



DLO Research Programme International Cooperation Interdisciplinary research for sustainable development in the South

Report on activities in 2002

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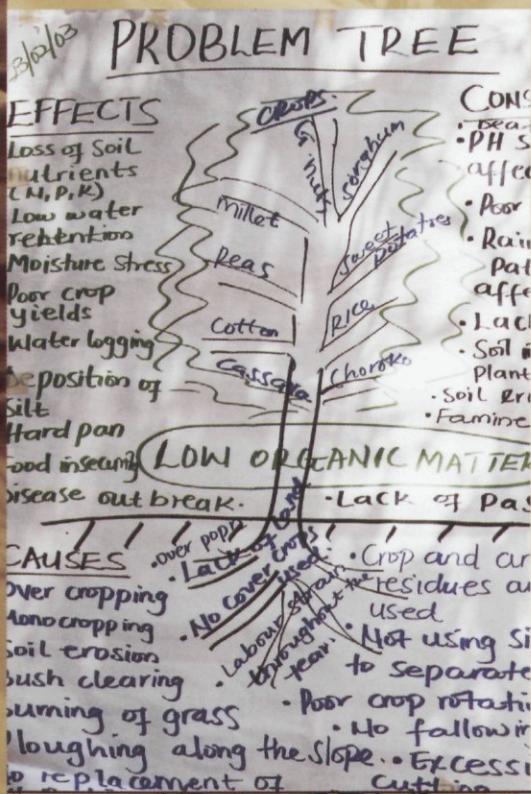
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Changing world

Global developments such as population growth and urbanisation, market liberalisation, changes in consumers concerns, and increasing rural and urban poverty confront 'low-income-countries' and 'emerging-market-economies' with major challenges in pursuing sustainable economic development. They require agricultural practices (in production systems and processing techniques as well as marketing) that live up to international standards in terms of food security, food safety and cost effectiveness. At the same time, increased agricultural production should take place with due consideration of environmental issues such as the sustainable use of the natural resource base and the conservation of nature and biodiversity.





The Research Programme

The DLO Research Programme International Co-operation (DLO-IC) aims at contributing to sustainable development and poverty reduction in the South through demand-driven applied research. The programme has a life span of 4 years (2002-2005) and is sponsored by the Netherlands Ministry of Agriculture, Nature Management and Fisheries (LVN). It receives co-funding from other national and international donors, such as the Netherlands Ministries of Foreign Affairs and Economic Affairs, the European Union and the Rockefeller Foundation. The programme has a total annual budget of about € 5 million. It is implemented jointly by the DLO research institutes of Wageningen University and Research Centre in close collaboration with research partners, NGO's, and the private sector in the South.



Programme objectives

- To generate and disseminate knowledge and to build research capacity in the South around topics addressing key issues in sustainable development;
- To contribute to enabling policies that facilitate the sustainable development of agricultural sectors and the integration of low-income countries and emerging economies in the world economy;
- To strengthen strategic partnerships among national and international knowledge centres (CGIAR), the private sector, development organisations, non-governmental organisations and policy makers.



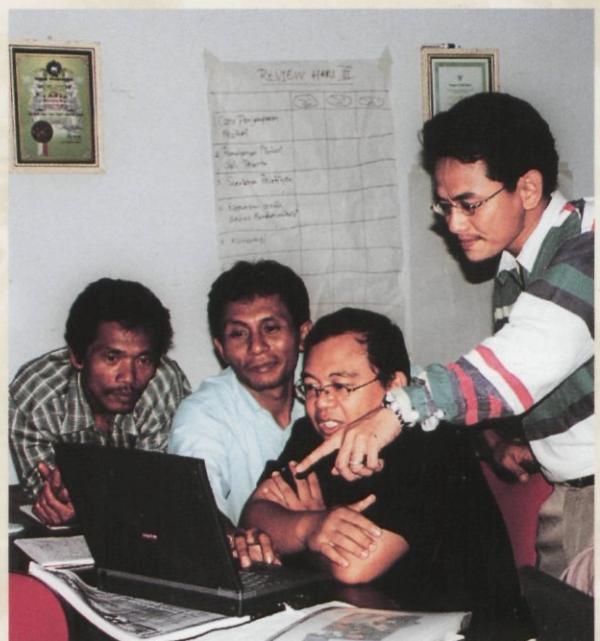
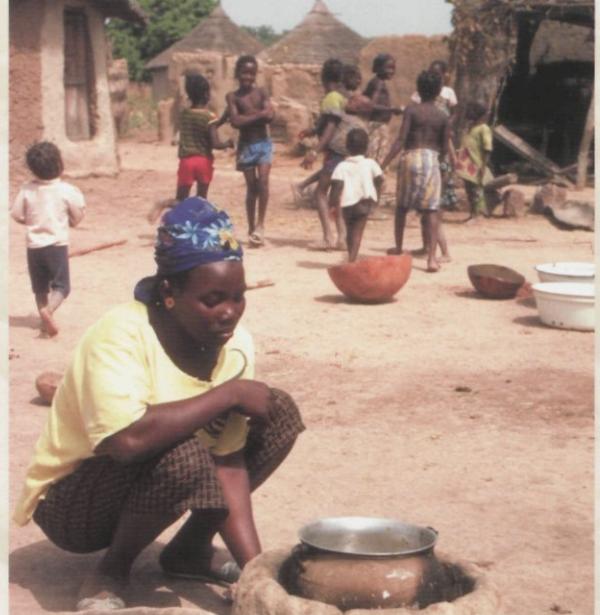
Research topics

The overarching topics are food safety, sustainable agriculture and environmental quality in peri-urban and rural areas, sustainable conservation and use of biodiversity and sustainable entrepreneurship.

These are elaborated in five research themes:

- Building competencies and regulating food quality and safety in global food chains;
- Sustainable agriculture and environmental quality in peri-urban and densely populated areas;
- Conservation and utilisation of agro-biodiversity;
- International nature management;
- Enabling policies for international agreements.

Interaction and complementarity between these themes forms a specific feature of the research. In particular, synergy is being sought by linking the ecological, economic and social aspects of sustainable development in the target regions West Africa, South/East Africa, China and Southeast Asia.





The year 2002

The work plan for 2002, the first year of the programme period, could build on experiences of earlier research programmes operated by Wageningen UR and its partners. It provided a 'flying start' for most research themes and projects. However, a number of new themes and new focal areas within existing themes have been identified and corresponding projects were initiated. For instance, within the themes 'Food quality and safety in global food chains' and 'Enabling policies for international agreements' a complete new programme of research activities was formulated.

This annual report presents a brief description of the achievements per theme. For each theme the activities and results of one project or a group of projects are highlighted. For a complete overview of the accomplishments and outputs per project in 2002, please visit our website (www.north-south.nl) and the individual project webpages.



Theme 1

Building competencies and regulating food quality and safety in global food chains



This theme seeks to assemble private and public parties involved in food provision for consumers in Northern and Southern countries and to develop promising initiatives for the creation of safe and sustainable food chains. The research activities focus on organisation and design of global sourcing and how this relates to local conditions and capabilities.





Objectives

Research and capacity building for:

- Good agricultural practices and sustainability
- Supply chain management and food processing
- Certification and regulation in international trade

In 2002 concepts for the research programme in the coming years were developed, based upon a review of past and ongoing research work and experiences gathered in a number of pilot projects. These concepts and developed frameworks were compiled in a book titled 'Collaboration and competence in global food chains: international perspectives on food safety and quality', which will be published mid 2003.

Key is that increasing requirements regarding food safety and the sustainability of the entire production process confront especially smallholder farmers in the South with a number of challenges. More than ever the international food industry is looking for appropriate modes of organisation of the food chain. Examples of those modes include contract farming, plantation models and farmer associations. These require the development of new business models that include mechanisms for control and enforcement, while maintaining the participation of small holders in commercial (export) farming. Various issues are addressed such as institutional development, learning from successful new business developments and inclusion of Corporate Social Responsiveness and People-Profit-Planet programmes.

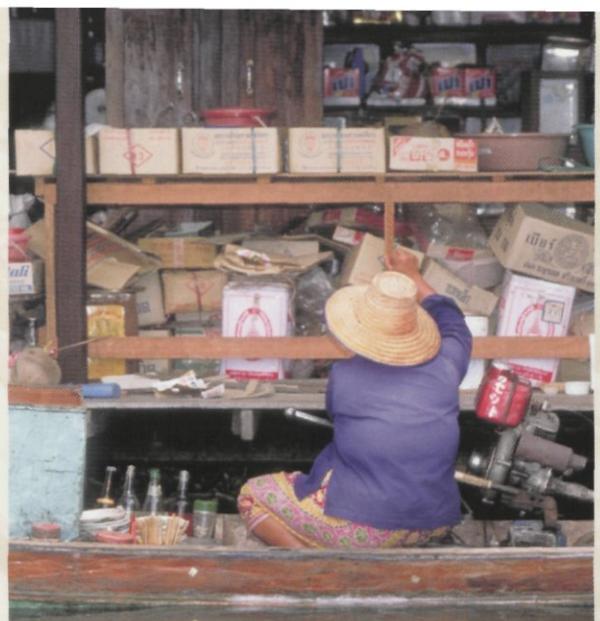


• Projects

- Developing guidelines for country assessment and formulation of action plans on food safety in developing countries (South Africa)
- Sustainable coffee production (Vietnam)
- Supply chains between North and South for niche markets in coffee (Brazil)
- Three case studies of outsourcing fresh fruits and vegetables in Southeast Asia (Thailand, India, Philippines)
- International perspectives on food quality and food safety in global food chains
- Agro-business development and technology transfer in support of regional value-adding supply chains (South Africa)

As a result, three research areas have been identified for 2003-2004:

- Sustainability of international coffee chains (Brazil and Vietnam)
- Global sourcing and food safety of perishable products from South-East Asia
- Regional Development Centres and domestic markets in Southern Africa and South Asia



Matching quality assurance and vertical integration

Case studies of outsourcing fresh fruits and vegetables in South-East Asia; The case of Thailand

Dave Boselie, LEI

Problems in the chain

Horticultural production in South-East Asia is a breeding ground for innovative institutional measures in sourcing fresh produce. This project explored experiences with supply chain management (both export markets and domestic markets) in fresh vegetables in Thailand. The project focused on decisions about the organisation of production schemes, the distribution of tasks and capabilities in global sourcing, and the interaction between Western retailers or shippers. Since consumer concerns about food safety of fresh produce have put an enormous pressure upon the food and retail industry to improve farming practices and to arrange transparency in the supply chain and local producers, the importance of quality assurance in the supply chain was addressed.

Cases

Experiences from two business cases in the vegetable industry, the TOPS Thailand project and the Thai Fresh project, have been explored. The business cases included the lessons learned with the design and implementation of grades, standards and certification. Information and primary data from the above projects, in combination with desk research (literature, project documents), served as major input for this project.

Conclusions

- Food safety assurance is a leading driving force in the development of grades and standards, which define the specifications of products and set the rules of the game for the overall production process
- Changes in the grades, standards and certification practices have tended to exclude small firms and farms from participating in market growth, because of the implied investments; but preferred supplier programmes and the creation of local value added centres with appropriate contract farming systems have demonstrated the possibility to include small scale operations in modern horticultural farming
- The nature of the grades and standards is shifting from performance to process standards
- The Thai export sector is implementing private grades, standards, private certification and labelling according to the requirements of their end-markets in Europe or Japan
- Medium and large enterprises that serve the domestic market try to lift government induced grades, standards and certification schemes to schemes similar to those in export markets in developed regions
- Cooperation between seed companies and professional growers appears to be a good formula for introduction of Good Agricultural Practices, and also a good starting point for chain integration



Sustainable agriculture and environmental quality in peri-urban and densely populated areas



Growing populations and rapid urban expansion lead to conversion of agricultural land for infrastructural, housing, commercial and industrial uses. Concurrently, the cities' expansion calls for increased food production to feed the growing populations while these centres in their turn produce ever-greater amounts of urban waste. This theme addresses the dynamics of multi-sector resource use and related environmental challenges in peri-urban and densely populated rural areas.



Objectives

- To develop intensive and sustainable crop, livestock and mixed agricultural systems in peri-urban and densely populated rural areas
- To study the effect of farmers' decisions on the environment
- To explore alternative options for sustainable land use and rural development
- To formulate policy measures, at various scales of implementation, that facilitate adoption of sustainable land use systems

Output of all the research projects implemented in 2002 combines quality scientific results with practical impact at field and policy level. This was achieved mainly through successfully engaging the different stakeholders in communication platforms in order to build shared commitment. Also, research results were disseminated through various media and forms adapted to the target groups.

Most of the activities are multi-annual projects, of which some were started during the previous research programme. Two projects were completed in 2002 harvesting the fruits of the past years in a wealth of highly respected international scientific publications such as special journal issues and

books on soil erosion and economic policy research.

Six projects are dealing with natural resource management issues in Asia, West and East Africa including plant protection, nutrient management, soil and water conservation. In these projects, research approaches are linked with social learning and participatory planning techniques and policy design at different decision levels. Output realised includes:

- Establishment of stakeholder platforms for social learning/land use planning at different levels
- Scientist-stakeholder consultations on problem definition for the various case studies, and planning workshops
- Starting up institutional development and capacity building through training workshops and hands-on training in new methods and techniques
- Carrying out (farm) surveys and analysis for describing hot spots of NRM problems
- Establishing (GIS-linked) databases on natural resources and resource constraints, production levels and technologies and socio-economic characteristics
- Presenting research approaches and preliminary results to local stakeholders and (international) scientific audiences



• Projects

- An interdisciplinary approach to reduce water, soil and nutrient losses caused by erosion (China) www.erochinut.alterra.nl
- An interdisciplinary approach to analyse the dynamics of forest and soil degradation (India, Pakistan, Nepal)
- Development of an improved method for soil and water conservation planning (Kenya, Tanzania) www.eroahi.alterra.nl
- Economic policy reforms, agricultural incentives and soil degradation (Kenya, China) www.sls.wau.nl/oe/episode
- Development of appropriate Integrated Nutrient Management Strategies (Kenya)
- Policies for sustainable land management (Ethiopia)
- Farmers Field Schools for Integrated Nutrient Management (Kenya, Uganda, Ethiopia) www.inmasp.nl
- Systems research for integrated resource management and land use analysis (China, Vietnam, Philippines) www.irmla.alterra.nl
- Sustainable technologies for pest, disease and soil fertility management in smallholder vegetable production (China, Vietnam) www.lei.dlo.nl/vegssy
- Impact of changing land cover on the production and ecological functions of inland valleys (Ghana, Burkina Faso)
- Resource management options for the Greater Beijing area (China)
- Sustainable smallholder agricultural production in peri-urban and densely populated rural areas (South Africa, Zambia)

Three projects have a focus on sustainable resource management in intensive production systems around urban centres such as Beijing and Hanoi. These are new projects that have just completed their planning and design phase and commenced field-work activities as planned.



Soil fertility decline threatens livelihoods in East Africa

Rik van den Bosch, Alterra; Siebe van Wijk, Gerdien Meijerink, Andre de Jager, LEI

Soil fertility degradation in East Africa

Soil nutrient depletion is one of the major constraints to food security and economic development in rural areas of Sub-Saharan Africa. Inherently low soil nutrient stocks paired with negative nutrient balances in many agricultural production systems further aggravate the fragile soil conditions and threaten the long-term productivity base and therefore the livelihood of large groups of rural households.

Activities

Five related projects address various key issues of this complex problem and engage in activities such as:

- The development of methods for participatory catchment scale soil and water conservation planning
- Addressing the impacts of economic policy reforms on soil degradation and livelihood of rural families
- Participatory development of integrated nutrient management technologies and facilitating policies to address soil fertility degradation
- Assisting policy makers in identifying and assessing strategies for sustainable land management

The activities are implemented in project consortia with research partners in 4 European and 4 African countries (Ethiopia, Kenya, Tanzania and Uganda) including NARS, Universities, Ministries, NGO and CGIAR institutes.

Results in 2002

An overview of some of the most important results realised in 2002:

- For all areas a thorough quantitative and highly participative analysis of the soil fertility degradation and soil and water erosion problems has been conducted, supplying key information for intervention strategies in the region
- A series of models was developed, fine-tuned and implemented to assess soil fertility problems, simulate impacts of technological innovations and assess impacts of policy instruments and measures on soil fertility management and rural livelihood
- Various types of stakeholder platforms, farmer field schools and policy makers workshops were organised to develop technical and policy strategies and monitoring progress in the activities of various projects
- African partners were trained in various technical aspects, including formal MSc and PhD training
- Research partners participated in regional and international scientific and policy meetings



Theme 3

Conservation and utilisation of agro-biodiversity



Biodiversity, the variety of ecosystems, species and genes, provides the raw materials, goods and services we need to live, work, produce and consume. Management and sustainable use of biodiversity are relatively new policy areas. Limited data is available about the loss of biodiversity and its consequences for humans and their environment. This theme attempts to address some of the existing knowledge gaps.





Objectives

- To increase knowledge on the nature and function of agro-biodiversity and genetic resources in tropical production systems
- To develop options to strengthen local management of biodiversity and to strengthen markets for products derived from current local diversity

A number of Asian countries (India, Bangladesh, Pakistan, Nepal, Bhutan, Indonesia, Philippines, China, Vietnam) were supported, in close collaboration with FAO, in an inventory of and strategy development for its animal genetic resources.

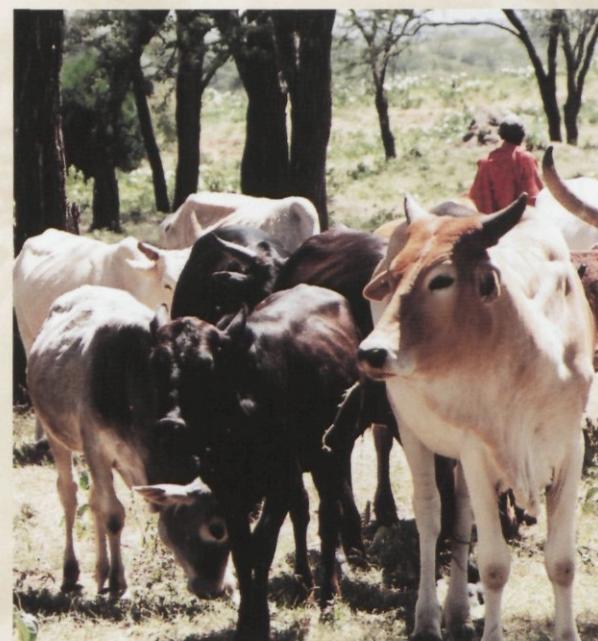
However, the main part of the theme dealt with the start of PEDIGREA (Participatory Enhancement of Diversity of Genetic Resources in Asia). The project deals with participatory breeding to improve local rice varieties, and with improving the diversity in traditional indigenous vegetables. The project makes use of the experiences obtained with Farmer Field Schools, in which farmers are trained to train their fellows in the communities, in which local staff is involved with many years of participatory experiences.



• Projects

- Participatory Enhancement of Diversity of Genetic Resources in Asia (Indonesia, Cambodia, Philippines)
- Contribution to the State of the World on Animal Genetic Resources (India, Pakistan, Bangladesh)
- Research and expertise network on conservation and management of animal genetic resources
- Institutional development support for the National Biodiversity Centre of Bhutan
- The effect of globalization in trade and consumption patterns on agro-biodiversity

One project explored cases showing the opportunities to build a positive relationship between trade and agro-biodiversity and produced a first report titled: 'Marketing Diversity: Agricultural Biodiversity in the Supply Chain'.



PEDIGREA

Participatory Enhancement of Diversity of Genetic Resources in Asia

Bert Visser, Plant Research International

Genetic erosion: a growing problem

Worldwide, crop diversity is decreasing dramatically. This decrease is caused by the intensification of agricultural production and the impact of professional breeding, by the globalisation of markets, and by habitat destruction. This 'genetic erosion' involves the loss of diversity within some major cash and staple crops, as well as the gradual disappearance of marginalized indigenous crops from our diet.

Participatory management of genetic resources

The PEDIGRA project uses the experience obtained with Farmer Field Schools, in which farmers are trained to train their fellows in the communities. Local staff with many years of participatory experiences are engaged to implement this approach. In both Indonesia and Cambodia two communities have been selected to develop and improve local crop diversity. Access to genetic resources is sought to improve the local diversity. The projects have a technical as well as an economic dimension. Local improvement is only considered sustainable if markets for traditional diversity can be created and/or strengthened.

A first start in 2002

A Training of the Trainers, and a full Farmer Field School was run in each of the four communities in Indonesia and

Cambodia. A Farmer Field School manual incorporates a component on indigenous vegetables. Farmers made an inventory of the varieties available in the community. Farmers also prioritised the crops they most wished to improve. These included various cucurbits (pumpkins, gourds), leafy vegetables, pepper and tomato. In each community farmers identified approximately a hundred different vegetables. They also indicated which of these crops were grown for home consumption or for the urban markets. For some of these crops commercial varieties are readily available, whereas others have been relatively neglected in breeding programmes. Parallel with the Farmer Field Schools, baseline studies were undertaken to track the availability of external genetic resources, explore ongoing breeding efforts, and discuss options for strengthening urban markets for indigenous diversity.

In the coming year additional genetic resources to improve the prioritized vegetable crops and rice varieties shall be accessed. Farmer Field Schools will focus on the introduction and testing of this additional diversity. Further economic research will have to explore options to extend current markets. The project will provide new insights in ways by which, with limited financial resources and in cooperation with the public sector, interest in local crop diversity can be regained and strengthened in a growing number of communities.



International Nature Management

The policy on nature of the Netherlands' Government finds its base in a broad international context, since our nature forms part of a complex and dynamic international system. The Netherlands acknowledges its shared responsibility for the state of the global environment and for the sustainable management of natural resources. The Netherlands Ministry of Agriculture, Nature Management and Fisheries focuses, among others through the activities in this theme, on the preservation and strengthening of ecosystems, species and genetic material. Focal areas are international flyways, biodiversity and forests and policy issues.



Objectives

- Through international cooperation strive to structurally reverse the negative development of the global loss of biodiversity
- Contribute to the protection of ecosystems and landscapes of international value
- Effectuate conservation of biodiversity in the developments of various sectors of the economy

The Antarctic marine birds and ecosystems work is a long-term study on Antarctic marine top predators (birds and mammals) aiming better modelling of the importance of sea-ice systems in terms of biodiversity and climate-change issues. It includes a food web study to clarify the importance of the sea-ice biotope to the Antarctic ecosystem. Particular attention is paid to the role of krill and other plankton in feeding the larger arctic animals.

The research on *Flyways of migratory water birds* concerns the conservation of the East Atlantic Flyway that runs from northern Siberia to the southern tip of Africa and responds to Netherlands commitments in relation to 3 international bird conventions. The main activities in 2002 included an expedition to the

Willem Barentz Biological Station in Russia to study the breeding biology of shorebirds that reproduce in the Russian tundra's and winter in Europe, Africa and Asia. The co-ordination activities in the Goose Specialist Group of Wetlands International were continued and a number of meetings organised. All of the major wintering and spring staging sites used by these geese in the Netherlands were identified. The output of the work on the Wader and Goose database is among others used to determine criteria for wetlands to qualify for a protected status under the Ramsar Convention of Wetlands. The activities in the inner Niger delta in Mali concentrated on stakeholders consultation in and around the waterbird sites in order to build a sound basis for the further management planning process.

The work on *Biodiversity and forests* focuses on tropical (peat swamp) forests in Kalimantan/Borneo which are very important carbon sinks. The Strapeat project activities in 2002 included progress and training workshops, field visits, desk studies focusing on aspects of sustainable management. Main activities of other peat swamp projects were studies on the impact of logging practices on vegetation structure, biodiversity and production of non-timber forest products and climatic change effects on important species. In Mt. Malindang National Park in the



• Projects

- Antarctic marine birds and ecosystems (Antarctica)
- Flyways of migratory water birds (Europe, Mali)
 - Co-ordination of the Wetlands International Goose Specialist Group www.wetlands.org/networks/goose/goose.htm
 - Maintaining migratory coastal bird diversity <http://dorset.ceh.ac.uk/coastbird>
 - Maintenance of a goose and wader database
 - Modelling of migration strategies of waterbirds along flyways www.nioo.knaw.nl/dynamig
 - Management planning for key waterbird sites in the Inner Niger Delta, Mali

Philippines, policy studies aim to safeguard the integrity of the park while simultaneously increasing the income opportunities of the communities living in its marine and terrestrial environments. In another project a landscape level decision support tool is developed that provides information on overall carbon budgets and on carbon sequestration or emission associated with various land-use change processes such as afforestation and deforestation

Biodiversity and forests

- Development of guidelines for the sustainable use of coastal peat zones in Sarawak (Malaysia, Indonesia)
www.strapeat.alterra.nl
- Modelling carbon sequestration in forested landscapes (global)
www.efi.fi/projects/casfor
- Peat swamp forests in Sarawak (Malaysia, Indonesia)
- Biodiversity research for development in the Mount Malindang area (Philippines)
- Scientific support to policy development in the Netherlands in the area of conservation and sustainable development of ecosystems and landscapes of international importance (global)

Research providing *scientific support to policy developments in the Netherlands* in the area of conservation and sustainable development of ecosystems and landscapes of international importance commenced in 2002. It included desk studies on current Dutch policy, and interviews with relevant executives in the Netherlands, Poland, the Czech Republic and France. Furthermore, a database structure was developed and a first analysis performed of the European vascular plants.



Modelling carbon sequestration in forested landscapes

Gert Jan Nabuurs, Alterra

Uncertainty in sequestration potentials

Carbon sequestration is increasingly being considered as an integral function of rural areas. Since the Kyoto agreement of 1997 industrial countries are allowed to fulfil their emission reduction commitment through land use projects in the tropics (Clean Development Mechanism, CDM). Large uncertainties exist however about sequestration potentials and side effects, and this requires development of reliable tools to monitor and analyse carbon sinks at the landscape level.

The CO2Fix model

For this particular purpose, a landscape level decision support tool has been developed that provides information on overall carbon budgets and on carbon sequestration or emission associated with various land-use change processes such as afforestation and deforestation. The model is being extended with carbon substitution management through bio-energy use, as well as with basic economic evaluations of carbon sequestration projects. The project is implemented by Expertise Group Environmental Sciences of Wageningen University in collaboration with Centro Agronómico Tropical de Investigación y Enseñanza in Costa Rica.

Achievements

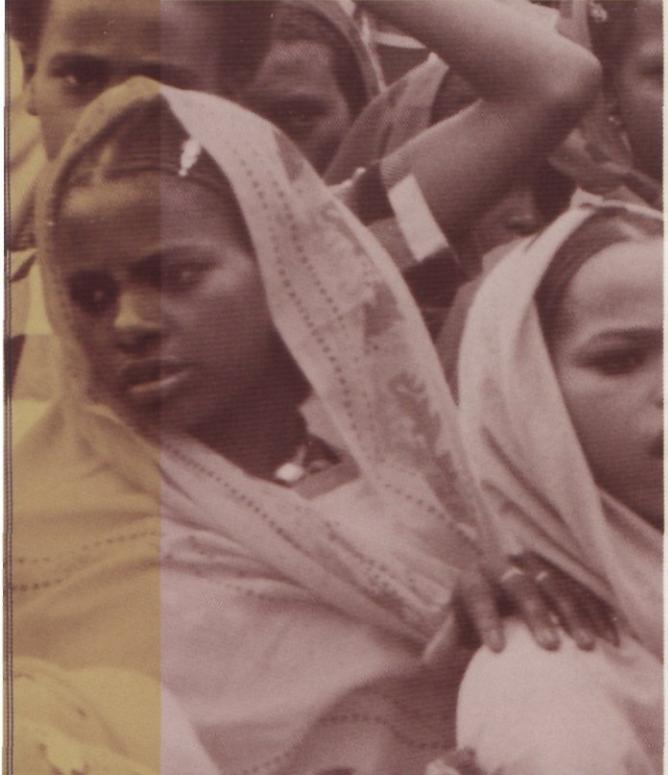
In 2002 some of the model extensions were realised, such as linkages to GIS application, a carbon accounting module and a financial module. The model has been widely disseminated, among others through internet and a leaflet. Since the release of the first version in 1999 the model has been downloaded by 1100 registered users in 65 countries worldwide. Mainly researchers and students with some basic understanding of forest dynamics, the carbon cycle and access to growth data have been using the model to provide policy makers with basic information on policy options relating to the Kyoto protocol. Training courses were given at graduate and professional level in Wageningen and Costa Rica.





Theme 5

Enabling policies for international agreements



Activities in this theme aim at providing scientific support for the development of the international policy agenda of the ministry of Agriculture, Nature Management and Fisheries (LNV). Special attention is being given to policy matters regarding international agreements and organisations and the related south-north policy dialogue.





Objectives

- Conduct research concerning North-South aspects of policy issues of the international policy agenda of LNV
- Support the dialogue between policy makers of the North and South

The year 2002 saw a concentrated effort to work on food security issues (with FAO), global trade (WTO), genetic resources, intellectual property and genetic modification (FAO and CBD). Several policy

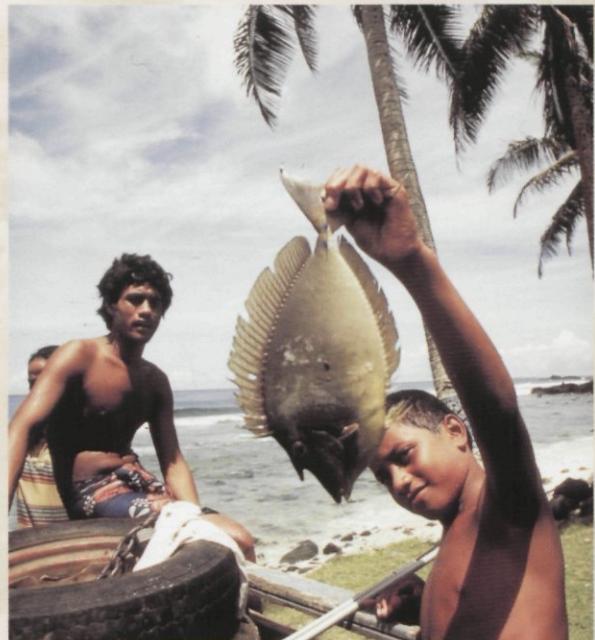
briefs were issued, and a number of meetings were organised at LNV on the results of these projects e.g. on international trade aspects and on pesticide residues in fresh food exports from low income countries in the South.

Activities under this theme also included, on request of LNV, the participation in international policy fora (e.g. on benefit sharing on genetic resources) and contributions to national discussions on policy issues (such as the World Food Day). Finally, the work on intellectual property and biosafety led to a cooperation agreement with the International Service for National Agricultural Research of CGIAR.



Projects

- Food Insecurity and Vulnerability Information and Mapping Systems
- Agricultural trade policy and developing countries
- Analytical framework for the introduction of breeders' rights in developing countries
- Biosafety files www.biosafety.nl
- Analysis of the relevance of access and benefit sharing for farm animal genetic resources
- Consumer acceptability and prospects for non-food GM crops: Bt cotton
- Genetic enrichment of foods in developing countries: arguments and evidence



Policy brief

Transgenes in Mexican maize landraces; an analysis of data and potential impact

Niels Louwaars, Plant Research International

The case

On November 29, 2001, the scientific journal *Nature* reported "the presence of introgressed transgenic DNA constructs in native maize landraces grown in remote mountains in Oaxaca, Mexico". The paper attracted a lot of attention, particularly because Oaxaca is located in the primary centre of diversity of maize and its wild ancestor, teosinte. The substantial genetic diversity in this Mexican region is a major source for maize breeding. The results were taken to indicate that transgenes may have spread into the Oaxaca area and that this will influence the genetic composition of valuable genetic resources.

The debate

According to NGOs, transgenes would lead to loss of an essential source of biodiversity. Local farmers were reported to be worried about the health of their children, and it was claimed that gene banks in the region were contaminated. This spread - scientifically referred to as 'introgression' - will be as likely for any maize genes from modern varieties or hybrids as for transgenes now present in commercial maize. It would particularly affect the genebank of CIMMYT, the International Centre for Maize and Wheat Research, which maintains the world's most important maize collection. Environmentalists are demanding far-reaching actions such as a global moratorium on transgenic crops in general. The *Nature* publication also generated severe

criticism from other scientists. An independent, secondary technology to confirm the results is considered to be the minimum requirement for valid scientific conclusions about the actual occurrence of introgression into the maize landraces.

Analysis: impact on biodiversity

In our opinion, there will be no automatic loss of maize biodiversity as a consequence of the introgression of the transgenes currently used in commercialised maize in its centre of origin. It is highly unlikely that these transgenes will give sufficient selective advantage to outcompete the plant material already present in such centres of origin. No original plant material will disappear at all, since the 'new' genes will evenly spread in the diverse populations through natural cross breeding (in effect a random introgression process). This plant material will therefore remain available for further breeding and other uses. It should, however, be pointed out clearly that genetic diversity in maize in this important centre of diversity is indeed threatened. A much greater danger to genetic diversity is the spread of modern agriculture in Mexico. These systems use genetically narrow populations of uniform hybrids and restrict the active maintenance and use of traditional and potentially valuable local landraces to remote and more marginal areas. Transgenic introgression in local varieties may however have consequences that do not relate to biodiversity such as implications on integrity of the crop, intellectual property and trade issues and possibly food safety issues.



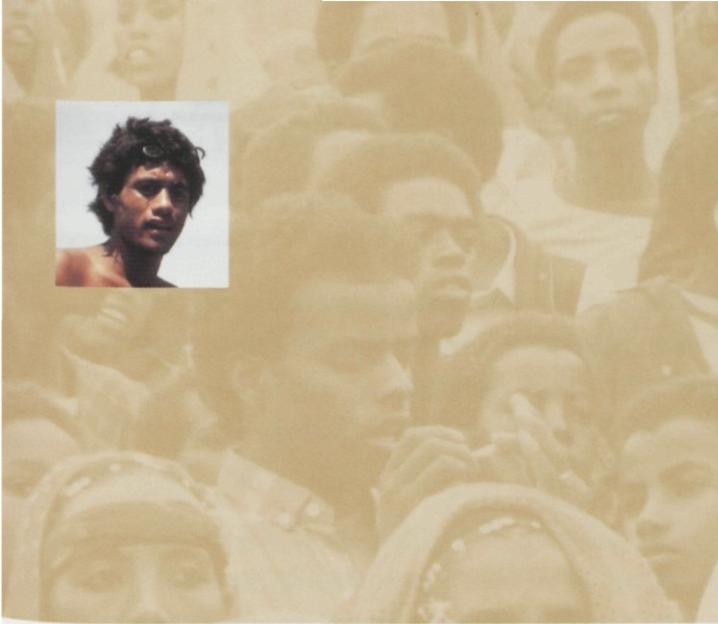
Other activities



During the year 2002, LNV identified a number of topics requiring short-term research activities. These activities encompassed preparations for international conferences, preparation of policy briefs or organisation of workshops. In 2002 the following activities were undertaken:

- Formulation of policy paper for LNV in preparation for the World Summit on Sustainable Development
- Workshop on identification of research needs in agricultural production in Suriname
- Paper on the legislative and institutional framework of food and safety control in live animals in China
- Identifying priority areas for policy recommendations in poverty alleviation and food security in the framework activities of Poverty Reduction Strategy Papers
- Workshop on water as economic good: assessment of knowledge and knowledge gaps in water economics
- Identification mission to support the fisheries sector in Iran
- Study on impacts of EU pesticide legislation on fresh food trade between Africa and the EU





Four EU co-financed projects, initiated during the previous programme and not fitting in the major research themes, continued activities in 2002:

- Genetic improvement of maize to enhance food safety by introducing resistance to *Fusarium moniliforme* (South Africa, Zambia)

www.up.ac.za/academic/botany/foodsafet.html

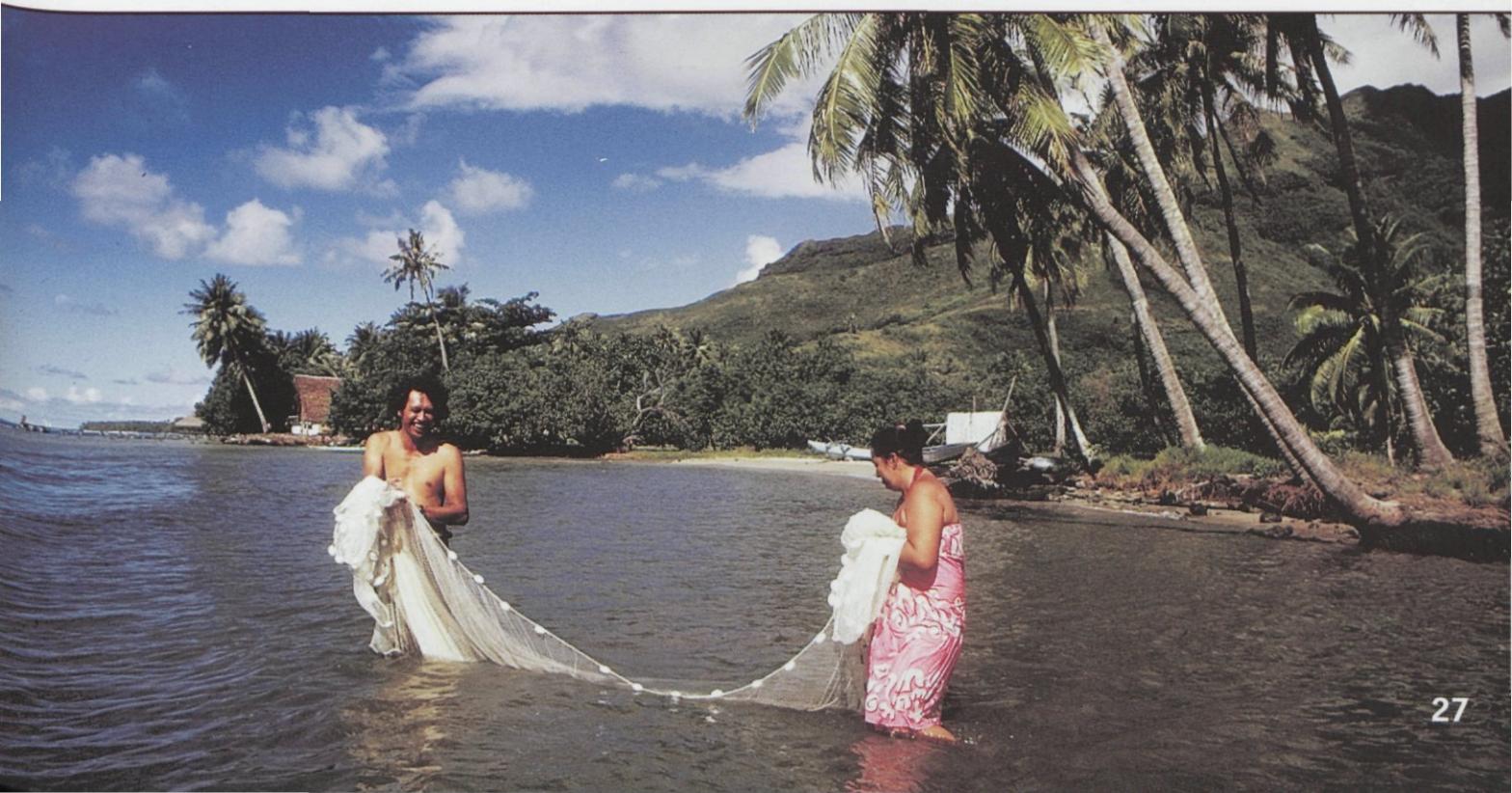
- Improved Striga Control in Maize and Sorghum (Mali, Burkina Faso, Nigeria)

www.plant.wageningen-ur.nl/projects/striga

- Improving the Quality and Utilisation of Low-Value Fish by Processing (Ghana, Namibia, Kenya, India, Malaysia)

- Managing Agrochemicals in Multi-Use Aquatic Systems (Sri Lanka, Thailand)

Researchers contributed regularly to the mid-carrier courses offered by the International Agricultural Centre. In 2002 participation was realised in a variety of training programmes such as interactive policy making and rural development, participatory planning and monitoring and Integrated Pest Management.



Impacts of EU pesticide legislation on fresh food trade between Africa and the EU

Andre de Jager, LEI

Market access

In policy debates it was stated that the currently implemented increased food safety requirements in EU affect market access of developing countries negatively. The Dutch Ministries of Agriculture, Nature Management and Fisheries and International Affairs wanted to verify this statement and wanted to explore what possibilities exist for targeted support to developing countries to address this constraint.

Activities

A multi-disciplinary team of Wageningen UR made a review of countries and products affected by new Maximum Residu Limits (MRL's) and identified the most relevant agricultural sectors in these countries based upon existing databases and literature. Jointly with partners in the countries, discussions and workshops in three case study countries (Ethiopia, Ghana and Zambia) were organised to identify constraints and possible solutions and formulate concrete implementation plans to be followed up by the two Dutch Ministries concerned.

Conclusions

- Increased market access to EU can contribute to economic development in specific countries and sectors

- Domestic policies, public infrastructure and position and organisation of private sector largely determine chances on the EU market
- Increased market access has very limited direct impact on smallholder farmers (majority of stakeholders in agricultural sector in Africa)
- Coordinated technical and financial support from EU through public-private joint ventures are required to enable African countries to comply with EU market requirements
- Coherence in EU trade and development policies are required for a long-term participation of African countries in agricultural trade with the EU

Recommendations

- Establishment of accredited laboratory facilities
- Implementation of Integrated Pest Management Programme
- Facilitating an efficient information flow
- Establishment of Horticultural Development Unit (Ethiopia) /National Food Safety framework (Ghana)
- Training and education at higher and farm management level
- Agricultural export development programme for smallholders
- Financial and technical support to the Liaison Committee Europe, Africa, Caribbean, Pacific (COLEACP)

Communication and management

The programme experimented with various models for involvement of LNV and other stakeholders in the field of international cooperation. The regular meetings with the steering committee were combined with those of two other programmes, with a view to linking research and capacity building for development. LNV assigned contact persons for each research theme, a system which will be evaluated early 2003. Furthermore, the programme initiated a series of 'lunch-meetings' for LNV-staff and interested professionals from outside to discuss ongoing projects and their results (e.g. on international trade agreements and development, and on pesticide residue levels and development). Finally, a start has been made with the production of policy-briefs that present relevant research results in a compact style for a wide range of users.

The structure of the programme with programme management, theme coordinators, and project leaders secures a clear division of responsibilities for scientific quality and coherence in each

research theme. In the course of 2002 coherence at programme level was identified as an issue that requires further work. A plan to develop a number of projects that combine the key competences from the different themes was prepared for implementation. Results should be generated by 2004. The programme has put much emphasis on interdisciplinary work in its projects. This secures the cooperation among different research groups within Wageningen UR, such as the Interdisciplinary Research and Education Fund (INREF) and with counterparts in developing countries. This approach, and its problem driven focus, has attracted a growing interest from the institutes for applied research (PPO and PV) to involve their researchers in this programme. In addition links were established with the training and advisory centres IAC and ILRI concerning research activities and capacity building.



List of selected outputs

Books

Agarwal, P.K., Roetter, R.P., Kalra, N., Van Keulen, H., Hoanh, C.T., Van Laar, H.H., 2002. Land use analysis and planning for sustainable food security: with an illustration for the state of Haryana, India. New Delhi, ICAR; Los Banos, IRRI & Wageningen UR, 167 p.

Boselie, D. and Velema, S. (Eds). Collaboration and competence in global food chains: international perspectives on food safety and quality (published 2003)

Louwaars, N.P. (ed) 2002. Seed Policy, Legislation and Law: widening a narrow focus. Binghamton NY, Food Products Press (The Haworth Press Inc.) 260 p..

Heerink, N., Van Keulen, H. and Kuiper, M. (Eds), 2001. Economic policy and sustainable land use, Springer-Verlag, Heidelberg

Scientific articles / special issues scientific journals

Ebbing, B.S., Heesterbeek, J.A.P., Ens, B.J., Goedhart, P.W., 2002. Density dependent population limitation in dark-bellied brent geese *Branta b. bernicla*. Avian Science Vol.2: 63-75.

Onduru, D.D., Diop, J.M., Van der Werf, E., and De Jager, A., 2002. Participatory on-farm comparative assessment of organic and conventional farmers' practices in Kenya. Biological Agriculture and Horticulture 19 pp. 295-314

Smaling, E.M.A., Stoorvogel, J.J., de Jager, A., 2002. Decision making on integrated nutrient management through the eyes of the scientist, the land user and the policy maker. In: Van Lauwe, B. et al. (Eds.) Integrated Plant Nutrient Management in Sub-Saharan Africa, CABI

Van Franeker, J.A.; Van den Brink, N.W.; Bathmann, U.V., Pollard, R.T., de Baar, H.J.W., Wolff, W.J., 2002. Responses of seabirds, in particular prions (*Pachyptila* sp.), to small scale processes in the Antarctic Polar Front. Deep Sea Research II 49: 3931-3950.

Van Franeker, J.A. 2002. Marine birds and seals around the Marguerite Bay and Bellingshausen Sea areas. Berichte zur Polar- und Meeresforschung 407: 76-82.

Van Tongeren, F., Van Meijl, H., Surry, H., 2001. Global models of trade in agriculture: a review and assessment, Agricultural Economics. Vol 26/2 : pp 149-172.

Policy briefs / popular publications

Andriesse, W. (ed.) 2002. Poverty alleviation, food security and rural development: new impetus against unruly problems. Wageningen-UR/North South Center Issue Paper, 13p.

Eaton, D., D. van Tongeren, N. Louwaars, B. Visser, I. van der Meer, 2002. Economic and policy aspects of 'terminator' technology, Biotechnology and Development Monitor, No. 49, March, pp. 19-22.

Gachimbi, L.N., De Jager, A., Van Keulen, H., Thurairaj, E.G., Nandwa, S.M., 2002. Participatory diagnosis of soil nutrient depletion in semi-arid areas of Kenya. Managing Africa's Soil No.26, IIED, UK

Louwaars, N., Brandenburg, W., Gilissen, L., Kleter, G., Wagenaar, J., 2002. The Biosafety Files, a new link in biosafety information. Biotechnology and Development Monitor 49: 4-6

Gilissen, N., Haanstra, L., Delany, S., Boere, G., Hagemeijer, W., 2002 Numbers and ditrisbution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1997, 1998 and 1999. Results from the International Waterbird Census. *Wetlands International Global Series No.11*, Wageningen, The Netherlands.

Wetlands International. 2002. Waterbird Population Estimates – Third Edition. *Wetlands International Global Series No.12*, Wageningen, The Netherlands.

International presentations

Bouwmeester, H.J., 2002. Secondary metabolites in the signalling between parasitic weeds and host plants. Presentation Combined Meeting COST Action 849, Parasitic Plant Management in Sustainable Agriculture, 14-15 March, Sofia, Bulgaria

Njuguna, E.M., Heerink, N., Van Wijk, M.S., 2002. Structural adjustment and the Economic environment of farmers in Machakos District. Paper presented during the KARI bi-annual conference in Nairobi, April 2002.

De Jager, A., Onduru, D., Walaga, C., 2002. Facilitated learning in soil fertility management; assessing potentials of low-external input technologies in East African farming systems. 17th Symposium of International Farming Systems Association, Orlando, USA

Riley, J.O. and Page, S.E., 2002. Proceedings of the International Symposium on Tropical Peatland: Peatlands for People, Natural Resource Functions and Sustainable Management. 272 pp.

Partners and implementing institutes

Theme 1 Building competencies and regulating food quality and safety in global food chains

Wageningen UR: ATO, LEI, RIKILT, Plant Research International, IAC, IMAG ID-Lelystad

World Bank, FAO Investment Centre, Michigan State University, Max Havelaar Foundation, Rabobank Foundation, EMBRAPA (Brazil), University of Sao Paulo (Brazil), Associação de Cafeicultura Orgânica do Brasil (Brazil), Kasetsart University, Chiang Mai Agricultural University, Agricultural and Processed Food Products Exports Development Authority (India), ARC (South Africa), GART (Zambia)

Theme 2 Sustainable agriculture and environmental quality in peri-urban and densely populated areas

Wageningen UR: Alterra, Plant Research International, LEI, ID, IMAG, PPO, PV

Swedish University of Agricultural Sciences (Sweden), International Institute of Environment and Development (UK), Soil and Fertilizer Institute (China), Institute of Soil and Water Conservation (China), Institute of Soil Science (China), IFPRI (USA), Mekelle University (Ethiopia), African Highlands Initiative (Kenya), Kenyan Agricultural Research Institute (Kenya), Agricultural Research Institute (Tanzania), The Regional Land Management Unit (Kenya), Agricultural University of Norway (Norway), Awassa College of Agriculture (Ethiopia), Nanjing Agricultural University (China), University of Wales Swansea (UK), Forest Research Institute (India), International Center for Integrated Mountain Development (Nepal), Pakistan Forest Institute (Pakistan), NAGREF (Greece), SoS Sahel (Ethiopia), ETC-EA (Kenya), Environmental Alert (Uganda), Makerere University (Uganda), Zhejiang University (China), NISF (Vietnam), MMSU (Philippines), Fraunhofer Institut (Germany), Soil and Fertiliser Institute (China), Sichuan Agricultural University (China), University of Hannover (Germany), Consejo Superior de Investigaciones Científicas (Spain), Hanoi Agricultural University (Vietnam), INERA (Burkina Faso), Crop Research Institute (Ghana), ZEF (Germany) Timesis (Italy), Tianjin Academy of Agricultural Science (China), ARC (South Africa), GART (Zambia)

Theme 3 Conservation and utilisation of agro-biodiversity

Wageningen UR: Plant Research International, LEI, ID-Lelystad, ATO

CGR, Field Indonesia (Indonesia), Srer Khmer (Cambodia),

People Plants Research and Development (Philippines), FAO, IPGRI, National Biodiversity Centre Bhutan (Bhutan)

Theme 4 International Nature Management

Wageningen UR: Alterra, LEI

University of Groningen, Alfred Wegener Institute (Germany), Wetlands International, Furzebrook Research Station (UK), Universidad de Cadiz (Spain), Syndicat Mixte pour l'Amenagement de la Cote Picarde (France), Groupe d'Etude des Milieux Estuariens et Littoraux (France), University of Reading (UK), National Environment Research Institute (Denmark), Centre National de la Recherche Scientifique Chizé (France), Bureau Waardenburg, NIOZ, University of Bristol (UK), Moscow Bird Ringing Centre (Russia), RIZA, Altenburg&Wymenga Consultants, Universidad National Autonoma de Mexico (Mexico), Centro Agronómico Tropical de Investigación y Enseñanza (Costa Rica), European Forest Institute (Finland), Sarawak Forestry Department (Malaysia), Central Mindanao University (Philippines), Mindanao Polytechnic University (Philippines), Mindanao State University (Philippines)

Theme 5 Enabling policies for international agreements

Wageningen UR: Alterra, Plant Research International, LEI, ID-Lelystad, RIKILT

IFPRI (USA), Bangladesh Institute of Development Studies (Bangladesh), Purdue University (USA), ABARE (Australia), AARD (Indonesia), ILRI, ISNAR, FAO, Chinese Academy of Sciences (China)

Others

University of Zambia (Zambia), University La Sapienza (Italy), CSIR (South Africa), University of Pretoria (South Africa), Institut d'Economie Rurale (Mali), Institut de l'Environnement et des Recherches Agricoles (Burkina Faso), IACR-Long Ashton (UK), IITA, CIMMYT, University of Surrey (UK), Instituto de Investigacao des Pescas e do Mar (Portugal), Institute of Food Research (Ghana), University of Namibia (Namibia), Kenya Marine and Fisheries Research Institute (Kenya), University of Agricultural Sciences Bangalore (India), Universiti Teknologie Mara, Fact. Applied Science (Malaysia), University of Stirling (UK), Universidade de Coimbra (Portugal), National Aquatic Resources Research and Development Agency (Sri Lanka), University of Peradeniya (Sri Lanka), Asian Institute of Technology (Thailand), Kasetsart University (Thailand)

Programme management

GENERAL MANAGEMENT

Andre de Jager
Programme Manager
c/o IAC
P.O. box 88
6700 AB Wageningen
Tel: + 31 317 495420 / + 31 70 3358341
E-mail: andre.dejager@wur.nl

Niels Louwaars
Programme Co-manager
c/o IAC
P.O. box 88
6700 AB Wageningen
Tel: + 31 317 495236 / + 31 317 477003
E-mail: niels.louwaars@wur.nl

Wim Andriesse
Programme Co-manager
c/o IAC
P.O. box 88
6700 AB Wageningen
Tel: + 31 317 495234 / + 31 317 474476
E-mail: wim.andriesse@wur.nl

THEME COORDINATORS

Theme 1 Building competencies and regulating food quality and safety in global food chains

Rene Koster
ATO
P.O. Box 17
6700 AA Wageningen
Tel: + 31 317 478535
E-mail: Rene.Koster@wur.nl

Theme 2 Sustainable agriculture and environmental quality in peri-urban and densely populated areas

Reimund Roetter
Alterra
P.O. Box 47
6700 AA Wageningen
Tel: + 31 317 474229
E-mail: Reimund.Roetter@wur.nl

Theme 3 Conservation and utilisation of agro-biodiversity

Bert Visser
Plant Research International
P.O. Box 16
6700 AA Wageningen
Tel: + 31 317 477184
E-mail: Bert.Visser@wur.nl

Theme 4 International Nature Management

Paul Hillegers
Alterra
P.O. Box 47
6700 AA Wageningen
Tel: + 31 317 477856
E-mail: Paul.Hillegers@wur.nl

Theme 5 Enabling policies for international agreements

Niels Louwaars
Plant Research International
P.O. Box 16
6700 AA Wageningen
Tel: + 31 317 477003
E-mail: Niels.Louwaars@wur.nl

CHAIRMAN STEERING COMMITTEE

Marcel Vernooij
Netherlands Ministry of Agriculture, Nature Management and Fisheries
Directorate International Affairs
P.O. Box 20401
2500 EK Den Haag
Tel: +31 70 3784934
E-mail: m.l.vernooij@iz.agro.nl

