocks and ecosystems by 2015. INCOFISH focused its research activities on the following Integrated Coastal Zone Management (ICZM) issues: (a) document historical performance of ecosystems to deal with the 'shifting baselines' syndrome and provide sound reference points for resource restoration; (b) provide electronic maps for all coastal species to establish authoritative species inventories and explore scenarios of global change and invasive species; (c) create spatial ecosystem models for all coastal systems treated in this project as a basis for better understanding the resource; (d) provide guidelines and tools for best sizing and placement of marine protected areas; (e) research impacts of ecotourism on coastal ecosystem and provide best-practice guidelines; (e) identify suitable simple indicators to promote and monitor sustainable fisheries; (f) provide valuation of coastal ecosystem products and services and of different management regimes; (g) review legal instruments for sustainable fishing in coastal zones; (h) revisit coastal transects as a tool for structuring and understanding multiple demands on coastal zones; (i) provide an archive and web portal for easy, public access to all data and tools relevant for ICZM.

The tools and concepts resulting from INCOFISH research have been tested in real-world scenarios in selected coastal systems worldwide, including Latin America. Together they form a package with the potential to contribute to solving societal problems in coastal zones in Europe and partner regions. Several knowledge products and services of the project linked e.g. to biodiversity conservation and sustainable resource use have already been picked up outside academia, such as the seafood guide accessible through mobile phones.

The project runs from 01/04/2005 to 31/03/2008 and is coordinated by Dr. Rainer Froese and Dr. Silvia Opitz of the Leibniz Institute for Marine Sciences in Kiel, Germany. The consortium combines the expertise and experience of 35 teams from the following countries: Brazil, Chile, China, Columbia, Denmark, Ecuador, Estonia, Germany, Italy, Kenya, Mexico, Namibia, Nicaragua, Norway, Peru, Philippines, Senegal, South Africa, Sweden, Thailand, UK, Uruguay (teams from 8 LA countries).

www.incofish.org

ALARM - Assessing LArge-scale environmental Risks for biodiversity with tested Methods

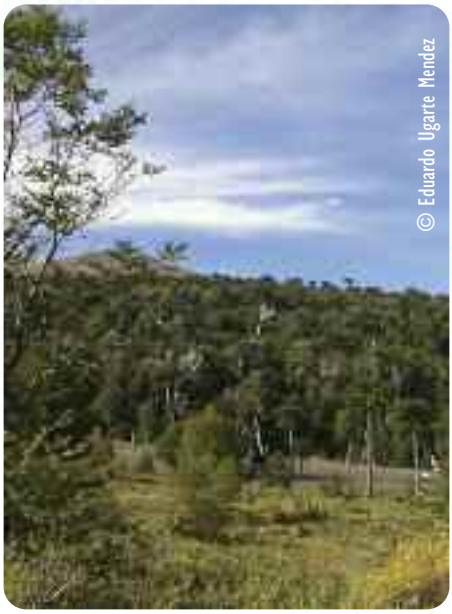
Risk Assessment for Biodiversity: from Europe to the Globe

Based on a better understanding of terrestrial and freshwater biodiversity and ecosystem functioning, ALARM develops and tests methods and protocols for the assessment of large-scale environmental risks in order to minimise negative direct and indirect human impacts. The research focuses on assessment and forecast of changes in biodiversity and in structure, function, and dynamics of ecosystems. This relates to ecosystem services and includes the relationship between society, economy and biodiversity. In particular, risks are assessed arising from climate change, environmental chemicals, biological invasions and pollinator loss in the context of current and future land use patterns in Europe and elsewhere in the world. Case studies shed light on the environmental risks subsequent to each of these impacts. This yields an improved understanding on how these impacts act individually and affect living systems. The knowledge on how they act in concert is poor, but ALARM can be seen as/is the first research initiative with the critical mass needed to deal with such aspects of combined impacts and their consequences.

Particular attention is paid to making research results usable in stakeholder argumentation and negotiation situations through a specifically designed part of the website. This is a potentially powerful way to enable citizens to use research results in shaping dialogue among different interest groups and also get a better understanding of attitudes and interests of others.

The ALARM project is running from 01/02/2004 to 31/01/2009 and coordinated by Prof. Josef Settele of the Helmholtz-Centre UFZ – Centre for Environmental Research in Halle, Germany. It combines the expertise of 68 partners from 35 countries: 21 EU Member States with Belarus, China, India, Israel, Russia, Serbia, South-Africa, Switzerland, The Philippines, Ukraine and five Latin American partners respectively from Argentina, Bolivia, Chile, Guatemala and Mexico.

www.alarmproject.net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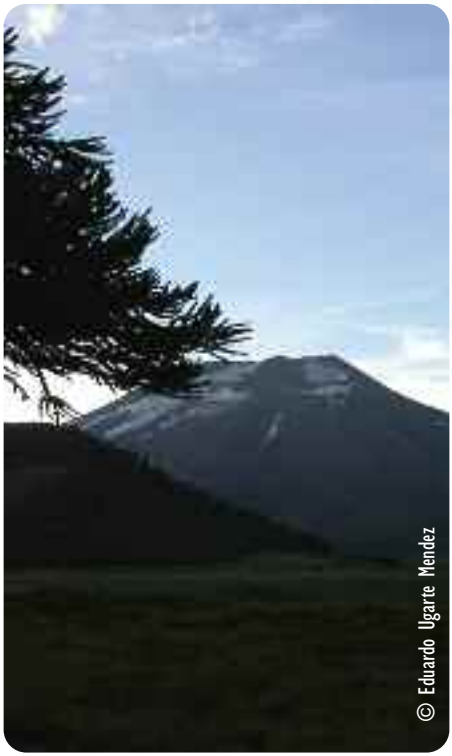
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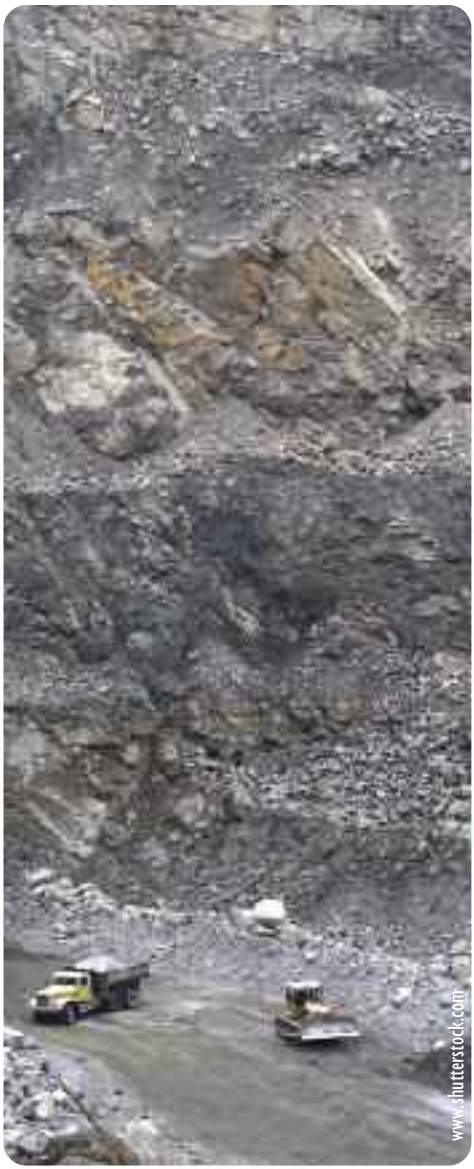
CAMINAR – Catchment management and mining impacts in arid and semi-arid South America

More than 25% of South America is arid or semi-arid. Difficulties in water management systems hinder the sustenance / recovery of ecosystems and human communities in these fragile areas. The twin scourges of erosion and salinisation are exacerbated by some human activities. Mining has the highest environmental impact, yet it contributes more to legal export earnings in the region than any other sector. A rigorous review of the effectiveness of existing policies could help developing new approaches to river-basin management so that such vital economic activity can be carried out in a more sustainable manner.

CAMINAR aims at contributing to the establishment of policy options, management strategies and technologies for the sustainable management of ecosystems in those river basins of arid and semi-arid South America, which are impacted from mining. Peru, Bolivia and Chile are demonstration countries for realising the following objectives: (a) establish forums for dialogue on the ecological and water resources impacts of mining; (b) critically evaluate the effectiveness of existing regulatory strategies for mining through studies of selected river-basins; (c) develop guidelines for integrated water resources and ecosystem management with particular emphasis on mining impacts; (d) develop decision support tools to facilitate participatory water management planning; and (e) derive a set of principles for future policy development and implementation.

The project runs from 01/02/2007 to 31/01/2010 and is coordinated by Dr. Jaime Amezaga from Newcastle University, UK. The nine teams joining their forces come from Bolivia, Chile, Peru, Portugal, Spain and the UK.

www.ncl.ac.uk/environment/research/hero/CAMINAR.htm



CASES - Cost assessment for sustainable energy systems

With prices of fossil energy soaring in the face of continued very strong growth of demand, the former approach to increase supplies in line or ahead of demand needs to be revisited. In addition to revisiting the energy mix, questions of increasing energy efficiency gain importance. Cost will be an important criterion for devising the sustainable energy systems of the future. This Co-ordination Action has three principal objectives: (1) To compile detailed estimates of both external and internal costs of energy production for different energy sources for the EU-25 Countries and for some non-EU Countries under energy scenarios to 2030; (2) To evaluate policy options for improving the efficiency of energy use, taking account of the full cost data; (3) To disseminate research findings to energy sector producers and users and the policy making community.

These objectives reflect the general requirement of the Sustainable Energy Systems Work Programme to address "questions of socio-environmental damages of energy production and consumption" and "to make a comparative cost analysis for present and future energy generation alternatives". The project is also relevant to the commitments undertaken by the European Union within the Kyoto Protocol. A detailed knowledge of the full cost structure of energy production within the EU-25 and some key non-EU countries is crucial to reach efficient decisions concerning emission reduction plans and Joint Implementation/Clean Development Mechanism (JI/CDM) projects. Objective 1 is met by an evaluation and comparison of system costs associated with alternative energy technologies, including social and environmental damage costs, thus changing the outdated perception that economic growth is necessarily at the expense of social standards and the environment. Objective 2 is met by evaluating alternative policy instruments to internalise environment-related externalities in the EU Member States and in selected non-EU countries and developing a set of recommendations on the use of policy instruments for the internalisation of external costs of energy production that reconcile economics with legitimate environmental and social concerns. Objective 3 is met through two stakeholder meetings that serve to validate and disseminate the projects outputs, and through a final conference presenting the results as well as through a variety of dissemination activities catering for different audiences. The success of the project will be judged in terms of the acceptability of the estimated energy costs by the scientific and policy communities and by the use made of these costs in a policy context.

The project runs from 01/04/2006 to 30/09/2008 and is coordinated by Prof. Anil Markandya of the Fondazione ENI Enrico Mattei in Milan, Italy. It mobilised 26 partners from the following countries: Belgium, Brazil, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, India, Italy, Lithuania, The Netherlands, Norway, Poland, Spain, Sweden, Switzerland, Turkey and UK.

www.feem-project.net/cases/

WAFLA – Integrated Water resource management by the implementation of improved Agro-Forestry concepts in arid and semiarid areas in Latin America

About one-quarter of Latin America is covered by dry-lands including the Pacific coast, the dry plains of the Andean mountains, the arid region extending to Patagonia and the dry areas of Mesoamerica. Desertification is the most challenging problem in these areas, resulting from the non-sustainable use of the natural resources, leading to a reduction of the productivity of ecosystems and agriculture, thus increasing the poverty of the inhabitants. In order to combat these problems of desertification and poverty, there is a need for a sustainable management of resources in an international scope which brings together agro-forestry approaches with an integrated water resource management (IWRM) while taking into account the integration of stakeholders in a multidisciplinary approach. The general objective of WAFLA is to coordinate a research, technological innovation and social and policy development activities, creating synergies to promote the adoption of IWRM and improved agro forestry systems in order to propose real solutions to combat the degradation of dry lands and to enhance rural development in Latin America.

Results so far comprise WAFLA country profiles with a thorough evaluation of water resource management practices in selected Latin American regions and documentation on agro-forestry practices. The main outcome of WAFLA will be the identification of management strategies and policy options for the promotion of region-adapted agro-forestry structures contained in Latin American Joint Arid Agro-forestry Management Guidelines based on the participatory management of agro-forestry modules, with the involvement of local communities.

The implementation strategies will be based on local conditions, involving: the identification of indigenous and adapted species with a market value and of corresponding technology packages for production of quality crops; the development of adaptable management practices for planting, irrigating, maintenance, harvesting and processing and the setting-up of an information network of markets for agro-forestry products to empower local producers and traders.

The WAFLA project runs from 01/10/2006 to 31/03/2009 and is coordinated by Mr. Mirko Haenel together with Ms. Leonellha Barreto of Verein zur Foerderung des Technologietransfers an der Hochschule Bremerhaven e.V. in Germany. The consortium is made up of 21 partners from the following European and Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, France, Germany, Mexico, The Netherlands, Nicaragua, Paraguay, Peru, Spain, UK, Venezuela.

www.wafla.com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For more information:

Information on the 7th Research Framework Programme (2007-2013):
http://cordis.europa.eu/fp7

International scientific and technological cooperation policy and action by the EU:
http://ec.europa.eu/research/iscp/index_en.html

Environment Research:
http://ec.europa.eu/research/environment/index_en.htm

International environment cooperation:
http://ec.europa.eu/europeaid/what/universal-issues/environment/index_en.htm

In addition, the following four South American countries are currently members of the Group on Earth Observations: Argentina, Brazil, Chile and Paraguay. From 1 January 2008, South America is represented on the GEO Executive Committee by Argentina. In addition, Brazil is a very active Co-Chair of the GEO Capacity Building Committee. In Central America the following countries are GEO members: Belize, Costa Rica, Honduras, Mexico, Panama. From 1 January 2008, Panama represents Central America on the GEO Executive Committee. For the time being, there are no Caribbean members as yet, but several groups from Latin America are actively involved in earth observation projects.

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