

Promote collaboration in European ARD  
to strengthen Agricultural Research for the world's poor



## **ERA-ARD WP1, Task 1.1**

# **Survey of National ARD Programmes: Synthesis**

## **Final Report**

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## 1. INTRODUCTION

The European Research Area (ERA) Network for Agricultural Research for Development (ERA-ARD) aims at rationalizing the European member states' investments and efforts in agricultural research in support of sustainable development and poverty alleviation in the South. ERA-ARD will map ARD activities and administrative structures in participating countries to highlight best practices, complementarities and synergies, possible duplications and overlaps. Based on this, sub-programmes may be developed as trans-national activities at the European level, with shared funding and administration.

The participating countries in ERA-ARD are: Austria, Belgium, Denmark, France, Germany, Hungary, Italy, Netherlands, Poland, Slovenia and Switzerland; in the course of the first year of the project also Lithuania, Spain and United Kingdom have joined the Consortium, bringing the total number to 14 countries. France is the ERA-ARD Coordinator. A full description of the aims and planned activities of the Network is available in the ERA-ARD Programme Proposal, Annex 1 'Description of Work'.

From 22-24 June 2005 the first of a series of ERA-ARD Workshops took place in The Hague, The Netherlands. This workshop corresponded to Task 1.1 of Work Package 1 (Systematic exchange of information and best practices) of the ERA-ARD 'Description of Work' referred to above, i.e. the "Definition of the scope and characteristics of ARD programs". The Netherlands is Work Package Leader of WP1. All ERA-ARD Member Countries were present at the workshop and Lithuania participated as an (active) observer.

As an input to the Workshop each Consortium Member was requested to describe his/her countries' national ARD programme.<sup>1</sup> This description, of approximately 5 pages, had to contain the following information:

- Definition, planning and funding of ARD at the respective national level;
- The national ARD priorities;
- A description of the ARD programme supported at the national level, including the topics covered, the level of funding, the target groups and countries and the type of research and/or innovation;
- A description of national ARD resources, i.e. the main institutions involved with their human, physical and financial resources;
- The future ARD plans and priorities, if available.

Together, these descriptions constitute Deliverable 1.1 of Work Package 1: "National surveys on definition, content and governance of each national ARD programme". Obviously, this can only be a momentary picture of a dynamic situation in which changes are continuously being considered and implemented.

The central element in ERA-ARD is the concept of 'national ARD programme', i.e. all ARD planned, funded and managed by the Consortium Members at national level. What exactly should be considered a 'national programme' in ERA-NET context can be derived from the description of ERA-NET participants and activities, as defined by the Commission (taken from the Community Research & Development Information Service (CORDIS) website):

### **Participants**

The scheme's participants are programme managers working in national ministries and funding agencies or research councils and as such different from the traditional participants in FP6 projects, being researchers from universities or enterprises.

### **Activities**

Activities developed within the ERA-NET scheme consist of the networking of entire research and innovation programmes, or parts of such programmes, or similar initiatives. Such programmes should have all of the following characteristics: be strategically planned; and be carried out at national or regional level; and either be financed and managed directly by national or regional public bodies, or by structures closely related to or mandated by public authorities (e.g. agencies).

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<sup>1</sup> As a result of joining the Consortium in a later stage, descriptions of national ARD programmes of Lithuania, Spain and United Kingdom are not represented in this first survey. These will however be included in the mapping exercise (tasks 1.2 and 1.3).

Application of these definitions is straightforward for more disciplinary determined, Europe-oriented fields of research, like e.g. animal welfare or genomics. The definition of the concept of 'national programme' in the case of ARD is, however, more complicated, because of the following characteristics of ARD:

- **ARD is a 'container concept':**  
The scope of ARD is not defined and delimited by a discipline or research field, but ultimately by an objective ('Agricultural Development'); consequently, ARD includes a broad and amorphous range of research disciplines, fields and themes and at the same time covers the whole knowledge chain (research, knowledge dissemination, capacity development, knowledge utilization).
- **ARD corresponds to a multiple policy and programming background:**  
Given its broadness, ARD is, per definition, part of various and different policy cycles: scientific, economic, agricultural, health, developmental, to mention the most important ones. Coordinated programming of ARD at national level, bringing together the different policy angles involved, is exceptional.
- **ARD is international by nature:**  
European ARD is by definition implemented in an international setting, because it is oriented towards beneficiaries in developing countries. This means: to be carried out in or for, and often with participants from, developing countries and in most cases in partnership with Southern counterpart institutions and/or international research institutions (like CG Centres). A specific category is European-supported research carried out by International Agricultural Research Centres (mainly CG Centres).<sup>2</sup>

As a consequence, the descriptions of the national ARD programmes of the 11 initial Consortium Members should be seen as a first attempt to come up with a structured overview of ARD efforts per country. At this stage the descriptions cannot claim to be fully complete, but at least they present what could be considered as the core of ARD in each participating country. A more accurate and detailed picture will emerge from the mapping exercise, to be undertaken under Tasks 1.2 and 1.3 of WP1 of the ERA-ARD project, including the data from Lithuania, Spain and United Kingdom.

## **2. INSTITUTIONAL SETTING OF ERA-ARD<sup>3</sup>**

### **a. Financing bodies**

ARD is typically financed from three governmental policy angles, defined at national level and in some countries (Germany, Belgium, Switzerland) also at sub-national levels:

- **Agriculture:**  
In the following countries, Ministries (or other public policy making bodies) of Agriculture and Rural Development are involved in funding of ARD: Slovenia, Germany, Switzerland, Hungary, Austria, France, Poland and The Netherlands. In Italy, Belgium and Denmark these Ministries seem to play no, or only a minor, role in ARD funding.
- **Research:**  
Involved are Ministries (or other public policy making bodies) of Education and Science and/or National Research Councils in Slovenia, Belgium, Germany, Switzerland, Austria, France, Poland and The Netherlands; whereas these Ministries seem to play no, or only a minor, role in ARD funding in Italy, Denmark and Hungary.
- **Development Cooperation:**  
Involved are Ministries (or other public policy making bodies) of Development Co-operation of all Consortium Members, except for Slovenia and Poland.

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<sup>2</sup> The extent to which this kind of European contribution to ARD is considered as being 'carried out at national or regional level' and/or being 'managed directly by national or regional public bodies' varies between countries; in other words: to what extent it should be subject to coordination within the framework of an ERA-NET. Whichever the case, it does form part of the ERA-ARD environment.

<sup>3</sup> The term ERA (European Research Area) refers in this document to (ARD in) the ERA-ARD Consortium Member countries, and not to Europe as a whole.

In Italy and Denmark, ARD funding is exclusively the responsibility of Ministries of Foreign Affairs/Development, whereas in the other countries funding of national ARD is the mixed responsibility of the Ministries of Agriculture/Nature, Research and Development Co-operation. In Switzerland the State Secretariat for Economic Affairs is also involved in funding of ARD. In France a special arrangement concerning ARD exists between the Ministries of Agriculture, Education and Science and Foreign Affairs (CRAI: Comité de la Recherche Agronomique International).

#### **b. Implementing institutions**

European contributions to ARD are being channelled via:

- **National knowledge institutions that carry out ARD (incl. partnerships/fellowships):**  
A large number of Agricultural Faculties and European Universities (several dozen) are involved in ARD. In addition, even more European Applied (Sector) Research Institutes carry out ARD, although not in all countries and not all to the same extent. These institutes are often, but not always, part of the national government and their size ranges from relatively small, topic-specific institutes, with a tropical component, to large ARD specialized institutes like CIRAD in France.  
In principle all Consortium Members support ARD in this way, providing either core or programme funding to their national ARD institutes/programmes.
- **Multilateral knowledge institutions that carry out ARD (CG Centres and other IARCs)<sup>4</sup>:**
  - Unrestricted (core) funding: provided by Switzerland, Belgium, Denmark, Netherlands
  - Restricted (programme) funding: provided by Switzerland, Belgium, Austria, France
  - Personnel support: provided by France
- **Agricultural/rural development programmes involving research/knowledge component/institutions:**  
Bilateral examples from Denmark, Hungary and Poland. Multilateral examples are the CGIAR Challenge Programmes and eco-regional programmes (like Amazon Initiative, African Highlands, etc.).

#### **c. Programming**

There are roughly three (partly overlapping) emphases in the way in which ARD is planned and ARD programmes primarily take form at national level (including combinations):

- **ARD agenda primarily driven by the (ARD) research community (within a general policy framework):**  
Strategic planning of ARD by research (knowledge) institutes. Seems to receive main emphasis in Italy, Hungary, Austria, Belgium, Poland, Denmark and France.
- **ARD agenda primarily driven by policy processes:**  
Strategic planning of ARD by public policy making institutes. Main emphasis on policy in Slovenia, Switzerland and The Netherlands.
- **ARD agenda primarily driven by development practice (target group):**  
Strategic planning of ARD through bottom-up, participatory planning processes. Denmark, Belgium, France and The Netherlands mention new demand-driven forms of programming ARD. Several countries (Denmark, Belgium, Hungary, Poland, Italy, Switzerland, The Netherlands) note that ARD is also an integrated part of (bilateral) development programmes, in which case it can be assumed that these ARD components are driven by (local) demands. However, the extent to which this occurs is unclear.

### **3. CONTENT OF ARD**

#### **a. Current national ARD programmes**

European ARD covers a wealth of research areas and topics. A quick scan of what has been brought forward in the descriptions of national programmes reveals the following:

- The bulk of European ARD has a technological/agronomical orientation; social and economic aspects are added to this, to various extents.
- The main emphasis is on Africa and Asia and, to a lesser extent, Latin America, Eastern Europe and Middle East. Some countries do not include Eastern Europe within the scope of ARD.

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<sup>4</sup> See note 2.

- Capacity development is an integral part of most ARD, mainly through University partnerships. Capacity development is sometimes also linked to specific policy areas and themes (Switzerland, The Netherlands). Some countries offer postgraduate courses in the field of agriculture, food and rural development (Germany, Belgium, The Netherlands and Denmark).
- Cutting edge ARD-relevant knowledge of European Advanced Research Institutes seems to be typically present in the more advanced micro (genomics, microbiology, chemistry, etc.) and macro disciplines (teledetection, earth sciences, etc.), as well as in integrated and interactive (learning) approaches to complex livelihoods and ecosystems challenges (supply chains, integrated natural resources management, water for food and ecosystems, etc.)

#### b. Future priorities

Future priorities seem to lay in a more coordinated ARD effort on all levels: national (at the level of Ministries and knowledge institutions involved), European (through ERA-ARD) and global (in relation to International Agricultural Research Centres (IARCs)).

With regard to content, integrated approaches and capacity development seem to be important cross cutting priorities.

## **4. ARD RESOURCES**

#### a. Personnel and infrastructure

Data on this point is generally lacking in descriptions of national ARD programmes.

Concerning the number of researchers involved in ARD, either part time or full time ARD (or ARD-related) experts, France reports figures ranging from 3.000 to 7.000 and The Netherlands from 1.000 to 1.500.

Regarding infrastructure for ARD, there is no ARD-specific physical infrastructure identified. However, an important social infrastructure exists in the form of the many international networks built around research institutes, programmes and researchers, including government, private sector and civil society and also thematic networks. In addition, France possesses two tropics-specific research centres (CIRAD and IRD); both with complete facilities in France as well as several research stations in developing countries. Switzerland has established a research station in Ivory Coast.

#### b. Financial resources: planning and funding

Channelling European national financial resources to ARD takes place through different lines of programming (see also under 2.c.).

Regarding planning, a key issue is who is strategically setting the research (and capacity development) agenda, i.e. who articulates the knowledge questions and how are these questions prioritised and linked to funds. In the descriptions of national ARD programmes three (often overlapping/interacting) arenas can be distinguished from which ARD is articulated:

- *The research community (in North and South):*  
articulation of research questions for strengthening the science/knowledge base for agricultural development; priorities set and linked to funds by research (knowledge) institutions.
- *Policy makers (bilateral, multilateral):*  
articulation of knowledge needs for informed (evidence-based) decision-making and knowledge intensive implementation of agricultural development; priorities set and linked to funds by public bodies.
- *Development practice (end users):*  
articulation of target group's needs for knowing, learning and acting for agricultural development; priorities set and linked to funds by intermediary structures/organisations.

Funding modes run parallel to these arenas, e.g.: funding of an (institutional) knowledge basis, funding of knowledge programmes in support of policy objectives and funding of knowledge inputs as demanded directly by target groups. Within these modes, a further division in funding mechanisms is relevant, including national/bilateral as well as multilateral funding mechanisms. In addition, a distinction can be made between explicit ARD expenditure (i.e.: expenditures earmarked as ARD)<sup>5</sup> and implicit ARD expenditures (i.e.: ARD expenditures forming an (estimated) part of a wider setting, e.g. an agricultural research programme on food safety which is (partly) development-relevant, or a rural development programme with research/knowledge components)<sup>6</sup>.

Schematically, the national ARD programmes represented in ERA-ARD contain the following lines in terms of programming (planning/funding):

**Table 1: Schematic overview of ARD programming lines (planning/funding) in ERA-ARD**

Strategic planning ARD agenda <sup>7</sup>	Funding mode	Funding mechanisms	Example of a 'typical' funding mechanism	Incidence in ERA-ARD (explicit/implicit ARD)
Researchers (in North and South)	Institutional	Core contribution to (ag) knowledge institutes	Funding of Univ./Research/ Training Institute in ARD	All CMs (explicit/implicit)
		Core contribution to IARCs <sup>8</sup>	Unrestricted (core) funding of CGIAR Centre	Several CMs (explicit)
		In kind contribution to IARCs	Seconding personnel to a CGIAR Centre	Some CMs (explicit)
		Subsidy to excellent (ag) research proposals/networks	Open calls for thematic (ag) research proposals	Some CMs (explicit/implicit)
Policymakers (in North and South)	Programme	Programme contribution to. (ag) knowledge institutes	Research and capacity dev. in support of (ag) policy	Some CMs (explicit/implicit)
		Programme contribution to IARCs	Targeted funding of CGIAR Centre activity	Almost all CMs (explicit)
Development practice (South)	Project	Subsidy to best suppliers of (rural) development services	Competitive grant schemes	Some CMs (explicit/implicit)
		Subsidy to research for (ag) development initiatives	Research/training component in rural development project	Almost all CMs (implicit)
		Fellowships	Open access courses for mid career professionals	Several CMs (explicit/implicit)

In the mapping part of ERA-ARD Workpackage 1 (tasks 1.2 and 1.3) the relevant programming (planning/funding) lines will be further elaborated and substantiated, including financial data per funding mechanism.

## 5. CONCLUSIONS

<sup>5</sup> Note that in the descriptions of national ARD programmes explicit ARD expenditures are not always clearly linked to programming/funding modalities; in addition, information for a number of countries is lacking.

<sup>6</sup> Note that in the descriptions of national ARD programmes implicit expenditures are sometimes mentioned without an (estimation of) the amount involved in financial terms; in addition, information for a number of countries is lacking.

<sup>7</sup> Refers to decision-making regarding articulation, prioritisation and planning of research/knowledge questions *under* a certain funding mode and *within* a certain funding mechanism; ultimately, all public ARD funding is of course somehow framed by policy decisions.

<sup>8</sup> International Agricultural Research Centres (mainly the CGIAR Centres), including the International Centre for development oriented Research in Agriculture (ICRA).

Preliminary conclusions based on the first descriptions of national ARD programmes:

1. The main public funding bodies of ARD in ERA-ARD Consortium Member countries are Ministries of Development Co-operation and, to a slightly lesser extent, Ministries of Agriculture and Ministries of Science and Education.  
ARD implementing institutes differ considerably in size and in numbers between countries.
2. ARD in ERA-ARD Consortium Member countries is predominantly of a technological/agronomical nature, includes capacity development and has its main geographical focus on Africa and Asia.
3. The contribution of France to European ARD accounts for a major part of the total European (Consortium's) contribution, because of its relatively large national ARD institutions (CIRAD, IRD).
4. Within the total Consortium Members' ARD contribution, national/bilateral channels for planning and funding of ARD through national knowledge institutions and bilateral development programmes are equally present as multilateral channels (mainly through the CGIAR system).
5. A variety of ways of agenda-setting, programming and funding of ARD exist, and in various combinations. Similar, compatible funding mechanisms are probably the key entry-points for further cooperation in ERA-ARD. This requires a more detailed insight into governance and scope of these mechanisms, which is foreseen in tasks 1.2 and 1.3 of WP 1 of ERA-ARD.

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## **ERA-ARD WP1, Task 1.1**

# **DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

## **ANNEXES**

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 1**

AUSTRIA

## AUSTRIA

### 1) How ARD is defined, planned and funded at the national level;

In the absence of a central ARD coordinating entity, Austrian ARD activities are planned by the individual research and development institutions in cooperation with the respective line ministries. Due to the lack of clear ARD standards, Austria aligns its research priorities with the strategic objectives of the Austrian Development Cooperation.

Since 1985 the Federal Ministry of Finance is the Austrian representative in the Consultative Group on International Agricultural Research (CGIAR)<sup>9</sup>. Consequently, Austrian scientists have cooperated with this global network of 16 international agricultural research centres. The funds are provided by the Austrian Federal Government and are distributed to the individual research centres according to the joint position proposed by the two line ministries: the Federal Ministry of Agriculture, Forestry, Environment and Water Management; and the Federal Ministry of Foreign Affairs. These two ministries are responsible for the submission of a consensual proposal elaborated by relevant research institutions involved in ARD, i.e. the University of Natural Resources and Applied Life Sciences, the Austrian Research Centre Seibersdorf (ARCS).

In Austria, technical development cooperation is executed by the **Austrian Development Agency – ADA** (operational branch of the Federal Ministry of Foreign Affairs)<sup>10</sup>. In the ADA portfolio, research is a demand-driven part, depending mainly on the particular needs of the respective country's development program.

**The Commission for Development Issues (KEF)** at the Austrian Academy of Sciences was established in 1981 and is financed by the Federal Ministry of Education, Science and Culture<sup>11</sup>. The KEF is a multi-disciplinary platform composed of research institutions, administration and representatives of civil society and supports cooperative projects of applied research with partners in developing countries.

### 2) National ARD priorities;

The fact that all players (administration, research and civil society) are actively included in the discussion and decision-making process ensures harmonized priorities based on the development cooperation agenda.

### 3) National ARD programmes

#### ADA

Poverty eradication, peace-keeping and the protection of the environment are the chief objectives of ADA cooperation with her partner countries<sup>12</sup>. A peaceful and an ecologically intact environment are considered to be the main pillars of any sustainable development. Austria's development activities are exclusively concentrated in rural areas and generally combine capacity building activities with technology transfer and knowledge-management.

#### Geographical concentration

Austria's bilateral development cooperation is concentrated in the following five key regions:

- Central America: Nicaragua, Costa Rica, Guatemala and El Salvador
- West Africa/Sahel: Cape Verde, Burkina Faso and Senegal
- East Africa: Uganda, Ethiopia, Tanzania, Rwanda, Burundi, Kenya
- Southern Africa: Mozambique, Namibia, Zimbabwe and the Republic of South Africa

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<sup>9</sup> <http://www.bmf.gv.at>

<sup>10</sup> <http://www.bmaa.gv.at> - Foreign Policy –Austrian Cooperation –Austrian Development Agency-ADA

<sup>11</sup> <http://www.oeaw.ac.at/kfe>

<sup>12</sup> see: <http://www.ada.gv.at> Development Cooperation Act (in force since April 2002)

- Himalayan – Hindu Kush region: Bhutan, Pakistan and Nepal

Special programmes exist for Palestine, Iraq, Afghanistan and West Sahara.

## **CGIAR**

Agricultural research plays an overwhelming role in the fight against hunger and poverty, thus, Austria considers the collaboration with agricultural research institutes world-wide as important part of effective poverty reduction. In addition to sustainable agricultural production (natural resource management), the protection of biodiversity has gained particular importance for CGIAR research centres, since Austria signed the Convention on Biological Diversity.

The Austrian contribution to CGIAR is allocated to the following centres:

- Centro Internacional de la Papa (CIP), Lima, Peru
- International Centre for Research in Agro-forestry (ICRAF), Nairobi, Kenya
- International Livestock Research Institute (ILRI), Nairobi, Kenya.
- Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT), Mexico City, Mexico
- International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria
- International Plant Genetic Resources Institute (IPGRI), Rome, Italy
- International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria
- Centro Internacional de Agricultura Tropical (CIAT)
- International Food Policy Research Institute (IFPRI)
- International Rice Research Institute (IRRI)
- International Water Management Institute (IWMI)

Short overview of on-going co-operation in the following areas:

- breeding research in potatoes, aiming at quality-enhancement and resistance against pests and diseases;
- breeding research in cereals;
- breeding research in sweet potatoes, for improved vitamin content;
- international gene-databases, safety-depositories for seeds, characterisation and utilisation of the genetic resources, etc.
- improvement of livestock breeding and keeping;

Support of the following Challenge Programmes:

- „genesforcrops“;
- „harvestplus“

In both programs, the Austrian focus is on the establishment and integration of the gene databases for the respective programme.

**KEF** links scientific issues with policy objectives from the field of development cooperation. The overall idea is to promote improved interaction between the research community and society. Aside from the subsidisation of applied cooperative research projects with partners in developing countries, consulting activities are the second important intervention area. Complementarily, the Commission serves as a contact point and intermediary body for domestic and foreign organisations facing development issues. It issues pro-active information, as well as providing links for institutions, and liaising actively with actors from education, development and economy. The KEF supports projects in developing countries aiming at the alleviation of poverty. The formalised priorities are few, with no limitations regarding geographic location or subject-matter. Expected results of research projects must serve specific development goals; in addition, they must be appropriate to offer solutions for urgent issues of sustainable social or economic development, and must serve to safeguard or improve the status of the environment. Projects which are geared exclusively towards the expansion of science are not eligible for funding. However, in specific cases the KEF also supports the preparation of scientific postgraduate courses for participants from developing countries, and other supporting measures that, directly or indirectly, serve scientific

education and further training in developing countries (e.g. funding of short scholarships or financial support for congress participants to present Commission projects).

#### **PFEIL 05**

The “Programme for Research and Development” (PFEIL 05) is the governmental basis for subsidising applied agricultural research in Austria. Responsible for the elaboration and execution of this program is the Federal Ministry of Agriculture, Forestry, Environment and Water Management. Major goals of this research programme are:

- conservation of biodiversity
- sustainable land-use
- water management
- live-stock
- sustainable forest management

On-going research in this field allows research-cooperation with developing countries and capacity building measures in accordance to the needs encountered.

#### **3) National ARD resources (main institutions involved with their human, physical and financial resources)<sup>13</sup>;**

	PM/Year (2004)	EURO/Year (2004)
Ministry of Finance (only CGIAR)	1	2.000.000,-
Austrian Foreign Ministry (for the ADA) (IITA/Cotonou)	1,5	300.000,-
Commission for Development Issues (KEF)	12	140.000,-
Ministry of Agriculture, Forestry, Environment and Water Management	0,1	15.500,-
ARC Seibersdorf Research	18	150.000,-

#### **5) Future ARD plans and priorities (if available)**

In Austria, there is an urgent need to formalize the setting of ARD priorities and standards in order to improve the effectiveness of the individual programs.

The ministries concerned have already started to co-ordinate the national institutions in a participatory process to foster information exchange on the national and the international level. Austria’s active engagement in the ERA-ARD project is an important part of this on-going process.

July 8, 2005.

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#### **List of selected web-based information**

<http://www.lebensministerium.at> Federal Ministry of Agriculture and Forestry, Environment and Water Management, BMLFUW

<http://www.bmaa.gv.at> Federal Ministry of Foreign Affairs, BMAA

<http://www.ada.gv.at> Austrian Development Agency, ADA

<http://www.bmf.gv.at> Federal Ministry of Finance, BMF

<http://www.bmbwk.gv.at> Federal Ministry of Education, Research and Culture, BMBWK

<http://www.boku.ac.at> University of Natural Resources and Applied Life Sciences, Vienna, BOKU;

<sup>13</sup> Currently, there is very little concrete data available to answer this question.

<http://www.boku.ac.at/dev-forum.html> Research for Development Forum, DEV-FORUM

<http://www.arcs.ac.at> ARC Seibersdorf Research Centre, ARCS

<http://www.bfw.ac.at> Bundesanstalt und Forschungszentrum für Wald, BFW

<http://www.ubik.ac.at> Karl-Franzens Universität, Innsbruck

<http://www.joanneum.ac.at> Joanneum Research Forschungsgesellschaft m.b.H.

<http://www.eh-klub.at> Entwicklungshilfeclub

<http://www.oefse.at> Österreichische Forschungsstiftung für Entwicklungshilfe

<http://www.oneworld.at/suedwind.agentur/> Südwind-Agentur

**ERA-ARD WP1, Task 1.1**

# **DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

## **ANNEX 2**

**BELGIUM**

### Agricultural Research for Development in Belgium

Kick off Meeting ERA-ARD, June 22-24 2005, Den Haag  
 by E. November,  
 Representative METAFRO-INFOSYS, Royal Museum for Central Africa

## Structure of research planning and funding in Belgium

Belgium is a federal state, which consists of three communities- Flemish, French and German – distinguished on linguistic and cultural lines and three regions – Flemish, Brussels Capital, and Walloon – representing economic areas. With regard to the research and technological development (RTD) sector, competencies are shared between the federal state and the federated entities. Prime responsibility with regard to scientific research however, is entrusted to the Communities and Regions, in the framework of their respective assignments, including research to be carried out in accordance with international or supra-national agreements or legal commitments.

The structure of planning and funding of research in Belgium and important players within this structure with respect to ARD are pictured in Figure 1.

Donors	Origin of funds	Administration	Programme	Implementors	
National	Federal	DG RTD	BELSP0	Bilateral, multilateral support Federal Scientific Institutes (FSI)	Research teams in Universities & Federal Scientific Institutes: (Royal Museum Central Africa RMCA, Royal Belgian Institute Natural Sciences RBINS, National Botanical Garden of Meise,...) & Community based institutes for research in natural and applied sciences: (Flemish Institute for Technological Research WITO, Flemish Institute for Biotechnology VIB, Community Centers for Agricultural Research CLO, CRA, Institute for Tropical Medicine ITG, Institute for the Promotion of Innovation by Science and Technology in Flanders IWIT, Flemish association for development cooperation and technical assistance VVOB, ...)
		DG DEV	DGDC- VLIR/CIUF	University Development Cooperation: OI, CIP, IUC projects Scholarships and travel grants for North and South researchers	
		DGDC-BTC	Bilateral, Multilateral DC (CGIAR)		
	Flemish	RTD	Science & Innovation Administration AWI	Bilateral, multilateral support	
			FWO	Fundamental research, scholarships	
			Universities	Special Research Fund	
	Walloon	DG ENORS	FNRS/ FRIA	Fundamental research, Research training	
			Universities	Special Research Fund	
		DG TRE		European and international cooperation	

Figure 1. National structure of research funding and important players in the ARD landscape

## ARD on federal level

On a federal level, Agricultural Research for Development is mainly hosted within the responsibilities of the **Directorate-General for Development Cooperation (DGDC)** and the **Belgian Federal Science Policy Office (BELSPO)** formerly known as the Federal Office for Scientific, Technical and Cultural Affairs (OSTC).

The **Directorate-General for Development Cooperation (DGDC)**, which forms part of the federal Department of Foreign Affairs, Foreign Trade and Development Cooperation is active in three types of development programmes:

### 1. Direct bilateral help (2003, EUR 137 mill.)

This encompasses projects, training programmes, technical assistance, financial cooperation and debt reduction, implemented by Belgian Technical Cooperation (BTC) with 18 priority partner countries (DR Congo, Rwanda, Burundi (focus on the Great Lakes), Uganda, Tanzania, South-Afrika, Mozambique, Palestine, Morocco, Algeria, Benin, Niger, Senegal, Mali, Vietnam, Peru, Ecuador and Bolivia). The selection of the 18 partner countries took place at the end of 2003, and was based on the criteria set out in the law on Belgian international cooperation, as well as the additional criteria below:

- Absolute priority for Central Africa, as stipulated in the Government Agreement;
- Evaluation of cooperation over the last 5 years;
- Belgium's share of the aid sent to each country;
- The quality of the current projects in each country;
- The quality of the political dialogue with each country.

ARD is funded in these projects since agriculture and food security are priorities in the sectoral approach that is followed in bilateral projects and research is frequently part of these projects.

### 2. Indirect bilateral help (2003, EUR 323 mill.)

The Belgian universities, the Association for promoting foreign education and training (APEFE), the Flemish association for development cooperation and technical assistance (VVOB) and scientific institutes (Royal Museum for Central Africa and the Royal Belgian Institute for Natural Sciences, etc.), as well as other specialised associations and NGO's, are among the key agents of Belgian cooperation activities in agricultural research for development.

The Conseil interuniversitaire de la Communauté française de Belgique - CIUF (Inter-university Council of the French Community of Belgium), acting on behalf of the nine universities and university departments of the French Community of Belgium, and the Flemish Inter-university Council -VLIR (Vlaamse Interuniversitaire Raad), acting on behalf of the 6 Flemish Universities and the Flemish colleges, are responsible, together with DGDC, for the University Development Cooperation programme (UDC). The Flemish and Walloon Universities are given in Table 1 (major ARD partners of VLIR and CIUF in bold font).

Table 1. Flemish and Walloon universities- acronyms

Flemish Universities	Walloon Universities
<b>Catholic University of Leuven -KUL</b>	<b>Université catholique de louvain -UCL</b>
<b>State University of Gent -UGent</b>	<b>Université de liège -ULg</b>
<b>Free University of Brussels -VUB</b>	<b>Facultés universitaires Notre-Dame de la Paix -FUNDP</b>
<b>University of Antwerp -UA</b>	<b>Faculté universitaire des Sciences Agronomiques de Gembloux -FSAGx</b>
<b>University of Hasselt -UHasselt</b>	<b>Université libre bruxelles -ULB</b>
<b>Catholic University of Brussels -KUB</b>	<b>Facultés universitaires catholiques de Mons -FUCaM</b>
	<b>Université de Mons-Hainaut -UMH</b>
	<b>Faculté polytechnique de Mons -FPMs</b>
	<b>Facultés universitaires Saint-Louis à Bruxelles -FUSL</b>

The general objective of UDC is to support southern institutions of research and higher education such that they are enabled to fulfil their three-pronged role in education, research and social service, through collaboration with

Flemish and Walloon universities. Capacity building of the institutions in the South and maintaining and expanding the expertise and the level of support within society in the North are specific objectives of the collaboration. Local priorities and needs are coupled with existing expertise on the Flemish and Walloon side.

Typically two programmes are promoted in this University Development Cooperation context:

- VLIR-OI (Own Initiatives) or CIUF-PIC (Projets Interuniversitaires Ciblés) projects to form partnerships between universities in Belgium and in the South for a relatively short term (3 up to 5 years) and perform target-specific research with an interdisciplinary approach. These projects are designed to strengthen the education and/or research capacity of the local partner by means of knowledge exchange and cooperation, including institutional reinforcement of the academic unity in the South.
- Institutional University Cooperation (IUC) of VLIR and CIUF is based on long term partnerships (10 years) around a broad perspective of mutual research and education on different themes. The IUC programme for each partner university is made up of several projects. These may involve both education and research projects as well as projects regarding the central policy and administration of a university (e.g. ICT, library development, infrastructure, creation of a research fund and research culture). Priority sectors are education, food security, public health and information society technologies (ISTs).

Apart from the OI/PIC and IUC programmes VLIR and CIUF provide travel grants, training and scholarships for North and South researchers.

The CIUF-IUC programme has an annual budget of approximately EUR 5.800.000 (total, not only ARD). In 2004, 31 % of the total budget is concentrated in Central Africa, 18% in Latin America and 17% in West Africa, 14 % in South-East Asia. The annual CIUF-PIC budget approximates EUR 4.800.000 (total, not only ARD).

VLIR and CIUF follow the policy of concentration on LDCs and LMICs. Long term partnerships (10 years) for institutional university cooperation (total IUC not specific for ARD) with VLIR currently involve 12 partners in the South, of which 6 in Africa, 3 in Latin America, 3 in Asia (Table 2). For CIUF-Institutional University Cooperation, the ARD projects selected in 2004 include 3 partnerships in Africa, 2 in Latin America and 2 in Asia (Table 3).

Table 2. VLIR-IUC partnerships of 2005

Flemish University	South University	Duration
UA	Tanzania SUA	1997-2006
UGent	Zambia UNZA	1997-2006
VUB	Kenya UNBI	1998-2007
KUL	Zimbabwe UNZI	1997-2006
KUL	Ethiopia MU	2003-2012
UGent	South Africa UWC	2003-2012
KUL	Bolivia UMSS	1997-2006
UGent	Ecuador ESPOL	1999-2008
VUB	Cuba UCLV	2003-2012
UGent	Vietnam CTU	1998-2007
VUB	Vietnam HUT	1998-2007
KUL	Philippines SLU/BSU	1999-2008

Table 3. CIUF-IUC partnerships with ARD component at present

Walloon University	South University	ARD theme incorporated in partnership	Total budget per year (not only on ARD theme) in EUR
ULg- UCL	Benin UAC	Natural resources management	579.704

FUNDP- ULg	Congo DR UNIKIN	Agronomy- biology	500.000
ULB-UCL	Bolivia UMSS	Food technology, Phytogetic resources, Cellular and Molecular biology	400.000
UCL-FUSAGx	Vietnam UAH	Rural development	300.000
ULg	Laos UNC	Rural development-agronomy	250.000
FPMs-FUCaM	Morocco-Mohammed Ier	Water technology	245.884
UCL-ULg	Peru UNALM	Conservation of plant & animal biodiversity in Andes and Amazon region	130.094

In order to give an overview of thematic and geographical focus for the UDC with respect to ARD, the OI (selected for 2005) and PIC (selected for 2004-2003) projects of VLIR and CIUF are given in Table 4 (this list is incomplete since ongoing projects selected in previous years are not incorporated).

Table 4. University Development Cooperation-OI/PIC projects in ARD, selected by VLIR in 2005 and CIUF in 2004-2003.

University	Country	ARD theme	years	Budget for total duration in EUR
<b>2005 VLIR-Flemish Universities selected projects OI programme</b>				
VUB	South Africa UNIN	Biotechnology research and training capacity	5	310.000
KUL	Suriname	Development of modelling tools for coastal erosion protection	4	310.000
UGent	Congo DR	Plant genetic modification for quality seed production	5	309.864
KUL	Bolivia	Raising Quinoa grain production by deficit irrigation	5	309.650
KUL	Ecuador	Contribution of afforestation and reforestation to the enhancement of physical and socio-economic land performance in the Southern Andes of Ecuador	3	309.141
KUL	Congo DR	Integrated soil fertility management coupled to resilient germplasm in cassava-based systems	5	308.000
KUL	Bangladesh	Sustainable management of soil and water resources: long - term impact on soils of irrigation using lower quality water	5	300.300
Ugent	Cuba UNAH, CENHICA	Capacity building in soil and water conservation	4	288.519
KUL	Togo	Environmental law and politics	5	274.595
KUL	Peru, Bolivia, Ecuador	BASINred: a regional Andean network for water resources engineering	3	230.000
Ugent	Indonesia	Nitrogen use efficiency for smallholder farmers	4	219.500
KUL	Madagascar	Development of a centre of excellence on beverages	5	195.275
<b>2004 CIUF-Walloon Universities selected projects PIC programme</b>				
FUSAGx	Ivory coast	Valorisation of food crops: Cucurbitaceae	3	297.547
ULB	Madagascar	Tropical holothuriculture: seafarming	4	350.626
FUNDP	Congo DR	Aquaculture	5	370.000
FUNDP	Rwanda, Congo DR	Lake ecosystem study for sustainable exploitation	4,5	370.000
UCL	Vietnam	Food production for rural families on poor soils	4	356.071
<b>2003 CIUF-Walloon Universities selected projects PIC programme</b>				
UCL	Cameroon	Essential oils for food storage STOREPROTECT	4	325.700
UCL-ULg	Congo DR	Applied economics for rural development	3	265.113
UCL	Congo DR	Manioc: epidemiology, identification and crop production enhancement	3	204.564
Ulg	Morocco	Veterinary study on bovine parasites	3	239.305

FUSAGx	Morocco	Post harvest protection techniques: citrus fruit and potatoes	3	364.787
ULB	Cuba	Reference center on Aquatic environment sciences	3	288.039
ULB	China	Biological control of bark beetle	4	266.714
UCL	Niger	University research versus development operations	3	214.674

### 3. Multilateral aid (2003, EUR 149 mill.)

The DGDC also works directly with around 20 international organisations (FAO, IFAD, UNICEF etc.) and the European Union (European Development Fund). DGDC contributed approximately EUR 14 mill. to FAO and EUR 4,7 mill. to IFAD in 2004.

Belgian cooperation is heavily involved in supporting international research into agricultural techniques which can then be passed on to farmers. In this respect, it concentrates above all on programmes carried out in cooperation with the Consultative Group for International Agricultural Research (CGIAR) and Belgian universities. CGIAR receives approximately EUR 6 mill. annually from DGDC for restricted and unrestricted core. The Belgian support to the CGIAR started since its creation, but from 2000 on has entered a new phase whereby the partnership approach is the key in the support of sustainable agricultural development and particularly the involvement of Southern stakeholders in all phases of the activities. Since 2002, the Belgian Government has put special emphasis on 3 aspects, which are key criteria in the selection of research projects:

- a bottom up approach in the conception of agricultural research for development cooperation activities which are developed for small farmers and farmers associations in the South;
- partnerships with farmers associations and National Agricultural Research and Extension Services of the Southern countries, developed for the preparation and implementation of the research activities and for the dissemination of the technologies obtained as a result of the research;
- integration of social, environmental and economic issues in relation to agricultural research for development and promotion of the scientific basis for sustainable agriculture and rural development.

The restricted core multilateral Belgian funding to CGIAR international agricultural research centres concentrates on IITA, IPGRI, ILRI, ICRISAT and CIAT, covering the majority of sectors involved in crop and livestock farming in a tropical environment and whose objectives are to ensure food security, reduce poverty and protect the environment. Table 5 represents current large contributions of Belgium to CGIAR centers. For the period 2005-2007 main funding will go to CIAT, IPGR/INIBAP, IITA and CIP.

The thematic focus of the Belgian partnership with CGIAR and specific targets are:

- conservation of the agro-biodiversity of banana and plantain (*Musa* sp.).
- breeding and delivering of superior plantain and banana to smallholder in Sub-Saharan Africa
- promotion of balance nutrient management systems in maize based farming systems of moist savannah in West-Africa
- improved livelihoods in the Sahel through the development and implementation of household level bio-economic decision support systems
- sustainable management of pastoral lands: assessing the tradeoffs between poverty alleviation and wildlife conservation
- building the agricultural assets and marketing opportunities of rural women and the poor through participatory research in a resource-to-consumption framework

The geographic focus for Belgium in cooperation with CGIAR is on West-Africa, Eastern Africa, Southern and Central Africa.

DGDC's general policy (for all programmes) with respect to agricultural projects is characterised essentially by the following:

- the choice of poor, small-scale farmers and small family farms as the main target group;
- the promotion of sustainable, environmentally-friendly production systems;
- the choice of food security and the fight against poverty as the two essential priorities;
- the promotion of food production and small family farms that provide the family's living;
- the reinforcement of the available structures and organisational support;

- an approach based on participation;
- anchoring any project undertaken in the strategies and structures of the partner country concerned.

Table 5. Largest DGDC supported projects in CGIAR centers at present.

Project Titel	CGIAR Center	Budget (in EUR)	Belgian contact	Key words
ITC - INIBAP <i>Musa</i> Transit Centre	<a href="#">IPGRI - International Plant Genetic Resources Institute</a>	3.183.702 (2001-2005)	<a href="#">Laboratory for Tropical Crop Improvement Faculty of Agricultural and Applied Biological Science- KUL</a>	<i>Musa</i> , diversity, germplasm, productivity
Breeding and Delivering Superior Plantain and Banana to Smallholders in Sub-Saharan Africa	<a href="#">IITA - International Institute of Tropical Agriculture</a>	3.718.403 (2001-2005)	<a href="#">Laboratory for Tropical Crop Improvement - KUL</a>	in vitro breeding methodologies, genetic improvement, diseases and pests resistance, partnership
BNMS - Balanced Nutrient Management Systems for Maize Based Farming Systems in the Moist Savanna and Humid Forest Zone of West-Africa	<a href="#">IITA - International Institute of Tropical Agriculture</a>	1.862.555 (2001-2005)	<a href="#">Laboratory for soil fertility and soil biology -KUL</a>	farming systems, nutrient use efficiency, partnership
Improved Livelihoods in the Sahel through the Development and Implementation of Household Level Bio-economic Decision Support Systems	<a href="#">ICRISAT - International Crops Research Institute for the Semi-Arid Tropics</a>	1.746.100 (2002-2006)	Research units: Environmetry and Geomatics; Agricultural Engineering - UCL	Risk management, Drought, Millet, Income diversification, Livestock, Demography, Farmer organizations, Soil fertility
Better Policy and Management Options for Pastoral Lands: Assessing the Tradeoffs between Poverty Alleviation and Wildlife Conservation	<a href="#">ILRI - International Livestock Research Institute</a>	1.650.398 (2002-2004)	Department <a href="#">Géographie et géologie- UCL</a>	Poverty alleviation, Community participation, Biodiversity conservation, Pastoralists and agro-pastoralists, Land-use/cover change, Ecosystem goods and services, Policy and management, Income diversification
Building the Agricultural Assets and Marketing Opportunities of Rural Women and the Poor through Participatory Research in a Resource-to-Consumption Framework	<a href="#">CIAT - Centro Internacional de Agricultura Tropical</a>	897.840 (2002-2006)	Brussels Centre of African Studies Free University of Brussels - ULB/VUB	Forests, forest-agricultural landscapes, forestry and natural resource policy, Institutional arrangements, local community empowerment, Poverty alleviation, rural development strategies

Next to the **Directorate-General for Development Cooperation (DGDC)**, the **Belgian Federal Science Policy Office (BELSPO)** is competent for ARD through:

- execution and organisation of networks for information exchanges between national and international scientific institutes;
- supervision of federal scientific institutes (FSI) including their research activities and public-service activities, such as Royal Museum Central Africa (RMCA), Institute for Tropical Medicine (ITG) for

veterinary oriented ARD, National Botanic Garden of Meise and Royal Belgian Institute for Natural Sciences, both with an emphasis on biodiversity research;

- in accordance with rules established via co-operation agreements with the Communities and the Regions:
  - programmes and actions requiring homogeneous execution at national or international level;
  - maintenance of a permanent inventory of the country's scientific potential;
  - Belgian collaboration in activities of international research bodies.

Two research programmes focus on development:

- programmes in bilateral cooperation with agricultural research on the agenda are implemented with partner countries China, Argentina and Vietnam
  - ARD focus in China: teledetection, global change, collections of micro-organisms:
    - Microfungi research (UCL),
    - Crop monitoring systems (Walloon Centre for Agricultural Research CRA, Flemish Institute for Technological Research VITO),
    - Remote sensing for land cover change (VITO, UCL)
  - ARD focus in Argentina: agrofood
  - ARD focus in Vietnam: aquaculture and related quality standards for environment and food security
- multilateral projects with UNESCO (among other international partners), for which an important part in Earth Sciences is implemented by the Royal Museum of Central Africa (Satellites to the rescue of the world heritage)

Specific examples of important BELSPO research actions in development cooperation, with respect to agriculture in the broad sense:

- The "Interuniversity Attraction Poles" (IAP) Programme aims to provide support for teams of excellence in basic research that belong to Belgium's Communities and work as part of a network in order to increase their joint contribution to general scientific advances and, where applicable, to international scientific networks. For example, 1 of the 36 research projects is on Growth and development of higher plants (2001-2006): to enhance knowledge on molecular mechanisms that regulate the development of plant roots and the interaction of roots with the environment. Major University partners in Molecular Genetics, Plant Physiology, and -biochemistry are UGent, UA, ULB, ULg (Table 1 for acronyms of universities).
- The Belgian Coordinated Collections of Micro-organisms BCCM collections underpin activities in a wide variety of key economic sectors such as agriculture, food, human and animal health, the environment, support the wood industries, etc. (EUR 11 mill. 1998-2003). Major university partners are UGent with its Bacteria and Plasmid Collection and UCL for the (agro-)industrial Fungi/Yeasts Collection.
- Scientific support for the exploitation of the "végétation" instrument: mapping and monitoring of ecosystems for the management of natural resources and the evaluation of biodiversity (EUR 3 mill., 2001-2004) is performed by consortium members: Remote sensing expertise centre of the Flemish Institute for Technological Research (VITO), the Geography Department of UCL and the Forest, Nature and Landscape laboratory, Land Management Department of KUL.

General thematic priorities related to ARD in the federal science policy are Sustainable development, Global change, Biodiversity and Ecosystems and Information Society Technologies. A number of federal ARD activities concentrate on Plant Physiology, Remote sensing for crop and land changes monitoring and Collections of micro-organisms.

Although Central Asia is not considered as a priority region for development cooperation with respect to UNDP, World Bank and EU policies, Belgian supports China based on the previously built up expertise with this partner country.

## **ARD in the Communities and Regions**

Within the Communities and Regions, ARD is funded and implemented within a complex structure of Ministries, Administrations and Funds and implemented and concentrated in a structure of university teams, federal scientific institutes and recently established institutes for nature and applied sciences (such as VITO, Institute for Biotechnology (VIB), Agricultural Research Centers Flemish and Walloon (CLO and CRA), etc...). Special funds for ARD are the Fund for Scientific Research (FWO, Flemish Fund for fundamental research), the National Fund for Scientific Research (FNRS, Walloon) and the university controlled Special Research Fund. Other donor organisations are the Administrations of the respective Ministries in charge of research as well as the Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT for research with industrial objectives).

The Science and Innovation Administration (AWI) belongs to the Ministry of the Flemish Community. AWI gives multilateral support to EC programmes (Framework programme, COST, INCO) and UN programmes such as the UNESCO programme in which a Flemish Trust Fund co-finances development related projects as the International Hydrological Programme (IHP) for which scientific research is performed by Flemish teams on the theme 'water'. Bilateral funding of the Flemish community goes to priority countries of the Foreign Affairs policy: developing countries: Chili, China, South-Africa, and non developing countries: Hungary, Poland, Russia, Romania, Czech Republic. The Science and Innovation Administration provides the necessary support for the preparation and evaluation activities and plays a co-ordinating role towards IWT and FWO.

The Minister of Economy, Town & Country Planning and Media is responsible for the science and technological innovation policy, whereas the Minister for Education and Training is responsible for the training of researchers and for the structural funding of scientific research at the universities and schools for higher education. The Flemish Council for Science Policy is the most important advisory body. It is the intention of the Flemish Government to reorganise these administrative structures to further improve their transparency, efficiency and quality.

For the Walloon Community, the Minister of Higher Education and Scientific Research is in charge of university research and of applied research in the Hautes Ecoles. At administrative level, Directorate General for non-compulsory Education and Scientific Research (DGENORS) of the Ministry of the French Community caters for planning and implementing the scientific policy of the French Community, provides funding for university institutions and sets up funds for general scientific research (FNRS - National Scientific Research Fund and associated funds, e.g. FRIA- Fund for Research Training in Industry and Agriculture), organises concerted research activities and is responsible for the special fund for research in university institutions as well as for subsidising the Hautes Ecoles.

In the Walloon region, Directorate General for Technologies, Research and Energy (DGTRE) is under the authority of the ministry of the Walloon region and is among other tasks responsible for scientific research and cooperation. The Walloon Region is active in international collaboration e.g. research programmes funded by the European Union, especially those of the Framework Programme and a interdisciplinary research potential is present in the field of life sciences. The Walloon Region also collaborates with several European (EUREKA, COST,...) and international (WHO, UNESCO, NIH, NATO...) organisations.

## **Belgian ARD on European level**

On European level, Belgian research teams active in ARD are especially found in the INCO DEV programme, other multilateral programmes such as the European Framework Programme, EUREKA, COST,.. are also important.

## ARD definition

Based on the description of the Belgian ARD programme it can be concluded that ARD in Belgium is defined in accordance with international ARD definitions from International Centre for development oriented Research in Agriculture (ICRA) and FAO among others. ARD is a process for planning research and development activities that responds to the needs of extension agencies and farmers, development projects and traders, NGOs and the agribusiness, farmers organisations and consumers.

ARD by definition, contributes to wider development objectives than just increasing crop or animal productivity. Poverty and hunger alleviation together with sustainable resource use and competitiveness of farming enterprises are core priorities. The participatory approach of ARD integrates the diverse perspectives of different stakeholders to facilitate teamwork across disciplines and institutions.

### Scope of the Belgian ARD programme

Kick off meeting ERA-ARD, Den Haag  
By E. November,  
Representative METAFRO-INFOSYS, Royal Museum for Central Africa

## Agriculture in ARD: priority themes

In the recently published study of the Flemish Council for Science Policy an extended analysis is given of the Flemish teams active in research with, in or for developing countries. Main conclusions drawn from this report are in accordance with the themes and geographical focus found in the University Development Cooperation programmes of DGDC-VLIR-CIUF and the multilateral cooperation of DGDC with CGIAR. Results in Table 1 give an overview of thematic priorities ranked by budget and number of Flemish projects currently active in this discipline.

General thematic priorities related to ARD in the federal science policy are **Sustainable development, Global change, Biodiversity and Ecosystems and Information Society Technologies**. A number of federal ARD activities concentrate on **Plant Physiology, Remote sensing for crop and land changes monitoring and Collections of micro-organisms**.

Important scale levels for University Development Cooperation range from **farmer/family level oriented (In accordance with the main target of DGDC) to region/country level oriented** for example when centers of excellence are created in a partner university in order to render service to a larger community.

The Belgian multilateral cooperation with CGIAR cooperation has 3 accents with respect to scale level and thematic priority:

- a **bottom up approach** in the conception of agricultural research for development cooperation activities which are developed for **small farmers and farmers associations** in the South;
- **partnerships with farmers associations and National Agricultural Research and Extension Services** of the Southern countries, developed for the preparation and implementation of the research activities and for the dissemination of the technologies obtained as a result of the research;
- **integration of social, environmental and economic** issues in relation to agricultural research for development and promotion of the scientific basis for sustainable agriculture and rural development.

The Belgian funding to CGIAR international agricultural research centres concentrates on **IITA, IPGRI, ILRI, ICRISAT and CIAT**, covering the majority of sectors involved in crop and livestock farming in a tropical environment and whose objectives are to ensure food security, reduce poverty and protect the environment.

The largest thematic focus of the Belgian partnership with CGIAR is the **Conservation of the agro-biodiversity of banana and plantain** (*Musa* sp.) and the **Breeding and delivering of superior plantain and banana to smallholder**

in Sub-Saharan Africa. Other important contributions go to themes such as: **Balance nutrient management systems in maize farming systems, Support to bio-economic decision support systems on family level, Sustainable management of pastoral lands and Support to marketing opportunities of rural women and the poor.**

Frequent combinations of priority themes with dimensions found within this ARD mapping exercise:

Technology: crop productivity and remote sensing, genomics, integrated pest management tools, irrigation, food technology, soil nutrient systems...

Ecology: soil- and water conservation, forest management, biodiversity of crops, plants, fish, micro-organisms, desertification, climate change...

Economic: marketing opportunities, access to financial services, micro-finance...

Socio-cultural: gender oriented cooperation development and conflict prevention, ..

Political-institutional: laws and institutional arrangements...

In order to obtain a structured view on the thematic focus of ARD projects, a standardisation of discipline codes is highly valuable. Currently different codes, key words and classifications are in use in databases and organisation documents.

Table 1. ARD priority disciplines for Flemish ARD (withdrawn from FCSP Science Sharing project).

		Theme	Estimated budget in EUR	Geofocus
<b>Natural Sciences: Agriculture</b>	<b>Soil science</b>	<b>Soil fertility: most on Nitrogen biofertilisation</b>	4.000.000	SSA, Latin America
		<b>Soil management: focus on erosion control, water harvesting and sustainable plant production</b>	> 4.000.000	SSA
	<b>Forestry</b>	<b>Tropical forestry and sustainable forest management</b>	1.000.000-5.000.000	East Africa, Latin America
	<b>Agronomics</b>	<b>Pesticides</b>	500.000-1.000.000	
		<b>Irrigation</b>	100.000-250.000	
<b>Natural Sciences: Environment</b>	<b>Earth sciences</b>	<b>Geophysics</b>	> 1.000.000	Asia, Latin America
		<b>Marine biodiversity and ecosystems</b>	> 1.000.000	Indian Ocean
	<b>Natural resources management</b>	<b>Aquaculture</b>	> 2.500.000	Asia, Latin America
		<b>Environmental monitoring, mainly forest and mangrove ecosystems</b>	> 1.000.000	Asia, Africa

	<b>Water management</b>	<b>Limnology, Water scarcity management</b>	> 1.400.000	Africa, Palestine
	<b>Global change</b>	<b>Climatic change and desertification</b>	> 2.000.000	SSA
<b>Natural Sciences:</b>	<b>Plant Sciences</b>	<b>Phytopathology on Insects</b>	> 2.000.000	
		<b>Phytopathology on nematodes</b>	> 1.000.000	SSA, Asia
<b>Biology</b>	<b>Blotechnology</b>	<b>Genetic Engineering for plant disease resistance, production and cold tolerance</b>	1.000.000-5.000.000	
<b>Technological sciences</b>	<b>Food Technology</b>	<b>Fermentation, Food storage and preservation</b>	1.000.000-5.000.000	
<b>Economical sciences</b>	<b>Development economics, Rural economics</b>		5.000.000-10.000.000	

## Research as a process in ARD

Structural national and university research priorities focus on **strengthening basic research, foster applied research in technology-oriented economic networks, and enhance international collaboration, while developing collaborative networks between Belgian universities.**

From the total budget for research in Flanders, most goes to cutting-edge fundamental research and less to applied research. The communities fund fundamental research on university level mainly with SRF, FWO and FNRS, application-oriented research is funded mainly through IWT, strategic research is performed by the expertise centers, VITO, VIB, CRA, CLO. The relation of the different types of research in the Science policy e.g. in Flanders is  $\frac{1}{2}$  of funds to fundamental (EUR 400 mill. in 2005),  $\frac{1}{4}$  to strategic research  $\frac{1}{4}$  to applied. With respect to ARD programmes specifically, demand-driven, applied research projects are favored by donor organizations DGDC-VLIR/CIUF among others.

Concerning the dissemination of knowledge, activities of DGDC in cooperation with BTC concentrate on **primary education**, whereas VLIR and CIUF focus on **university education**. Extension is often accomplished in collaboration with NGO's. **CGIAR partnerships with farmers associations and National Agricultural Research and Extension Services of the Southern countries**, developed for the preparation and implementation of the research activities and for the dissemination of the technologies obtained as a result of the research, are highly encouraged by Belgium.

For **individual capacity building** in ARD, scholarships as well as travel grants are found within FWO, FNRS, VLIR, CIUF, IWT, SRF, ..

VLIR and CIUF furthermore give high priority to **institutional capacity building in the IUC programmes**, through educating and training academic leadership etc.

BELSP0 supports networking in ARD, for example with an accent on Biodiversity: Belgian Biodiversity Information Facility (BeBIF), the Belgian Node of the Global Biodiversity Information Facility.

One of the federal science priorities is the incorporation of **Information Society Technologies** in projects. For ARD projects within UDC, installation of information networks is an important factor.

Utilisation and up/outscaling of knowledge is achieved through creation of centers of excellence with partner universities in the UDC programme of DGDC-VLIR and CIUF. It is also anticipated that partner universities and research institutes receiving institutional support will be in a better position to take up their societal responsibilities.

Belgian Agricultural Research for Development projects are spread out over a number of data bases such as: [www.research.be](http://www.research.be), FEDRA (Research Actions funded by the Federal Office), CORDIS (Community Research and

Development Information System of the EU), the Flemish Research Database IWETO (Inventory of Scientific and Technological Research), InfoSys+ (EIARD initiative), WISARD (Web based Information Services for Agricultural Research for Development) and SHARED (Scientists for Health and Research for Development) for veterinary sciences.

## Development in ARD

The scope of objectives underlying ARD can be viewed from the angle of policy context, target groups and/or physical target areas:

### Geographic focus:

Special Research Fund of the Flemish Universities has bilateral research programmes in Chili, China, South-Africa.

VLIR-IUC: Priority to LDC-LMICs, currently in Africa: Ethiopia, Kenya, Tanzania, Zambia, Zimbabwe, South-Africa, in South-East Asia: Philippines, Vietnam and in Latin America: Ecuador, Cuba, Bolivia

CIUF-IUC: Priority to LDC-LMICs, currently new ARD proposals selected in Africa: Congo DR, Benin, Morocco, in Latin America: Bolivia, Peru and in South-East Asia: Laos, Vietnam.

VLIR-OI recent in ARD: 5 in Africa (South-Africa, Togo, Congo DR (2), Madagascar), 4 in South-America, 1 in Central America (Cuba) and 2 in Asia (Bangladesh and Indonesia)

CIUF-OI recent in ARD: 10 in Africa (Congo DR (4), Rwanda, Cameroon, Niger, Morocco (2), Ivory Coast, Madagascar), 2 in Asia (Vietnam, China) and 1 in Central America (Cuba).

DGDC-BTC : Congo DR, Rwanda, Burundi (focus on the Great Lakes), Uganda, Tanzania, South-Africa, Mozambique, Palestine, Morocco, Algeria, Benin, Niger, Senegal, Mali, Vietnam, Peru, Ecuador and Bolivia.

DGDC-CGIAR: East-Africa, West-Africa, Central and Southern Africa

BELSP0: China, Vietnam, Argentina

Bilateral funding of the Flemish community goes to priority countries of the Foreign Affairs policy: developing countries: Chili, China, South-Africa, and non developing countries: Hungary, Poland, Russia, Romania, Czech Republic. Selection of the non-developing countries is mainly based on the potential for capacity-building.

Overall it is clear that priority countries for ARD are selected following the **LDC and LMICs** guideline of the World Bank among others. A geographical focus is on **Africa, more specifically Sub-Sahara Africa** and specific attention is given to **Congo DR** within Africa. In **Asia, Vietnam** is at the receiving end of multiple Belgian initiatives, as well as **China**. **Latin American** partnerships with Belgian ARD teams are mainly found in **Bolivia, Cuba, Peru, and Ecuador**. Geographic focus of Belgian ARD on Africa, Asia and Latin America is in accordance with the current policy of 'recognising' developing countries. Apart from the priority to LDC and LMICs, Belgium supports historical bilateral partners (e.g. China) and the transition economies of eastern Europe and Russia.

**Physical target areas** for Belgian cooperation are zones where the **average economic profile** of the population is lower compared to the rest of the country. Agriculture in **urban areas** is given special attention as an instrument to alleviate poverty for the poorest population groups in those areas.

### Policy context:

Belgian cooperation has chosen to go against the OECD trend towards a drop in funding for agriculture and has succeeded in keeping the level of aid it provides stable. Consequently, agriculture is one of the DGDC's five "priority sectors".

The aim of Belgian cooperation in terms of agriculture is to **improve food security and combat poverty** according to MDG's by promoting **sustainable agricultural development** that will meet the needs of the poorest population groups whilst **preserving essential resources and the environment** for future generations according to the CBD and WSSD.

DGDC's general policy (for all programmes) with respect to agricultural projects is characterised essentially by the following:

- the choice of poor, **small-scale farmers and small family farms as the main target group**;
- the promotion of **sustainable, environmentally-friendly production** systems;
- the choice of **food security and the fight against poverty** as the two essential priorities;
- the promotion of food **production and small family farms** that provide the family's living;
- the reinforcement of the available structures and organisational support;
- an approach based on **participation**;
- anchoring any project undertaken in the strategies and structures of the partner country concerned.

The Belgian cooperation follows 3 main strategies:

- **Integration of the cooperation within the national policy** and national programmes of the partner country
- contribution to the **capacity building of the new agricultural development actors**: support to the professional efficiency (social and economical) of farmers organisations and increase the potential for political representation of the rural organisations.
- **accessibility of production factors**( water, land, investments,..), **services and markets**

## • Future of ARD

### **Budget**

The Belgian Cooperation has the intention to increase the contribution to the agricultural sector. The proportion of the total ODA spent on agriculture and food security should be in accordance with the importance of the agricultural sector for the partner countries. On average, Belgium contributes EUR 53 mill. on agriculture (including indirect and direct bilateral and multilateral cooperation) annually. This contribution has been kept more or less stable since 1987. The actual share of Agriculture in ODA however, has been declining from 14,5 % to 9,5 %.

### **Structural trend towards long term partnerships**

Current university research is focused on short term projects and as stated by the UNDP, research today requests immediate application and diversified donor agencies due to the wide range of problems and challenges the society faces. The current politics of diversified funding and short term partnerships of many donor agencies limit investments in S&T and technology based development programmes, requiring long-term experimentation. With respect to the difficulties in delivering and disseminating project results from short-term projects, DGDC in cooperation with VLIR and CIUF invests in **longer term partnerships** (10 years) through the Institutional University Cooperation programme.

### **Efficiency and integration of ARD**

Belgium concentrates on 4 basic principles in order to guarantee an integrated ARD programme:

- participatory approach
- sustainable management of natural resources
- gender equality
- efficient and sustainable implementation procedures in development projects (e.g. efficient financing mechanisms,...)

### **References**

Science Sharing project

Gele Boek DGDC

Groene Boek DGDC

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**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 3**

DENMARK

## Summary Note on National ARD in Denmark

The majority of the research related activities that take place with involvement of Danish researchers or Danish funds is funded by the Danish development assistance (Danida) under the Ministry of Foreign Affairs. This note will, therefore, focus on the Danida funded research. The work of Danish and visiting researchers, as well as students, may be funded from other sources, e.g. from EU, national or international organisations or private funds. Such ARD activities are mainly opportunity driven and do not take place as part of a centrally coordinated programme. There does, however, seem to be a general interest within the Danish research community to become involved in new areas and to contribute to the overall knowledge base for the international agenda.

### 1. Strategy and funding of ARD in Denmark

The overall goal of Danish development assistance is poverty eradication and is mainly focussed on five main problems and challenges: Human rights, democratisation and good governance; Stability, security and fight against terrorism; Refugees, humanitarian assistance and regions of origin; Environment; and Social and economic development. The overall goal of Danish development assistance falls within the framework of the global Millennium Development Goals (the 2015 goals).

Support to development research and research capacity building must be in compliance with the overall goals for development assistance. Development research is, thus, not a goal in itself, but an instrument that can be used to achieve the overall goal of poverty reduction. Support is, therefore, given within all fields, where research and new knowledge can contribute to solving problems of developing countries.

Since 2001, Denmark's development assistance has undergone a thorough change and reorganisation in order to reflect current global development challenges, threats and opportunities and with a view to ensuring maximum impact and sustainability of the development initiatives. The promotion of sustainable development through poverty-oriented economic growth is the fundamental challenge for Danish development cooperation. Emphasis is, furthermore, put on the fact that research for development has to be demand driven in order to secure the most efficient contribution to the goals in the Danish development assistance.

The major channels for Danish International Development Assistance (Danida) financed research within Agriculture Research for Development include:

- Research within bilateral sector programs
- Danish Council for Development Research (RUF)
- International Advanced Research Centres (IARC) including CGIAR institutes (Consultative Group on International Agricultural Research)
- Danida funded research institutes and centres
- Other activities

The support to research in 2003:

Research integrated in the Sector Programs	Figures not available - up to 10% of the programme funds
Bilateral research (RUF+ENRECA)	DKK 101.7 million
IARC (CGIAR 60 m. others 20 m.)	DKK 80.0 million
Danish centres	DKK 60.3 million
Special report activities	DKK 9.0 million

Danish bilateral development assistance focuses on 15 partner countries. Much of the support to research aims at supporting bilateral development assistance and, therefore, also focuses on these countries. However,

modalities to ensure coherence between research channelled through the sector support programs and research carried out with funding by the Council for Development Research (RUF) still needs to be developed.

## **2. How is Danish support to ARD used?**

### ***Danish Sector Program Support***

The Danida Sector programs have some resources to support research directly. The exact amount is usually not specified in program budgets, but is likely to be within the range of 5-15% of the program budget. Consistent with the key policy issues, an increasing proportion of research will be supported through the sector programs. Such demand driven contract research identified by beneficiaries and formulated in cooperation with Danida staff, can provide a valuable entry point for long-term research initiatives.

### ***International Advanced Research Centres (IARC)***

IARCs receive funds, most of which are available for activities identified by the institute or within a program. Core funding may be restricted to certain priority areas and the level and continuity of support is usually stable.

The CGIAR system benefits from substantial unrestricted core funding from Denmark. The contribution has increased from DKK 1.5m in 1972 to DKK 70m in year 2000 - a period of increase in the number of IARCs. Since 2000 there has been a slight reduction to 2003 when CGIAR systems received DKK. 60m. Almost all support is for non-restricted core funding.

### ***Danish centres***

Support is provided to several Danish institutes and centres, which undertake development research in the agriculture and natural resources sector. The Danish Institute for International Studies (DIIS), Danish Seed Health Centre (formerly the Danish Government Institute of Seed Pathology for Developing Countries (DGISP)) and the Danida Forest Seed Centre (DFSC) receive funds. The latter two are now fully integrated into the Royal Veterinary and Agricultural University.

### ***Competitive funding***

The uncertainty associated with this kind of funding means that activities are usually planned with a fairly short time horizon (1-5 years) although long-term efforts may be funded in a series of phases. However, there is rarely any guarantee that funding of one phase represents a firm commitment to continuing future funding. Each project has to be justified in terms of the rules of the bidding process and thus subject to some kind of continuing overview.

The Council for Development Research (RUF) is an advisory body to the Ministry of Foreign Affairs and submits recommendations to the Minister regarding allocation of grants for development research. The members of the Council have backgrounds in both research and development assistance and the Council aims to ensure a continued quality of the research and the relevance and applicability of research for development assistance.

Several interdisciplinary principles for the prioritising of this support to research activities exist:

- The research must be relevant for the Danish development co-operation.
- Only research of high quality can be supported.
- Research co-operation between the North and the South must be based on the need of the South partners and actively contribute to their capacity building.
- Dissemination of the research results must be an integrated part of all projects.
- Increased open competition about the research support will enhance the quality and increase the spectrum of applicants.
- Concentration of the support will create critical mass within prioritised areas.

Since the spring of 2003, the Council has granted research projects and research capacity building projects (the former Enhancement of Research Capacity program (ENRECA)). Between two thirds and half of Danida funds are used in programs subject to competitive bidding; mainly through RUF. It should be noted that RUF covers several sectors not just agriculture.

RUF operates largely independently of Danida. Research proposals in the areas of agriculture and natural resources are sent for comments to the appropriate sector program within Danida. Prioritisation of support is based, among other things, on the annual research report published by the Ministry of Foreign Affairs. The Council for Development Research's composition reflects a broad representation of competencies, encompassing both researchers and assistance practitioners. RUF comprises 10 members appointed by the Minister for Foreign Affairs. The Council appraises applications for research grants.

### **Networks**

As a supplement to actual research support, Danida continues to provide financial support to research networks within ARD. The primary goal with the support is to promote the use of new knowledge in development aid through contact and dialogue between stakeholders in research and development including The Danish Ministry of Foreign Affairs, NGO's, the private sector and the research community.

#### **NETARD**

The Danish Network for Agricultural Research Development (NETARD) was formed in 1998. The main reason for forming NETARD was a need for strengthening and co-ordinating the Danish resource base and know-how in the field of agriculture and natural resource management in developing countries. This need pertains to co-ordination within the research community, but also to co-ordination and co-operation between Danish development aid and agricultural research, development and education. The ultimate purpose of NETARD is to make it possible for Danish agricultural development research to become a catalyst in Danish development co-operation. NETARD is the Danish forum acting within EFARD and GFAR.

#### **Thematic Network**

As an example of a successful thematic network primarily funded by Danida, the Network for Smallholder Poultry Development supports sustainable improvement of the traditional free-range poultry production in the smallholder sector of developing countries. Activities focus on incremental improvements, which can be adopted by households and individuals where the capacity for significant capital investment is low. An important objective is to help to develop local research capacity - not merely through collaboration with the Danish Network but also by involving partner institutions and researchers in the research process at all levels. It is imperative that the research networks created promote communication between the village and the laboratory and among the local research institutions themselves

#### **Other activities**

Other activities are often of an investigative nature compiling information on specific topics and problems issues for example within the sector programs. Typically they will be short term (usually less than 1 year). They may lead to long-term efforts and are usually funded from the actual research programs.

### **3. National ARD resources**

There is no central coordination of ARD at national level. ARD is driven by demands within the sector programs support or the IARC that receive support although ARD activities for financing through RUF are planned de-centrally by the individual research and development institutions and their scientists.

The two main actors in Denmark are the Danish Institute of Agricultural Sciences (DIAS) - a sector research institution under the Ministry of Food, Agriculture and Fisheries which has several research sites across Denmark and a significant program in areas (mainly in the natural sciences) from the very applied to some important basic research, and the Royal Veterinary and Agricultural University (KVL) based near Copenhagen. As mentioned previously the Danish Seed Health Centre and the Danida Forest Seed Centre are integrated into KVL and work solely with developing countries.

In addition, there are several other Danish institutions with substantial involvement in development research in the agricultural and natural resource area.

The Risoe National Laboratory has important development research programs. Risoe has an important focus on some of the major emerging technologies, especially biotechnology, and an impressive facility with which to back up the work. DPIL has a highly practical program with a clear focus and objective.

The Danish Institute of International Studies (DIIS) is a social science institute that works exclusively with matters of relevance to developing countries. Work at DIIS includes both research and consultancy activities. It has also been working on a program to improve monitoring and evaluation of research for Danida.

Besides the role played by KVL in development research in agriculture and natural resources, contributions are also made by other universities, with work being carried out in research in geography at the University of Copenhagen, in social science research at Roskilde and natural resource management and conservation at Aarhus University.

#### **4. Future ARD plans and priorities**

In the coming years, Denmark will continue to strengthen its foreign and security policy through a focusing of Danish development assistance on five areas:

- Social and economic development
- Human rights, democratisation and good governance
- Stability, security and the fight against terrorism
- Refugees, humanitarian assistance and regions of origin
- Environment

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 4**

FRANCE

# France's Involvement in Development-oriented Agricultural Research

June 2005

## 1. The French national policy for development-oriented research

The CICID (an inter-ministerial committee for international cooperation and development), is a dedicated inter-ministerial committee that determines what the main political orientations are and how development aid is allocated. The Foreign Office, the Treasury and the Department of Trade and Industry are responsible for the CICID secretariat.

On 18 May 2005, CICID validated the orientations which are based on seven sectorial strategies: "water and sanitation", "agriculture and food security", "biodiversity and environmental protection". Research is an integral part of each of these strategies.

As far as higher education and research are concerned, it recommends the following:

*"France will strive to re-establish the role of higher education within development strategies. The aim of development-oriented research is: to help local scientific capacity building; to help integrate southern institutions into international networks; and to encourage southern countries to voice their opinion on the major challenges facing our planet."*

*In view of this, the programmes launched by ANR (the national research agency) will ensure that research for development is included. ANR will study the possibility of setting up a programme for "emerging diseases". ANR will also ensure that the more general programmes include topics specifically concerning southern countries.*

*IRD and CIRAD will develop their partnership with institutions from the South, by using field-based expertise in order to set up joint research units with scientists and institutions from the South. They will strengthen their links and implement an alliance policy to further their scientific expertise".*

Agricultural research for development is an integral part of development aid and meets political objectives. It is also dependent on the national research policy which is determined by the Ministry for Research, along with the Ministry of Agriculture and the Foreign Office.

The aspects of the system relating to the implications for international cooperation are coordinated by the International Committee for Agronomic Research (CRAI). This is made up of the organizations concerned and the Ministries of Education and Science, the Ministry of Agriculture and the Foreign Office. The CRAI executive secretary also represents France within the European initiative for agricultural research for development (IERAD) and the CGIAR bodies.

## 2. The priorities for development-oriented agricultural research

Development-oriented agricultural research is a priority for France, which recognizes the fundamental and basic challenge facing humanity to guarantee food security for everybody on the planet. Given population growth, this would involve doubling agricultural production in the next 25-50 years. However, in addition to this huge need in

terms of quantitative growth, which presupposes a considerable increase in productivity, there are also other issues at stake:

- **Food quality and safety:** consumers are demanding quality products that, above all, meet increasingly stringent and sophisticated health and nutritional requirements. This is due to an improved understanding of the links between food and health, as well as improved analytical capacities.
- **The conservation of the environment, natural resources and biodiversity:** the negative impact and frequent inappropriateness of very intensive input-based systems (fertilizers, pesticides, water, energy) have led to a reappraisal of agriculture with a new ecologically-oriented approach and integrated management systems for cultivated and uncultivated land.
- **The integration of rural societies in globalisation and poverty reduction:** the world's farming communities are largely made up of disadvantaged populations who often have limited access to information and external resources. They suffer from the effects of repeated agricultural economic crises which fragment rural social structures and contribute to the rural exodus.

Today, as well as reaffirming the requirements of production, there is no doubt that appropriate and sustainable agriculture needs to be defined in terms of research priorities. There is now a general consensus on the need to achieve sustainable development. It is enlightening to approach the question by trying to ensure that farming systems are adaptable at the same time as recognising that agriculture has to be profitable and competitive, provide attractive jobs, respect the environment and produce balanced and healthy food.

### **3. The system for development-oriented agricultural research**

Agricultural research is one of the main areas of France's international action in terms of research and innovation. It is one of the scientific fields in which France has an excellent reputation. French agricultural research has an original approach to agriculture and food chains. The use of multidisciplinary scientific approaches, which integrate technical, economic, sociological and political aspects, is particularly pertinent for dealing with sustainable development issues and provides **real insight** when it comes to international joint action. Thus, agricultural research contributes significantly to the scientific, economic and cultural influence that France has around the world.

The research operations are widely distributed beyond national boundaries. Among other things, this has given France's scientific community a tremendous wealth of knowledge and methods. As a result: research questions can be dealt with in a very diverse range of situations; French teams are an integral part of the global scientific community; and operations benefit from the synergy required for the successful management of research work.

The French system is made up of organisations that are specialized in development (IRD, CIRAD), specialized establishments (INRA, CEMAGREF, IFREMER), a general scientific centre (CNRS), university laboratories and a platform (AGROPOLIS), as well as higher education establishments (universities, ENSA, etc.). It is one of the richest and most complete systems in the world.

**The main public research bodies involved in ARD:  
CEMAGREF, CIRAD, IFREMER, INRA, IRD, Agropolis**

CEMAGREF (*Centre National du Machinisme Agricole, du Génie Rural, des Eaux et des Forêts*) aims to conduct, promote and develop all scientific and technological research, technical support, trials, and certification that relate to: rural infrastructure; land use; and the machinery and capital equipment required for such work and for agricultural production. It has 38 research units on 10 sites and is divided into four research departments: fresh water systems management, land management, agricultural and food engineering, water and environmental engineering. It has 1,000 employees, including 450 research scientists and engineers. Budget: 60 million euros.

Contact: [www.cemagref.fr](http://www.cemagref.fr)

CIRAD (*Centre de coopération Internationale en Recherche Agronomique pour le Développement*), specialises in tropical and sub-tropical agriculture. Its mission is to contribute to the sustainable development of these regions through research, experiments, training and the dissemination of scientific/technical information. It has 1,850 employees, including 950 senior staff. CIRAD works in French overseas departments and territories and in some 50 countries in Africa, Latin America, Asia and the Pacific. Budget: 180 million euros.

Contact: [www.cirad.fr](http://www.cirad.fr)

IFREMER (*Institut Français de Recherche pour l'Exploitation de la Mer*), is responsible for carrying out and promoting basic and applied research, consultancy, as well as technological and industrial development designed to: improve our understanding, evaluation and use of ocean resources; ensure sustainable use; improve methods for monitoring, forecasting, protecting and utilising the marine and coastal environment; and to promote the socio-economic development of the maritime world. It has five centres, 72 laboratories and services located in 24 stations along the coast of mainland France and the French overseas departments and territories. IFREMER and its ship-owning subsidiary GENAVIR employ 1,705 people. Budget: 150 million euros.

Contact: [www.ifremer.fr](http://www.ifremer.fr)

INRA (*Institut National de la Recherche Agronomique*), is responsible for organising and conducting scientific research on agriculture, food and land management. It has been one of the backbones of French agronomic research since 1946 and has 14 theme-based research departments, which include a total of 260 research units, over half of which belong to joint research units in 21 regional centres. INRA has 8,600 permanent staff (3,900 scientists and engineers and 4,700 research technicians and support staff) and 2,000 contract staff (PhD students, post-graduate students, foreign scientists). Budget: 570 million euros.

Contact: [www.inra.fr](http://www.inra.fr)

IRD (*Institut de Recherche pour le Développement*), is a scientific institute specialising in development issues for countries in the South. It has about 100 research units, service units and joint units divided into five scientific departments in Metropolitan France (five sites) and French overseas regions (five sites) as well as 25 sites in inter-tropical areas. It has 2,500 employees, including 800 scientists and 750 engineers, technicians and administrative staff. Budget: 190 million euros.

Contact: [www.ird.fr](http://www.ird.fr)

Agropolis is an association composed of: 22 French research, training, and higher education bodies; 2,000 research scientists and teachers, including 500 on assignment in some 60 partner countries; 7,000 students and trainees; 20 foreign laboratories and international networks; and eight well-equipped campuses. Agropolis, which is located in Montpellier, has the world's highest concentration of skills and expertise in the field of agriculture, food, livestock, forestry and the environment geared for the development of the Mediterranean and tropical regions.

Contact : [www.agropolis.fr](http://www.agropolis.fr)

The weight of this system should naturally ensure that France has a major role to play in the management of international agricultural research. However, the reality of the situation is more mitigated. Though French expertise and excellence may be indisputably recognized by international stakeholders, the French system is

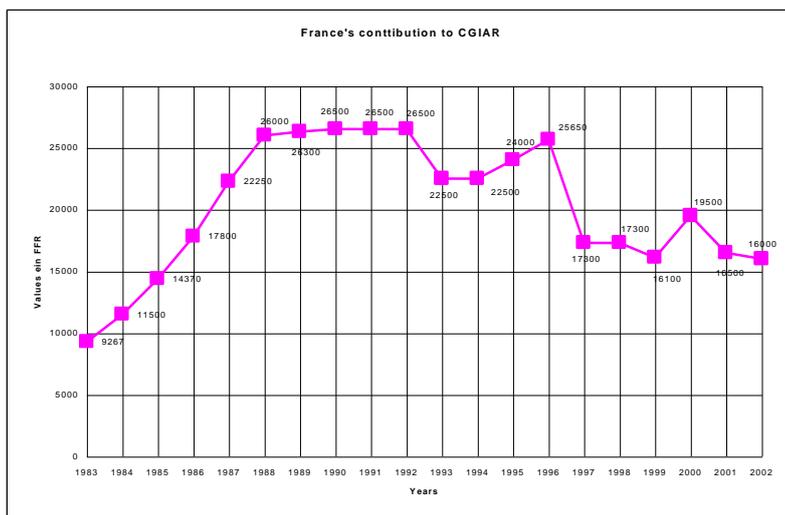
often perceived as being separate. Its relationship with the international system is a little ambiguous. On one hand, it cooperates with international centres and donates to the CGIAR. On the other hand, it claims to have a policy of its own and the capacity to intervene alone. The international centres and CGIAR are happy to collaborate with the French organisations but consider that they are the only true bearers of an international mandate.

**France's contribution to CGIAR**

France's actual contribution to CGIAR consists of a grant that is allocated to the system. It also provides a contribution to international centres in kind, usually in the form of research staff.

The real contribution in 2002 was evaluated to be 7.2M€ overall, which puts France 13<sup>th</sup> in the rank of donors. This consisted of 50 scientists who were made available with support from the corresponding programmes, which is the equivalent to 4.6M€, plus a financial contribution of 2.6M€.

➤ Direct financial contribution



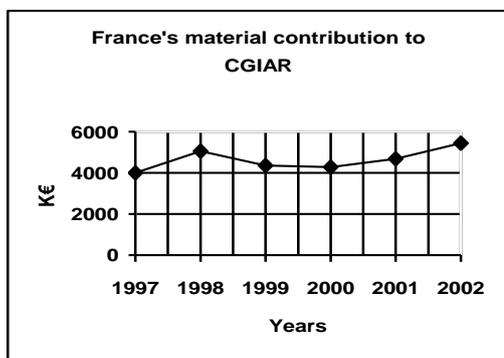
The table shows the evolution of France's contribution between 1983 and 2002. It shows that France's direct financial support has decreased slightly in the last 10 years.

France's direct financial contribution to CGIAR is allocated by Ministry of Foreign Affairs. The International Agricultural Research Commission makes recommendations on the breakdown of credits. After discussion, these recommendations are put together on the basis of propositions made by research bodies. In the past, this *modus operandi* has meant that priority has been given to contributions for specific operations as a function of existing partnerships with French teams. For the past few years, the tendency has been to gradually reorient the French contribution to broader, symbolic actions determined by a more strategic overview.

From 2004 onwards, the French contribution should have increased with the development of three solidarity funds projects, which were planned to support the "challenge programmes". These additional financial contributions should strengthen the policy to reorient the French contribution to leading priority actions, as well as underline France's willingness to support CGIAR reform.

The means made available

Since 1997, the CGIAR centres have had the freedom to negotiate conventions directly with all the donors, independently of CGIAR arbitration. The contractual nature of this new type of collaboration has meant that since 1997, it has been possible to differentiate between financial and material contributions. The latter is linked to specific conventions drawn up between research bodies and CGIAR centres.



The material contribution from French research bodies between 1997 and 2002 has fluctuated between 4 and 5.44 M€. This figure has remained more or less constant since 2003 and it corresponds to 50 scientists who were available to take part in conducting programmes in partnership.

## 5. The other international agricultural research systems

For several years, France has been supporting the launch of a new system of international cooperation, the Global Forum (GFAR<sup>14</sup>).

The founding principle of the Global Forum is that agronomic research should not just benefit researchers, particularly those from scientific teams in the North, but shared with all the stakeholders concerned. In other words, all the stakeholders concerned—particularly southern research systems and representatives of civil society, the beneficiaries and end-users of research, who are often excluded from the debates—should be involved in discussions to define priorities and choose and manage research programmes.

This new concept has led to the definition of a structure of inter-linked forums on different scales: national, regional (Africa, South and Central America, North America, Asia, Europe, etc.) and lastly, global, in which all the stakeholders are represented.

This is a fundamentally democratic system, in which all votes have the same weight. It promotes a new partnership balance, particularly with regard to CGIAR.

The Forum was set up in 1996. The Forum's executive secretary is now based at the FAO, in Rome. It is supported by France, Italy, Germany, FAO and IFAD. Canada joined the new initiative in 2004 by providing a substantial financial contribution. This year, France set up a solidarity fund project DURAS specially for this purpose.

By changing the rules of the partnership, the Global Forum provides an alternative to the previous system, primarily as an international coordination mechanism. While the CGIAR represents the donors above all, the main aim of the Global Forum is to give each stakeholder the capacity to express their opinion and the power to influence decisions at a national, regional and global level. In addition, it also aims to play a regulatory role when

<sup>14</sup> GFAR: Global Forum for Agricultural Research

it comes to the distribution of actions between different partners involved in projects of common interest. In this way, each operator is attributed the mission that they are best able to accomplish.

The Global Forum is still in the early stages of development and some stakeholders are still wary of it. Some people are particularly concerned about how a discussion forum can function on such a large scale.

In any case, the creation of the Global Forum has already had a significant effect on the CGIAR, which is being re-organised so that it can meet expectations with regard to consultations with stakeholders. Whether this awareness will have a real impact on how the system functions<sup>15</sup> remains to be seen.

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<sup>15</sup> The difficulties expressed publicly by the two “civil society” and “private sector” committees, which were created by the CGIAR for this purpose, show that there is still a long way to go before the system really takes notice of external voices.

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**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 5**

GERMANY

# ARD Country Profile Germany:

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# Ministries involved in agricultural research for development

*Brief presentation of the three ministries BMZ, BMBF and BMVEL*

## **Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL)**

<http://www.verbraucherministerium.de/>

### **- Policy orientated funding (agriculture)**

In Cooperation with FAO, BMVEL (dep. E4) is engaged in the field of Foodsecurity. Presently it is aimed at integrating the key subjects of Fair Trade, International Cooperation, Sustainability and Ecological Cultivation farming into the research of the Federal Research Institutes. An additional project deals with the implementation of the Right to Adequate Food and indicators.

BMVEL finances a bilateral FAO-trustfund for Foodsecurity-Projects.

The Federal Research Sector of the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL) comprise seven Federal Research Institutes, The German Centre for Documentation and Information in Agriculture (ZADI, [www.zadi.de](http://www.zadi.de)), Federal Institute for Risk Assessment (BfR, [http://www.bfr.bund.de/cd/template/index\\_en](http://www.bfr.bund.de/cd/template/index_en)) and six Institutes of the Leibniz-Gemeinschaft (WGL). Most of these institutions are working in the field of ARD. (See Chapter 4)

## **Federal Ministry for Economic Cooperation and Development (BMZ)**

<http://www.bmz.de>

### **- Policy orientated funding (development)**

The BMZ is responsible for the co-operation of the German government with developing countries. The BMZ is also handling the German budget to support the CGIAR. In the year 2000 the total budget of the BMZ amounted to 3,6 billion Euros, which is about 1,5 % of the federal budget. About 150 Millions were spent for projects in agriculture, forestry and fishery.

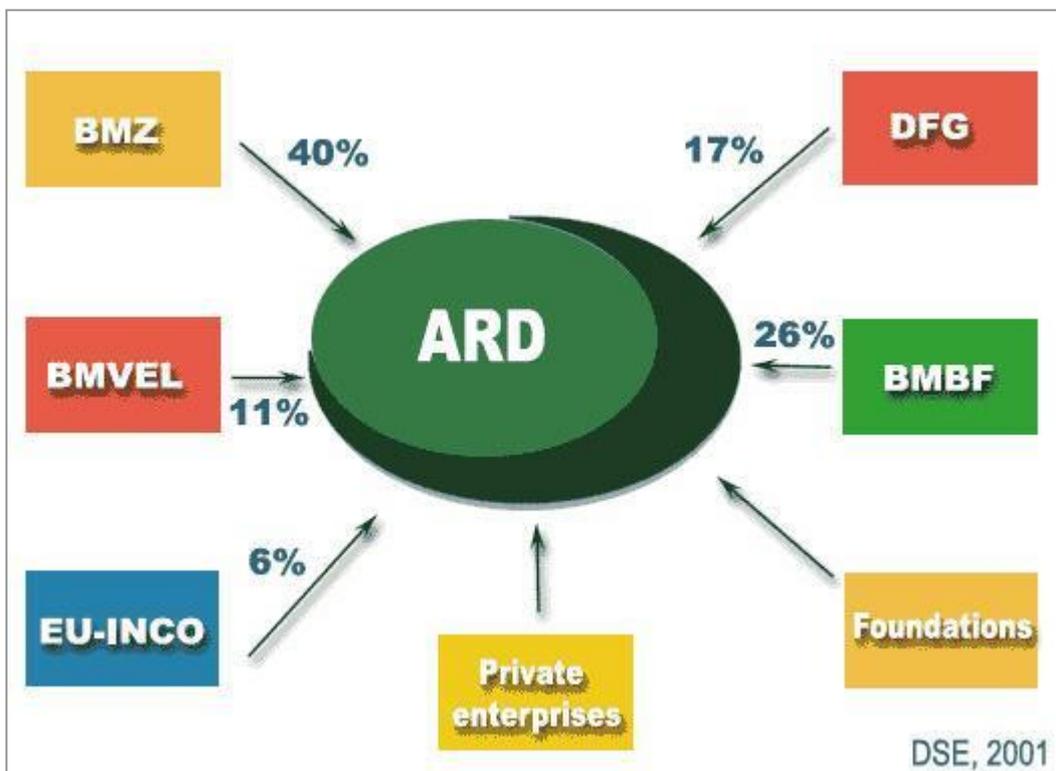
## **Federal Ministry of Education and Research (BMBF)**

<http://www.bmbf.de>

### **- Program orientated funding**

The BMBF supports education and research in numerous ways: by establishing and developing the necessary structures, by defining general conditions, by developing, testing and implementing concepts and by providing support for individuals or groups of persons.

By means of special funding programmes, the BMBF supports innovative projects and ideas in the research sector. The fields supported include basic scientific research, sustainable development, new technologies, information and communications technologies, new media in education; life sciences, work organisation; transport, space activities, building; structural research support in higher education as well as support for innovation and technology transfer. The budget of the BMBF in the year 2001 amounted 8 Billion Euros. About 185 Million Euros were spend on "environmentally suitable, sustainable development.



Financial contributions towards ARD, DSE (InWent), 2001, Image, InfoSys+

## **Institutions funding/executing ARD programmes/projects for the federal government**

### **DFG Deutsche Forschungsgemeinschaft**

<http://www.dfg.de> (More Details see chapter 5)

DFG is the central public funding organisation for academic research in Germany. DFG is thus comparable to a Research Council (in British and western European terminology) or a (national) Research Foundation (in American and far eastern terminology).

DFG's mandate according to its statutes is to serve science and the arts in all fields by supporting research projects carried out in universities and public research institutions in Germany, to promote cooperation between scientists, to forge and support links between German academic science and industry, and with partners in foreign countries. In doing this, it gives special attention to the education and support of young scientists and scholars.

Deutsche Forschungsgemeinschaft  
Kennedyallee 40  
53175 Bonn (Germany)  
Phone: (+49)228 885 1 - Fax: (+49)228 885 2777  
E-Mail: [postmaster@dfg.de](mailto:postmaster@dfg.de)

### **GTZ Deutsche Gesellschaft für Technische Zusammenarbeit GmbH**

<http://www.gtz.de>

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH is a government-owned corporation for international cooperation with worldwide operations. In more than 130 partner countries, GTZ is supporting c. 2,700 development projects and programmes, chiefly under commissions from the German Federal Government. GTZ's aim is to improve the living conditions and perspectives of people in developing and transition countries.

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH  
Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn  
Germany  
Telephone +49 (0)6196 79-0  
Telefax +49 (0)6196 79-1115

### **DED The German Development Service**

<http://www.ded.de>

The DED is the development service of the Federal Republic of Germany for personnel cooperation. Almost 1 000 development workers are currently working in approximately 40 countries.

The DED has the following tasks:

- It places professionally experienced and socially committed specialists at the disposal of developing countries
- It supports local organisations and self-help initiatives by counselling, financing small programmes and promoting local specialists.
- It recruits German development workers wishing to serve as United Nations Volunteers (UNV).
- It promotes understanding for the situation of people in developing countries among the German public and draws attention to questions concerning the common interests and problems of the One World.

The DED has no projects of its own, but reacts at the request of partner organisations in the host countries. The projects which the DED supports in the developing countries are organised according to fields of co-operation: training in technical skills and trades; agriculture, forestry and natural resources management; health; general education; building and housing development; community development; small businesses, management and administration. The DED maintains offices in the host countries, generally in the capital. They are run by field directors who represent the DED vis-à-vis local partners and supervise the DED programmes in these countries. The DED has the legal form of a non-profit-making, limited liability company owned jointly by the Federal Republic of Germany, represented by the Federal Minister for Economic Cooperation and Development, and the working group "Learning and Helping Overseas", a registered association. The DED is financed by the federal budget.

Deutscher Entwicklungsdienst (DED)  
Gemeinnützige Gesellschaft mbH  
Tulpenfeld 7, D-53113 Bonn  
Tel.: +49-(0)228-2434-0  
Fax: +49-(0)228-2434-111  
poststelle@ded.de

**InWEnt – Internationale Weiterbildung und Entwicklung gemeinnützige GmbH ( Capacity Building International, Germany )**

<http://www.inwent.org/>

InWEnt is an organization for international human resources development, advanced training and dialogue. It was established through a merger of Carl Duisberg Gesellschaft e.V. ( CDG ) and the German Foundation for International Development ( DSE ).

InWEnt provides a forum for development policy dialogue and offers initial and advanced training of specialists and executive personnel from developing and transitional countries. In addition, it supports experts of German technical and cultural co-operation, and their families, in their preparation for assignments in developing countries, and maintains the largest documentation and information centre on development co-operation issues in Germany. Together with partner organisations in Germany and abroad it forms an international network offering practice-oriented training, exchange and foreign language programs.

InWEnt  
Tulpenfeld 5  
53113 Bonn  
Tel: ++ (0)228 2434-5  
Fax: ++(0)228 24 34-999  
future@inwent.de.

**CIM – the Centrum für internationale Migration und Entwicklung**

<http://www.cimonline.de>

CIM convey experienced German and European experts in African, Asian and Latin American countries, as well as in Central and Eastern Europe and the newly independent states. It allows counterpart organisations in these countries to recruit highly qualified experts on the European labour market, and to use their expertise specifically for a limited period. The reason: these states often lack the experienced, highly qualified experts needed to occupy important posts. CIM, a joint operation of the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH and the German Central Placement Office (ZAV) of the Federal Employment Institute (BA), is a human resources provider with a development-policy mission. State and parastatal institutions in partner countries, and private-sector employers can inform CIM of their requirements for experts. However, before CIM places suitable staff, it will check whether the position in question is expedient in development-policy terms. CIM is largely financed by the Federal German Ministry for Economic Cooperation and Development (BMZ), but other ministries and institutions also contribute to funding. Worldwide, more than 700 CIM experts are currently working in over 80 countries.

Centrum für internationale Migration und Entwicklung (CIM)  
Barckhausstr. 16  
60325 Frankfurt am Main  
Federal Republic of Germany  
Tel.: ++ 49 (69) 71 91 21-0  
Fax: ++ 49 (69) 71 91 21-19  
e-Mail: [CIM@gtz.de](mailto:CIM@gtz.de)

## Fora and networks concerned with ARD policy

### DFOR German Forum on Research

[www.dfor.de](http://www.dfor.de)

18 German organisations set up the German Forum on Research for Development, known by its German acronym DFOR, at a conference in Feldafing near Munich on 12 December 2001. The Forum sees itself as an interest group for strengthening research for development and co-operation in the fields of food, agriculture and forestry, fisheries, environmental protection, sustainable use of natural resources, and rural development. DFOR aims to promote dialogue and co-operation between the various actors in development-related research in Germany and to provide a platform for exchanging ideas and co-ordinating joint activities.

#### Secretariat DFOR

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Phone: +49 (0)8157.938-0  
Fax: +49 (0)8157.938-777  
E-Mail: [dfor@inwent.org](mailto:dfor@inwent.org)

### ATSAF Council for Tropical and Subtropical Agricultural Research

<http://www.atsaf.de/>

The goal of ATSAF is a research association of international orientated agricultural and ecosystem research in Germany. ATSAF unites researchers and experts for development in the fields of agricultural science, ecology, veterinary medicine, food, forestry, fishery and other disciplines with the main focus on research for development for tropical and subtropical countries and transformation countries.

#### **ATSAF**

C/O Universität Hohenheim (430)

70593 Stuttgart

Telefon: ++ (0)711 470 69 00

Fax: ++ (0)711 459 26 52

E-Mail: [atsaf@atsaf.de](mailto:atsaf@atsaf.de)

### **BEAF Advisory Service on Agricultural Research for Development**

<http://www.beaf.de/>

The Beratungsgruppe Entwicklungsorientierte Agrarforschung (Advisory Service on Agricultural Research for Development) is a project implemented by the Deutsche Gesellschaft für Technische Zusammenarbeit ([GTZ](#)) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development ([BMZ](#)). BEAF advises BMZ on all issues related to international agricultural research for development. The project is based at GTZ-headoffice in Eschborn and in Bonn.

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Department 45/Rural Development

Beratungsgruppe Entwicklungsorientierte Agrarforschung (BEAF)

Dag-Hammarskjöld-Weg 1-5

P.O. Box 5180

65726 Eschborn, Germany

Beratungsgruppe Entwicklungsorientierte Agrarforschung (BEAF)

Advisory Service on Agricultural Research for Development

Tulpenfeld 4

53113 Bonn, Germany

### **German NGO Forum on Environment & Development**

<http://www.forumue.de>

Six months after the UNCED in Rio, on December 16, 1992, thirty-five organisations founded the German NGO Forum on Environment & Development in order to promote the following objectives:

- Taking seriously the outcome of Rio and to try to do whatever possible to eradicate poverty world-wide and to protect the environment;
- Lobbying both at national and international level to implement the decisions passed in Rio, particularly Agenda 21;
- Establishing working groups which, for example, develop position papers on the most pressing issues in the Rio follow-up;
- Coordinating education and information programs;

- Increasing pressure on government and legislative bodies by joint NGO actions;
- Acting as a contact for international partners.

Forum Umwelt & Entwicklung  
Am Michaelshof8 - 10  
D - 53177 Bonn

Telefon: +49-228- 359704  
Fax: +49-228- 92399356  
E-mail: info@forumue.de  
Internet: <http://www.forumue.de>

Project manager: Jürgen Maier

## **GARDEN-InfoSys**

GARDEN-InfoSys (<http://www.garden-infosys.de>), the Information System for German Agricultural Research for Development, Environment and Nutrition is one of the two German Nodes of EARD-InfoSys+. The objective of GARDEN-InfoSys is to gather the widely scattered information on ARD in Germany and make it accessible via one page. In order to facilitate transparency and further scientific cooperation,

GARDEN-InfoSys assists in accessing German web resources in all areas of research for development: agriculture, nutrition, environment and many other related fields. It serves as an information and communication platform. Everybody involved in German ARD is invited to participate by adding links, news, events and expertise.

With regard to the agreement on cooperation of Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL), Federal Ministry for Economic Cooperation and Development (BMZ), Deutsche Forschungsgemeinschaft (DFG) and the Advisory Service on Agricultural Research for Development (BEAF), BMVEL supports the extension of the German contribution to EARD-InfoSys, the project GARDEN-InfoSys.

### **GARDEN-InfoSys**

ZADI  
Villichgasse 17  
D-53177 Bonn  
Fon: +49 228 9548-365/4  
Fax: +49 228 9548-111

## **SUSTAINET**

[www.sustainet.org](http://www.sustainet.org)

As part of the Programme of Action 2015 of the Federal Government and has launched the cooperative project Sustainet - Sustainable Agriculture Information Network, which was recommended by the German Council for Sustainable Development. It is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), the aid organisations Brot für die Welt, German Agro Action, Misereor as well as the

Deutsche Gesellschaft für Technische Zusammenarbeit. They have joined forces with other partners to analyse the problem of often insufficient dissemination of promising approaches, and then to take action to find solutions.

Project Secretariat Sustained  
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Postfach 51 80 D - 65726 Eschborn - Germany

## **Important research institutes and universities for ARD in Germany**

### **ARTS Agricultural Science and Resource Management in the Tropics and Subtropics**

<http://www.uni-bonn.de/arts/>

The two year ARTS postgraduate study program is designed to expand a student's overall background in basic and applied Resource Management and Agricultural Science as it relates to major problems affecting the environment in tropical and subtropical agricultural production systems. The ARTS programme opens experienced scientists and administrators an opportunity to broaden their knowledge through specially designed majors in Resource Management or Agricultural Science.

### **ZEF University of Bonn: Centre for Development Research**

<http://www.zef.de/>

The Centre for Development Research (ZEF) is a major scientific institute within the University of Bonn. It is an international, interdisciplinary research institute that contributes to resolving global development problems. It actively supports interdisciplinary collaboration. The goal of development research at ZEF is to contribute tangibly to sustainable development and the reduction of absolute poverty. With its international staff, the ZEF addresses global and regional development issues, transition economies and development aid and manages the research foci and projects relating to them.

### **Humboldt University**

Humboldt University, Berlin. Faculty of Agriculture and Horticulture

[http://www.agrar.hu-berlin.de/index\\_en.html](http://www.agrar.hu-berlin.de/index_en.html)

The division's field of activities are corporate questions in terms of agricultural use of resources in a sustainable way

### **TROZ University of Hohenheim:**

Centre for Tropical Agriculture

<http://www.uni-hohenheim.de/tropenzentrum/>

The departments research activities aim at designing diversified, self-sustaining, low-input and energy-efficient agricultural systems with a high but sustainable level of productivity.

#### **GhK University of Kassel**

Faculty of Agriculture, International Rural Development and Environmental Protection (FB 11)

<http://www.wiz.uni-kassel.de/wiz.html>

Tradition and modernity: two characteristic traits of the Faculty of Agriculture, International Rural Development and Environmental Protection (Faculty 11). For almost 100 years Witzenhausen has been a centre for education and training in the field of tropical and subtropical agriculture and rural development.

**CeTSAF University of Göttingen:**  
Centre for Tropical and Subtropical Agriculture and Forestry

<http://www.gwdg.de/%7Ecetsaf/>

The Centre for Tropical and Subtropical Agriculture and Forestry - CeTSAF - is a joint scientific establishment of the Departments of Agricultural Sciences and Forestry and Ecology Sciences at the Georg-August-University in Göttingen.

The Federal Research Institutes

<http://www.bmvel-forschung.de>

The Federal Research Sector of the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL) comprise seven Federal Research Institutes, The German Centre for Documentation and Information in Agriculture (ZADI, [www.zadi.de](http://www.zadi.de)), Federal Institute for Risk Assessment (BfR, [http://www.bfr.bund.de/cd/template/index\\_en](http://www.bfr.bund.de/cd/template/index_en)) and six Institutes of the Leibniz-Gemeinschaft (WGL).

#### **Federal Research Institutes / Bundesforschungsanstalten:**

- Federal Agricultural Research Centre - Bundesforschungsanstalt für Landwirtschaft (FAL), Braunschweig, <http://www.fal.de/en/>
- The Federal Biological Research Centre for Agriculture and Forestry - Biologische Bundesanstalt für Land- u. Forstwirtschaft (BBA), Berlin u. Braunschweig, <http://www.bba.de/english/bbaeng.htm>
- Federal Centre for Breeding Research on Cultivated Plants - Bundesanstalt für Züchtungsforschung an Kulturpflanzen (BAZ), Quedlinburg, <http://www.bafz.de/>
- Federal Research Centre for Nutrition and Food - Bundesforschungsanstalt für Ernährung und Lebensmittel (BFEL), Karlsruhe, <http://www.bfel.de/>
- Federal Research Centre for Forestry and Forest Products - Bundesforschungsanstalt für Holz- und Forstwirtschaft (BFH), Hamburg, <http://www.bfafh.de/indexe.htm>
- Federal Research Institutes for Fisheries - Bundesforschungsanstalt für Fischerei (BFAFi), Hamburg, <http://www.bfa-fish.de/index-e.html>
- Federal Research Institute for Animal Health Friedrich-Loeffler-Institut, Bundesforschungsinstitut für Tiergesundheit (FLI), Insel Riems. <http://www.fli.bund.de/index.php?id=2&L=en>

#### **Institutes of the Leibniz-Gemeinschaft (WGL):**

- Deutsche Forschungsanstalt für Lebensmittelchemie (DFA), Garching, <http://dfa.leb.chemie.tu-muenchen.de/>

- Leibniz Institute for for Agricultural Engineering Bornim - Leibniz-Institut für Agrartechnik Bornim e.V. (ATB), Potsdam-Bornim, [http://www.atb-potsdam.de/index\\_e.htm](http://www.atb-potsdam.de/index_e.htm)
- The Institute of Vegetable and Ornamental Crops - Institut für Gemüse- und Zierpflanzenbau (IGZ) Großbeeren/Erfurt e.V., <http://www.igzev.de/>
- Research Institute for the Biology of Farm Animals - Forschungsinstitut für die Biologie landwirtschaftlicher Nutztiere (FBN), Dummerstorf, <http://www.fbn-dummerstorf.de/en/home/index.htm>
- Leibniz-Centre for Agricultural Landscape Research (ZALF) e. V. - Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e.V., Müncheberg, [http://www.zalf.de/home\\_zalf/gb\\_index.html](http://www.zalf.de/home_zalf/gb_index.html)
- Institute of Agricultural Development in Central and Eastern Europe (IAMO) - Institut für Agrarentwicklung in Mittel- und Osteuropa (IAMO), Halle/Saale, [http://www.iamo.de/web\\_englisch/index\\_en.htm](http://www.iamo.de/web_englisch/index_en.htm)

## The DFG - German Research Foundation

<http://www.dfg.de/en/>

The DFG is the central public funding organisation responsible for promoting research in Germany. Its activities focus on funding research projects carried out by scientists and academics working at universities or research institutes and on selecting the best projects in a process of fair and transparent competition. The work of the DFG serves all branches of science and the humanities to reflect its role as the self-governing organisation of German science and research. Its legal status is that of an association under private law. DFG membership is made up of German universities, non-university research institutions, scientific associations as well as the Academies of Science and Humanities. The DFG receives its funding from the federal (Bund) and state (Länder) authorities, which are represented on all decision-making bodies, whereas scientists and academics hold the majority.

[http://www.dfg.de/dfg\\_im\\_profil/struktur/geschaeftsstelle/ansprechpartner/1352.html](http://www.dfg.de/dfg_im_profil/struktur/geschaeftsstelle/ansprechpartner/1352.html)

Dr. Patricia Schmitz-Möller

Programmedirector

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Telefon: +49-(0)228-885-2797

Kennedyallee 40

D-53175 Bonn

### Funded Projects In the Agriculture and forestry science:

- FOR: Forschergruppen / Research Units
- GRK: Graduiertenkollegs / Research Training Groups
- SFB: Sonderforschungsbereiche / Collaborative Research Centres
- SPP: Schwerpunktprogramme / Priority Programmes

### Graduiertenkolleg 1070

Sino-German Research Training Group

Modeling Material Flows and Production Systems for Sustainable Resource Use in Intensified Crop Production in the North China Plain

[http://www.dfg.de/forschungsfoerderung/koordinierte\\_programme/graduiertenkollegs/liste/gk\\_detail\\_1070.html](http://www.dfg.de/forschungsfoerderung/koordinierte_programme/graduiertenkollegs/liste/gk_detail_1070.html)

<http://rtgchina.uni-hohenheim.de/>

<http://rtgchina.uni-hohenheim.de/index-Dateien/overview.htm>

<http://rtgchina.uni-hohenheim.de/index-Dateien/research.htm>

**FOR 431**

Protected cultivation - an approach to sustainable vegetable production in the humid tropics

[http://www.dfg.de/forschungsfoerderung/koordinierte\\_programme/forschergruppen/liste/for\\_detail\\_431.html](http://www.dfg.de/forschungsfoerderung/koordinierte_programme/forschergruppen/liste/for_detail_431.html)

<http://www.sus-veg-thai.de/>

**SFB 564**

Sustainable land use and rural development in mountainous regions of Southeast Asia

[http://www.dfg.de/forschungsfoerderung/koordinierte\\_programme/sonderforschungsbereiche/liste/sfb\\_detail\\_564.html](http://www.dfg.de/forschungsfoerderung/koordinierte_programme/sonderforschungsbereiche/liste/sfb_detail_564.html)

[http://www.troz.uni-hohenheim.de/research/SFB564\\_1](http://www.troz.uni-hohenheim.de/research/SFB564_1)

**FOR 536**

Matter fluxes in grasslands of Inner Mongolia as influenced by stocking rate

Kiel, Beijing

<http://www.magim.net/>

[http://www.dfg.de/forschungsfoerderung/koordinierte\\_programme/forschergruppen/liste/for\\_detail\\_536.html](http://www.dfg.de/forschungsfoerderung/koordinierte_programme/forschergruppen/liste/for_detail_536.html)

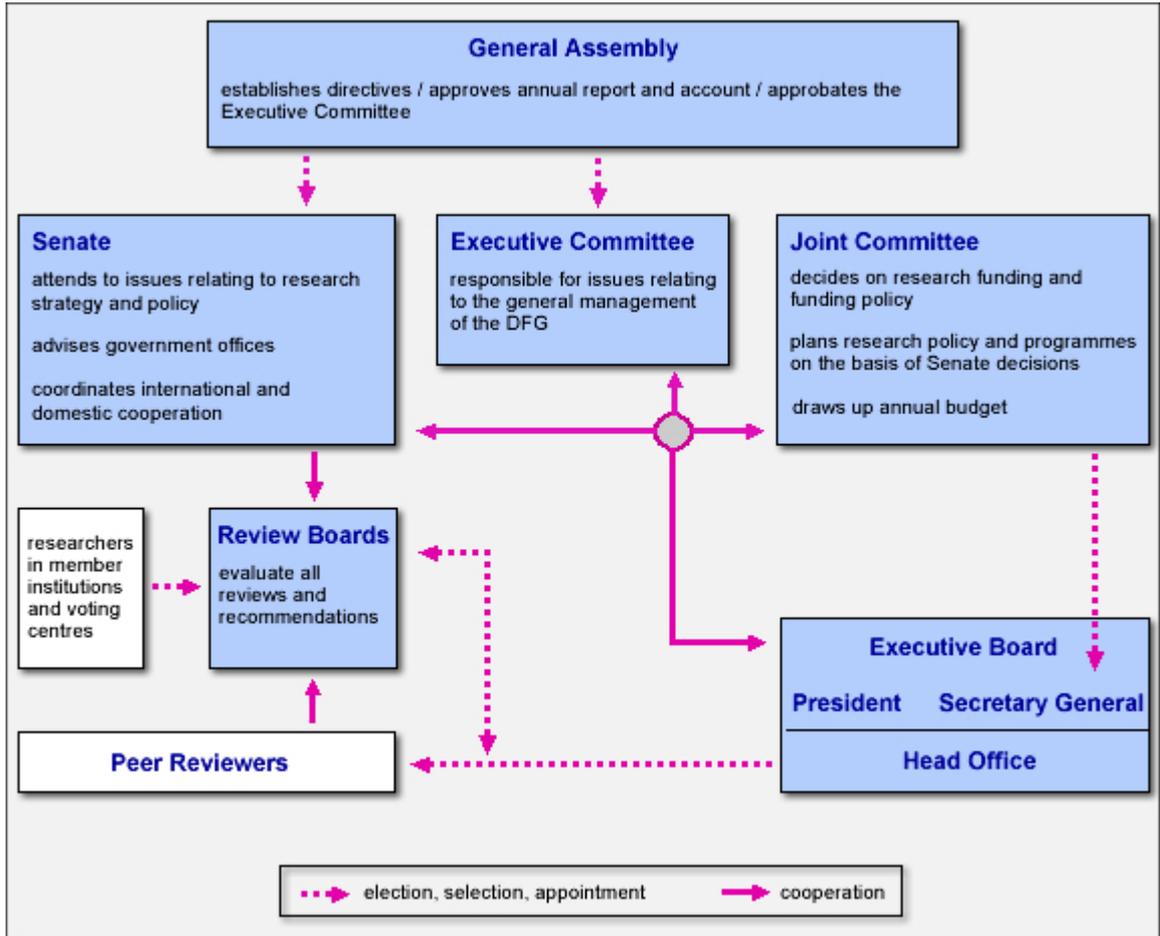
**SFB552**

Stability of Rainforest Margins in Indonesia

Göttingen (different locations in Indonesia)

<http://www.storma.de/>

[http://www.dfg.de/forschungsfoerderung/koordinierte\\_programme/sonderforschungsbereiche/liste/sfb\\_detail\\_552.html](http://www.dfg.de/forschungsfoerderung/koordinierte_programme/sonderforschungsbereiche/liste/sfb_detail_552.html)



Governance at DFG. Source: [http://www.dfg.de/en/dfg\\_profile/structure/](http://www.dfg.de/en/dfg_profile/structure/)

## Important Initiatives

### EIARD

Germany is an active member of European Initiative on International Agricultural Research for Development (EIARD)

### Annual International Policies-Against-Hunger-Workshops, Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL)

[www.policies-against-hunger.de](http://www.policies-against-hunger.de)

The objective of the workshops are to elaborate recommendations to develop and to apply innovative approaches and to create an enabling environment to solve the problems of hunger and malnutrition:

2002: The Right to adequate Food

2003: Food Aid and sustainable Food Security

2004: Agricultural Trade and Food Security

2005: Implementation of the Voluntary Guidelines of the Right to adequate Food

### Statusseminar German contributions to global Foodsecurity, FAL, 21. November 2003

–

In German: <http://www.isicad.org/docs/statusseminar031594.pdf>

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 6**

HUNGARY

## **The Hungarian National ARD (Sub)Programme (Summary)**

### **1. How ARD is planned and funded at national level:**

In Hungary the agricultural research and most of the agricultural research institutions belong to (the competence of) the Ministry of Agriculture and Rural Development. In the past decades, our Ministry signed intergovernmental or interdepartmental cooperation agreements with the partner Ministries of several developing countries, mainly in South America, South-East Asia, North Africa and the Middle East, as well as in the present CIS States. We gave training, extension and higher education to a lot of specialists, researchers of the developing countries. Our experts and researchers executed consulting activities in these countries and helped in the development of the agricultural sector and its institutional system. Our research institutes – on basis of our bilateral cooperation agreements – initiated cooperation with the partner institutions and upon strengthening their relations, they concluded agreements with their partners.

At the planning of the ARD programme, our Ministry takes into consideration its existing bilateral agreements, the priorities of the International Development Cooperation Programme of the Hungarian Ministry of Foreign Affairs, the capacities and partner relations of our institutes, and last but not least the demands and offers for cooperation of the parties.

Concerning funding, our possibilities are still modest. 25 research institutes belong to our Ministry, and their basic operation expenses are funded by us from the central Budget. The institutes can complete their receipts out of their service incomes and by money won at competitions. In addition, our Ministry can support the institutes in the execution of certain important tasks, research programmes, cooperation programmes and projects arising from our bilateral agreements.

As regards the 2nd ERA-ARD Sub-Programme, our Ministry supported even directly the expenditures of the 2 institutes (Research Institute for Fisheries, Aquaculture and Irrigation – RIFAI; Institute for Small Animal Research – ISAR). The RIFAI has applied for and will receive funds this year from the IDC Programme of the MFA as foreseen to the execution of their ARD Project for Vietnam and Laos. This is a new element, and the funds to our ARD activities can be considerably increased by this means.

### **2. National ARD priorities:**

We determine our ARD priorities on basis of the institutional capacities, our funding possibilities, and our bilateral contractual relations. The situation and demand of our partners are also taken into consideration.

Until now, in South-East Asia (first of all Vietnam, Laos, Thailand and China) we laid stress on the development of fishery and aquaculture resp. small animal breeding (poultry, rabbit). The principal elements in the cooperation are the development of educational and research institutions, the development of technology, keeping, breeding and feeding. Today, the most important is the sustainable animal keeping and breeding, which is environment friendly, and makes possible new and better sources of livelihood for the rural population, as well as a better supply with quality foods for the developing countries. In this respect, we did the most in Vietnam, and our cooperation covered beside fish and waterfowls, poultry and rabbit species. In the future, we intend to extend it to other animal species (mainly cattle, sheep and goat), further on to cereals, fruits and vegetables.

We would like to include in our ARD programme the drought-resistant cereals and virus-free fruit propagation material in certain regions (e.g.: South America, North Africa, Middle and Far East), as soon as we have suitable funds for that purpose. (This will relate to the 1st Sub-Programme.)

### **3. National ARD resources (main institutions involved with their human, physical and financial resources):**

At the moment our Ministry finances the ARD activities of our agricultural research institutes. The research institutes themselves take part in the financing with their own resources, too. This is the first year when there are possibilities to gain support from the IDC Programme Funds of the MFA for ARD projects in the frame of competitions. By this our ARD resources can be considerably widened.

At present, the most active institutes in ARD are: RIFAI and ISAR.

**RIFAI (Research Institute for Fisheries, Aquaculture and Irrigation – HAKI):**

It disposes a staff of about 90 persons including 26 scientific researchers. The institute itself can be considered as an educational, R+D and demonstration complex in fish breeding, aquaculture, irrigation and rice growing, with an experimental farm of about 300 hectares. It is an active participator in international cooperation, member of several international organizations. Earlier, the experts of the institute made consulting and expertise first of all on behalf of the FAO in the developing countries (mainly in South America and South-East Asia) in the field of fish hatching, alevins raising, fish feeding, technology developing, improvement of fish farms, development of education, consulting and of the institutional system. It took part in the Dutch WES Project in the Mekong River Delta. The Institute disposes of suitable technological equipment, laboratories, and a basis for education.

The yearly budget is around 2,0 M EUR. Nearly half of it funded by our Ministry from the Central Budget. Besides, our Ministry supports with funds the ARD programme of the RIFAI also directly.

**ISAR (Institute for Small Animal Research – KÁTKI):**

The staff is about 50 persons, out of which 29 researchers (including 10 persons disposing of scientific degrees). The institute has got poultry and rabbit farms, a bee-keeping farm, laboratories, a gene bank of Hungarian traditional and local poultry species, a museum of apiculture, a basis for education. The most important in their ARD activity is the cooperation with Vietnamese partners dating back to several decades. The institute supplied poultry and rabbit species to Vietnam in the frame of common breeding programmes, collaborates in gene preservation, gives education, vocational training and extension, and executes consulting activities. The yearly budget of the institute amounts to about 1,0 M EUR, approximately half of it is funded by our Ministry from the Central Budget. Our Ministry supports also directly the ARD programme of the institute.

**4. Rough estimation/description of the ARD programmes supported at national level (topics funded, level of funding, type of research/innovation):**

**RIFAI (HAKI):**

A project of several years for Vietnam and Laos.

The main aim is the further development of the Vietnamese aquaculture educational and R+D institutions. Beside this, educational programmes/modules will be worked out and applied in Hungary in the field of the development of sustainable aquaculture technologies in respect of the tropical developing countries.

In 2004, funds of about 250.000 EUR are being allocated, out of which about 200.000 EUR through competition of the IDC programme of the MFA, and about 50.000 EUR from the resources of the institute (partly by the support of our Ministry).

**ISAR (KÁTKI):**

A programme of several years for Vietnam is being prepared.

It will cover the educational and R+D cooperation in the field of poultry and rabbit breeding.

In 2004, about 20.000 EUR may be expected out of the resources of the institute (partly funded by our Ministry). Further funds may be available out of the IDC programme of the MFA, the application of the institute is being prepared.

The project will cover consulting and expertise in Vietnam, education, vocational training and extension in Hungary.

## **5. Future ARD plans and priorities:**

Our Ministry has not yet elaborated our ARD programme for the coming 3-5 years. As per our present ideas, our ARD activity may cover first of all the following regions:

- South-East Asia (e.g.: Vietnam, Laos, Thailand, China)
- CIS States (e.g.: Ukraine, Kazakhstan)
- the Balkans (e.g.: Serbia, Bosnia, Macedonia)
- North Africa and the Middle East (e.g.: Tunisia, Egypt)
- Latin-America (e.g.: Peru, Chile, Columbia, Venezuela)

The professional fields concerned are as follows: fisheries and animal breeding; cereal breeding; vegetables, fruits growing, and viticulture-viniculture; food industry (meat processing and preserving); food safety; biotechnology; forestry.

The principal forms of activities are the following:

- education, vocational training, extension in Hungary
- expertise, consulting in the partner countries
- supply of breeding and propagating material
- adaptation experiments
- technology development
- common research activities and programmes
- exchange of researchers, professors and students
- organization of conferences, workshops, etc.

Budapest, 29.04.2004.

András TASNÁDI  
Ministry of Agriculture and Rural Development  
Dept. for Education and R+D  
Budapest/Hungary

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 7**

ITALY

# DESCRIPTION OF THE ITALIAN NATIONAL ARD PROGRAMME

## 1) HOW ARD IS DEFINED, PLANNED AND FUNDED AT NATIONAL LEVEL.

There is no ARD programme as such in Italy.

For ARD is meant any research focusing on genetic research, crop cultivation, animal husbandry, processing of plant and animal products, food safety related to human health, environment conservation and rural development. As for research protocols and results are obviously influenced by the local socio-economical conditions and technological development, research should be carried out in the interested countries. Nonetheless, results of new and even past researches undertaken in developed countries, can still be adapted to the tropical and subtropical rural world.

Advanced technologies are utilised for information on land use, and applied for natural resources evaluation and early warning.

The objectives of the Italian ARD programme are the fight against poverty, considered the major cause of undernourishment, and to favour the socio-economic and environmental sustainable development.

Only a small percentage of the research carried out is undertaken directly in developing countries. This is evident considering the budget allocated to research. Roughly 400,000 k€ is the amount utilised for agricultural research in general, of which only 2% is available for ARD.

Due to the South of Italy climatic conditions similar to sub tropical environments, applied research carried out in Italy can be exported and utilised in sub tropical countries, of course adapting it to the local technological and social context and local needs.

The Ministry of Foreign Affairs, through its Directorate General for Development Cooperation, finances programmes of rural development, allocating a budget of about € 1,000 millions. Although not specifically addressed to ARD, very often ARD is a 'volet' of these programmes. The budget amount is, however, more than double the amount indicated previously out of the 2% made available for ARD by other institutional organisations.

Furthermore, the Italian Cooperation, at multilateral level, allocates a yearly financial contribution to CGIAR that, in 2005, amounted to € 5.5 millions.

Decentred Cooperation and NGOs' programmes, as for the Ministry of Foreign Affairs, have no specific funds directly available to ARD, but inside their broad agricultural programmes there are funds available to finance specific researches, finalised to the success of the programme.

ARD occasionally undertaken by the private sector (consulting firms and implementing enterprises) would appear of no particular relevance.

It is generally very much felt the need of an *authority* to coordinate public and private ARD initiatives and make information available.

## 2) NATIONAL ARD PRIORITIES

The Italian Forum on Agricultural Research identified as thematic priorities the following:

- Germplasm improvement,
- Development of production systems

- Animal husbandry
- Water and soil resources
- Crop pathology
- Forestry and Agro-forestry
- Agricultural Economics and Socio- Economics.

However, later there were summarised and grouped under the four GFAR broad themes:

- Genetic resources and Biotechnology
- Natural Resources Management
- Commodity chains and food safety
- Innovation, rural transformation and poverty.

Dimensions addressed:

- Socio-cultural: gender, land access/rights, health conflicts, values/beliefs, traditions, etc.
- Ecological: water, soils, (agro) biodiversity, climate, etc.
- Economic: marketing, chain development, consumers, micro credit, etc.
- Technological: productivity, processing, genomics, etc.
- Political- Institutional: laws institutional arrangements, multilateral policy, etc.

Regional priorities are given to non EU countries, SubSaharian Africa and Latin America.

In the Balcans, privileged regions are Albania, Kosovo, Bosnia and Macedonia.

In the South Mediterranean, all the Mashrek. In the subsaharian Africa: the Sahel countries, Benin, Ivory Coast, Nigeria, Angola, Mozambique and Etiopia.

In Latin America: the poorest provinces of Peru, Bolivia, Argentina e Central America.

The priorities at scale level are:

- Farm, village, municipality, province, country, global.

Beneficiaries are ranked as follows:

- Small scale and landless farmers
- Local NGOs
- Medium scale farmers
- Local governments

### 3) DESCRIPTION OF ARD PROGRAMMES SUPPORTED AT NATIONAL LEVEL

Topics covered:

- Germplasm banks,
- Management of tropical forests and rangelands
- Natural pastures
- *In vitro* regeneration
- Entomology and nematods
- Soil and water salinity
- Deficit irrigation
- Crops drought resistant

- Soil fertility
- Soil conservation
- Mangrooves ecology
- Viral and micological diseases
- Crops Resistance to the cold on the highlands
- Wood production
- Pest management
- Food security
- Early warning
- Orphane commodities
- Agriculture economics (included macro)
- Rural development

#### Level of fund

Concerning the level of fund, please referred to the brief comments included in heading 1, on page 1. More precise details, in particular with regard to the private sector and NGOs, will be gathered during the next phases of the ERA-ARD project, especially with the mapping task.

#### Type of research

It is still a type of aimed research with scarce innovative contents except for the adaptation of western technologies to the developing countries context.

With regard to beneficiaries' participation, their participation is very useful in the identification of causes and effects of problems. Research suggests afterwards some alternative solutions that must be debated and accepted by the beneficiaries. In any case, Italian research centres know well the importance of taking into account the indigenous knowledge.

#### Main Institutions involved

Public national Agricultural Research is carried out by various organisations:

- 22 research centres of the Ministry of Agriculture
- 14 Faculties of Veterinary Medicine ( in particular animal husbandry)
- 24 Faculties of Agriculture Sciences
- 20 CNR's Centre (Research National Council)
- 12 Institutes of Comunitarian Veterinary Medicine (Ministry of Health)
- National Institute for Human Nutrition (Ministry of Health)
- National Institute for Alternative Energy (ENEA)
- Agricultural Academies (Georgofili of Florence, National of Agriculture Bologna etc.)
- IAM (Istituto Agronomico Mediterraneo)
- IAO (Istituto Agronomico per l'Oltremare)

Whilst IAM is a centre of CIHEAM, therefore internationally oriented, IAO is the Institute specifically devoted to project formulation, research and training in developing countries in the field of agriculture.

It is easy to retrieve from national statistical surveys the amount of human and financial resources employed by the public organisations mentioned above, but for the scope of the programme the ARD component should be identified. It will be achieved with the mapping task.

At academic level, there are 2 groups of researchers in Catania and in Florence dedicated to ARD exclusively. Single research groups dedicated exclusively or partially to ARD should be identified within the CNR's and the Ministry of Agriculture's Institutes.

## **5) FUTURE ARD PLANS AND PRIORITIES**

We hope that this programme will stimulate a common thinking among the Institutions that, at national level, are active within ARD, in order to arrive to a better diffusion of information and to the definition of a national orientation.

Target areas and groups of beneficiaries will be the same of the Millenium Goals: poor farmers and least developed countries in Africa, Latin America, Middle East and Balcan regions.

More advanced agricultural research will be utilised in emerging, transition, and medium income countries.

A significant increase of available funds is not expected, although a weak but constant increase of funds might be foreseen for the Cooperation activities.

In past years, the establishment of an Italian agency for ARD had been planned that would have checked, monitored and implemented all ARD projects.

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 8**

THE NETHERLANDS

## **NOTE ON NATIONAL ARD IN THE NETHERLANDS**

Jeroen Rijniens  
Ministry of Agriculture, Nature and Food Quality (LNV)  
The Hague  
The Netherlands  
July 2005

### **1. Planning and funding of ARD at the national level**

The majority of Dutch ARD takes place at Wageningen University and Research Centre (WUR). WUR as a knowledge institute consists of Wageningen University, 7 (applied) research institutes, a training and advisory centre, and two agricultural colleges. The research institutes and university work together closely in five areas of expertise: Agrotechnology & Food, Animal, Environmental, Plant and Social Sciences.

WUR is publicly financed by the Ministry of Agriculture, Nature and Food Quality (LNV). Total budget amounts to ca. € 265 mln per year; ca. € 95 mln for Wageningen University and ca. 170 mln for the applied research institutes (DLO).

Funding of Wageningen University is based on the number of students. Content of university research is primarily driven by scientific considerations. Funding of applied research institutes is based on a long-term subsidy contract between WUR and the Ministry of LNV. Content of this research is driven by the Ministry's policies.

Regarding ARD at WUR:

Fundamental ARD takes place at Wageningen University, accounting for about ca. € 3 mln of LNV yearly WU-budget, 3 % of total. Applied ARD takes place at the relevant applied research institutes (WUR-DLO), accounting for ca. € 10 mln of LNV yearly DLO-budget, 6 % of total (for details see under 2).

On the basis of LNV funding WUR engages in co-financing arrangements, which increase the total ARD budget at WUR with about 30-40 %.

Apart from WUR, also other universities and research institutions are involved in ARD, especially with regard to the socio-cultural, economic and institutional aspects of agriculture and rural development in developing countries (e.g. Universities of Nijmegen, Leiden, Amsterdam, Groningen, Tilburg). This concerns mainly fundamental (science-driven) research that is publicly funded by the Ministry of Education, Culture and Science. In addition, apart from funding by the Ministry of LNV, several ARD (or ARD-related) programmes exist that are funded (and steered) by consortia of Ministries (amongst others the Ministry of Foreign Affairs) and other relevant stakeholders (e.g. Water for Food & Ecosystems, Tropenbos International), often through the Netherlands Organisation for Scientific Research (NWO), e.g. the Diversitas Programme on biodiversity. In these programmes WUR as well as other universities and research institutions participate. Part of NWO is explicitly oriented towards scientific research in the tropics (WOTRO), including an (unidentified) ARD share.

With regard to the Dutch participation within the framework of ERA-ARD, the Ministry of LNV's funded/steered ARD at WUR can be taken as a starting point. From there, and where relevant, relations can be established with otherwise funded/steered national programmes with ARD elements, as well as other research institutions involved in ARD issues.

On international level, the Ministry of Foreign Affairs of The Netherlands finances IARCs through CGIAR as well as a three international education programmes, a.o. in the field of agriculture: Netherlands Fellowship Programme – Academic Programme (NFP-AP), Netherlands Fellowship Programme – Training Programme (NFP-TP) and Netherlands Programme for Institutional Strengthening of Post-Secondary Education and Training Capacity (NTP).

## 2. National ARD priorities and rough description of national ARD programmes

National ARD priorities follow primarily from international agreements and conventions (WSSD, CBD, etc.) in combination with Dutch development co-operation policy. Leading principles for Dutch ARD activities are:

- Demand driven agenda-setting (demand from the South)
- Participatory approach (participatory (action) research, multi-stakeholder processes and social learning)
- Capacity and institution building

Main elements of the Ministry of LNV's funded/steered applied research at WUR:

### **Programme International Co-operation:**

**Period: 2003 - 2005**

**Budget 2004: € 2.975.000**

- Building competencies and regulating food quality and safety in global food chains: *Global sourcing and international trade; internationalisation of network economy; food safety and risk management; supply chain management; capacity building; technology and innovation; certification and regulation; license to produce; risk prevention; sustainable production systems; forward-looking strategies and scenario building, facilitating regional trade and sector development.*
- Sustainable agriculture and environmental quality in peri-urban and densely populated areas: *Sustainable land use, peri-urban and densely populated areas, crop and livestock production systems, environmental quality, decision support tools, platform building*
- Conservation and utilisation of agro-biodiversity: *Agro-biodiversity, participatory crop improvement, animal genetic resources, plant genetic resources*
- International nature management: *Nature management, biodiversity, flyways, waterbirds, wetlands, (tropical) forests, Antarctic, European landscapes*
- Enabling policies for international agreements: *Agro-biodiversity, food safety, food security, international trade, intellectual property rights, international agreements, socially responsible business operation*

### **Programme Water Demand Management:**

**Period: 2002 - 2005**

**Budget 2004: € 1.365.000**

Global water policy, water for food and ecosystems, integrated water resources management, international co-operation, knowledge dissemination, sustainable use of water systems, governance and social processes in water management, watershed approach, water quantity/quality

#### *Priorities:*

- *Agriculture and food security*
- *Nature and ecosystems*
- *Integrated watershed management; valuation and performance assessment*
- *Institutional issues*

### **Programme Capacity Building in Developing Countries and Eastern Europe:**

**Period: 2004 - 2005**

**Budget 2004: € 4.040.000**

Sustainable development

- Multi-stakeholder processes for sustainable development
- Managing and monitoring for impact in rural development
- Knowledge and Information Management Support
- Innovation through institutional change
- Assessing progress towards sustainable development

	<ul style="list-style-type: none"> <li>• Addressing gender and equality in change processes</li> <li>• Regionalisation</li> </ul>
Trade & markets	<ul style="list-style-type: none"> <li>• Creating institutions for responsible trade</li> <li>• Developing capacities for emerging market partnerships</li> <li>• Innovative approaches on livelihood development and market access</li> <li>• Institutional SPS arrangements for market access and pro-poor growth</li> <li>• Modifying SPS systems in pre-accession countries</li> <li>• Specific SPS capacities within the supply chain</li> </ul>
Rural development & sustainable agriculture	<ul style="list-style-type: none"> <li>• Agricultural production systems and environment interactions</li> <li>• Developing capacity in food and nutrition security</li> <li>• Integrating food and nutrition security in local sustainable development initiatives</li> <li>• Public-private partnerships in sustainable agriculture</li> <li>• Putting food and nutrition security on the policy agenda</li> <li>• Transition to sustainable agriculture in Central and Eastern Europe</li> </ul>
Conservation and sustainable use of biodiversity	<ul style="list-style-type: none"> <li>• Active support to planning and monitoring of aspects and programmes on conservation of biodiversity</li> <li>• Capacity building for decentralised management and governance in sustainable NRM</li> <li>• Development of agro-biodiversity for innovation and development of agriculture and ecological corridors</li> <li>• Economic valuation of NRM in decision-making</li> <li>• Knowledge management for synergy and coherence for global environmental treaties</li> <li>• Management of biodiversity and regional ecological network development</li> <li>• Partnerships for capacity building for NRM</li> <li>• Process facilitation for public support to biodiversity conservation</li> </ul>
Integrated water management	<ul style="list-style-type: none"> <li>• Capacity building in integrated river basin management</li> <li>• Sustainable fisheries and coastal zone management</li> <li>• Water for food and ecosystems</li> </ul>

As part of the financial contribution to IAC, LNV also supports the International Centre for Development Oriented Research in Agriculture (ICRA). ICRA was created by a European CGIAR donor group (France, Germany, Switzerland, UK, Netherlands) in order to enhance capacity building for rural innovation processes. Dutch contribution is € 260.000 per year.

Regarding Netherlands' support to international ARD programmes, financial support of the Ministry of Foreign Affairs within the framework of CGIAR is given in the form of unrestricted core-funding to all 15 CG centres. Total amount is € 19 mln per year: € 12,0 mln unrestricted core and € 7,0 mln programme contributions of which 2,5 mln to Challenge Programmes.

The budget of the Netherlands Fellowship Programme amounts to € 25 mln per year, of which the amount spent within the agricultural sector depends on demand. Experience learns that that amount is about € 5 mln per year, i.e. about 20 % of total budget.

### **3. National ARD resources (at WUR)**

Depending on the specific content, all institutes at WUR participate in ARD programmes. Mentioned here are only those institutes that are currently most involved:

### The Agricultural Economics Research Institute (LEI)

The Agricultural Economics Research Institute (LEI) is the main institute in the Netherlands for social and economic research on agriculture, horticulture, fisheries, forestry and rural areas. The LEI's focus at both national and international level is the increasing integration of agriculture and agribusiness with the social environment.

The institute has 300 employees.

### International Agricultural Centre (IAC)

The IAC focuses on capacity building for rural development in countries with developing economies and countries in transition. Institutional development is supported through training, facilitating learning, advisory services and knowledge management. In particular the IAC provides services in the areas of sustainable agricultural production systems, food quality & safety, food security and nutrition, natural resources management and socio-economic aspects of development.

IAC has 85 staff members. Core staff consists of 40 experts.

In addition, IAC hosts The International Centre for Development Oriented Research in Agriculture (ICRA), which in fact is an international ARD resource supported by The Netherlands (Min. of LNV) and as such comparable to the support to IARCs provided by the Min. of Foreign Affairs within the framework of CGIAR.

### International Institute for Land Reclamation and Improvement (ILRI)

ILRI is an internationally orientated centre for the collection and dissemination of knowledge for a better, and sustainable, use of land and water resources, especially in developing countries.

ILRI's core activities are:

- To undertake applied research on the sustainable development of irrigated agriculture.
- To hold mid-career, post-graduate training courses on drainage and irrigation and related subjects;
- To provide technical support and specialist advisory services to drainage and irrigation projects abroad.

### Plant Research International (PRI)

The core business of Plant Research International is:

- The further ecologisation of agricultural production via crop adaptation and management, and the development of new-generation chemicals and biocontrol products.
- Characterising genes, gene functions and biosynthesis routes to develop plants that provide improved and new added-value products.
- Renewing plant production systems according to the demands of producers, consumers and society.

Plant Research International has over 600 personnel and is specialised in plant genetics, plant reproduction, crop physiology, agrosystems, soil fertility, and the optimisation of plant health and plant product quality.

### Agrotechnology & Food Innovations

In 2003 Agrotechnology & Food Innovations was created by the merger between ATO (Agrotechnological Research Institute) and IMAG (Institute of Agricultural and Environmental Engineering). Agrotechnology & Food Innovations carries out applied and strategic research in the fields of technology, processes and chains. Key activities are:

- Quality in Chains
- Biobased Products
- Food Quality
- Agrisystems and Environment

Agrotechnology & Food Innovations has a variety of research facilities and equipment, which range from lab-scale to semi-industrial (pilot) scale.

### Alterra

Alterra is the main Dutch centre of expertise on rural areas and their sustainable use. The interdisciplinary research activities of Alterra cover a wide range of issues including water, wildlife, forestry, soils, landscape, climate and recreation. Alterra is organized into five Expertise Centres:

- Soils
- Water and Climate
- Ecosystems
- Landscape
- Geographic Information

Alterra has some 500 researchers.

#### **4. Future ARD plans and priorities**

Further development of ARD will take place within the framework of international (global) policy development, in combination with Dutch development co-operation policy and along the lines mentioned under 2:

- Demand driven agenda-setting (demand from the South)  
Linking with global/regional/national/local ARD agendas through GFAR and regional fora
- New ways of extension (upscaling)  
From linear (transfer) of knowledge to (interactive) co-production of knowledge
- Capacity and institution building  
Understanding/strengthening knowledge systems for development

Role of national ARD should constantly be redefined in the global knowledge and development arenas. ARD becomes increasingly integrated in AR, and so does AR in R in general. At the same time capacity in the South is growing.

Possible objectives for European coordination with regard to national ARD programmes (at funding policy level):

- To realise convergence of visions (+ common strategies) on the future of ARD in Europe
- To exchange experiences (+ design common approaches) on:
  - effective organisation of demand driven ARD
  - effective participatory approaches
  - effective institution and capacity building for ARD
- To realise joint programming by sharing resources where relevant (i.e. with clear added value).

**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 9**

POLAND

# Poland's National ARD Programme

(draft proposals)

The agricultural research in Poland is allocated in three categories of institutions:

- a) Research institutes under the supervision of the Ministry of Agriculture and Rural Development,
- b) Institutes of Polish Academy of Sciences,
- c) Agricultural Universities.

Human Research potential:

- 784 associate professors
- 3190 PhD
- 3178 MSc
- 5315 employees of the National Advisory Centers

Financial sources:

- Budgetary – around 14.4 % of national budget for science
- Non-budgetary – less than 10% of the national non-budgetary budget for science.

The realisation of the ARD programme has been based on bilateral co-operation, mainly concerning education, personnel exchange, training courses, expertise, consulting activities and carrying out the projects financed by international bodies (e.g. FAO, UNDP) or EU. This mostly refers to CIS States. Direct funding by Polish government is very limited due to the needs for ARD at country level. However, if taking into consideration only the institutes of the Ministry of Agriculture and Rural Development the research potential and facilities are great. There are 20 institutes with very good experience in technological, environmental, breeding and economic disciplines. They have very well equipped laboratories.

There are 6 agricultural research centres, which could participate in the ARD Programme:

## **1) Institute of Soil Science and Plant Cultivation - State Research Institute**

The IUNG (Institute of Soil Science and Plant Cultivation) in Puławy is a research institute established as a service for the Ministry of Agriculture and Rural Development. It is the oldest and the largest agricultural research organisation in Poland, with 316 employees, 91 scientists in this number. The research is directed at sustainable development of agricultural production and protection of terrestrial ecosystems. The IUNG presents multidisciplinary approach in all areas of agricultural research. The organisational structure is based on 11 research departments. The main focus of research activities is on understanding principles and biological mechanisms of crop production and developing strategies for appropriate use and protection of agricultural ecosystems against various forms of degradation. The Institute covers research and technology development, extension and education including an extensive postgraduate program at the Ph.D. level. The IUNG serves the farming community through development of crop production systems that include both ecological and economic considerations.

## **2) Plant Breeding and Acclimatization Institute**

Address: 05-870 Blonie, Poland: tel. (48-22) 725-4536; fax 731-9617, Internet: <http://www.ihar.edu.pl>

**Director:** Prof. Edward Arseniuk, D.Sc., phone: (+48 22) 725 45 36, fax (+48 22) 731 96 17; e-mail: [e.arseniuk@ihar.edu.pl](mailto:e.arseniuk@ihar.edu.pl)

**Deputy Director for Research:** Prof. Andrzej Anioł, D.Sc., phone: (+48 22) 725 47 11; e-mail: [a.aniol@ihar.edu.pl](mailto:a.aniol@ihar.edu.pl)

**Chief Accountant:** Bożenna Banasiewicz, phone: (+48 22) 725 37 77; e-mail: [b.banasiewicz@ihar.edu.pl](mailto:b.banasiewicz@ihar.edu.pl)

Disciplines: genetics, physiology, biotechnology, plant pathology,

Keywords: plant breeding, GMO, biotic and abiotic stresses, biodiversity.

**Organization structure:** The Institute's headquarters are located at Radzików in Central Poland. The Scientific Council at the Institute acts as a consultative and advisory body for the Director. R&D activities are conducted in the Research Center at Radzików and branch divisions/departments in: Bonin, Bydgoszcz, Jadwisin, Kraków, Młochów and Poznań. There are also seven Experimental Stations belonging to the Institute and three affiliated Plant Breeding Companies Ltd. operating in different regions of Poland.

**Research focus of the Institute**

The Plant Breeding and Acclimatization Institute (IHAR) is the largest Polish research centre in the multi-disciplinary area of plant improvement, biotechnology, germplasm conservation and enhancement. Established in 1951, the Institute was soon recognized as a leading research centre for crop improvement not only in Central Europe, but also on the worldwide scale. Research achievements of IHAR, reflected in frequently cited publications in highly respected for scientific merit international journals, resulted in wide contacts with international community of researchers and plant breeders in both Europe and North America. Professors as well as younger researchers from IHAR visited frequently leading universities in Western Europe, the US and Canada. From these visits, they have brought home the knowledge of recent trends and methods in crop improvement. The high quality of PBAI staff attracted a number of doctoral students and young researchers from Poland and abroad as well as resulted in extensive collaboration in the field of plant breeding and seed production technologies. The Institute is also a leading educational centre at the advanced level in the above mentioned research fields.

Research agenda is focused on: the identification of genetic sources of the important agronomic characters, studies on their genetic control and methods of utilization, research on the mechanisms controlling crop resistance to diseases pests and environmental stresses, application of biotechnological methods in plant breeding, gene transformation.

**Human resources:** The permanent staff (627 employees) of the Institute consists of: Professors 9, Associate professors 23, Doctors 70, Research assistants 34, Auxiliary personnel and administration staff 491.

**Training possibilities:** The Institute is entitled to confer scientific degrees of Ph. D., and D. Sc., cooperate with domestic and foreign research units within the framework of agreements, conduct foreign trade within the framework or granted concessions. There is possibility for foreign students to take part or a whole program of their studies on MSc and PhD level in the Centre. Trainings for breeders, extension service specialists and seed inspectors are carried out in the Centre.

**Scientific co-operation:** The Institute has bilateral agreements with foreign scientific institutions from European countries and several co-operations of smaller scale. Wide international co-operation with the research centres, organizations and enterprises in Europe, USA, Canada, Japan, Australia, Egypt, Mexico, Peru and other countries.

**3) Institute for Building, mechanization and Electrification of Agriculture**

02-532 Warsaw, Rakowiecka 32 street, Poland

**Institute was established in 1948**

**Personnel:** total – 254 persons (88 research staff with 9 professors, 60 engineers, the rest is technical staff),

**Director:** Prof. Ph.D. eng. Aleksander Szeptycki

**Infrastructure:** The main settlement in Warsaw with the following departments:

- Dpt. of Bases of Technical Infrastructure in Agriculture,
- European Center of Renewable Energy,
- Dpt. of Animal Breeding Mechanization,
- Dpt. of Promotion with central library,
- Dpt. of Quality and reliability and certification,
- Dpt. of Research organization,
- Technical and economical infrastructure (service),

Research Centre in Kłudzienko:

- Dpt. of Mechanization of Plant Production,
- Certification Centre (laboratories with accreditation),

Research Centre in Gdańsk:

- Dpt. of Materials and Technological Engineering,  
Research Centre in Poznań – Strzeszyn:
  - Dpt. of Swine, Sheep and Furred Animals Farming Mechanization,
  - Dpt. of Poultry Farming Mechanization,
  - Dpt. of Cattle Farming Mechanization,
  - Dpt. of Metering and Ergonomy,
  - Dpt. of Farm Equipment.
- Mountains Research Centre in Krynica Bradowiec

**The objective** of the Institute's operations is:

- preparation of scientific basics for development of mechanization and electrification of agriculture as well as agricultural building and construction of technical facilities in rural areas (rural roads, water and sewage networks and stations).
- Irrigation facilities and systems with drainage and watering,
- Building and facilities for animal breeding and plant production,
- Preparation of energetical facilities and systems with the special regard to the renewable energy (water, wind, biomass and biogas energy),
- Material engineering for agricultural implementation,
- Attestation of machinery and equipment for agriculture,
- The Institute realizes this objective trough conducting research, development and implementation works, as well as promoting their results throughout Poland and abroad. The Institute is a supporter of the Ministry of Agriculture and Rural Development in the range of assessment of agricultural machines, and it functions as a sector centre for scientific-technical information and a standardization centre.

**Main fields of research:**

- transformations in economics and organisation of technical means usage in agriculture and its infrastructure
- selected issues connected with technical infrastructure facilities of agriculture and rural areas, as well as environmental engineering and rural building (possible for implementation in developing countries)
- environmentally friendly plant production techniques and technologies
- environmentally and animal friendly animal production techniques and technologies
- techniques, technologies and organization of processing and storage of agricultural products (possible for implementation in developing countries)
- integrated systems of power economy for villages and agriculture (possible for implementation in developing countries)
- material engineering and technology of technical means repair in agriculture and food industry
- renewable sources of energy (possible for implementation in developing countries)
- adaptation of requirements, criteria, procedures and methods of research connected with agricultural technology to the standards binding in the European Union (possible for implementation in developing countries)
- feedback between science and agricultural practice.

**Rights of the Institute:**

- conferring university degrees of doctor and doctor , habilitated of agricultural science in the field of agricultural engineering
- examination and certification of agricultural machines and devices within compulsory safety certification (accreditation certificate of product certifying unit no. AC-006 and laboratory accreditation certificate no. AB-116 issued by the Polish Accreditation Centre (PCA)
- examination and certification of machines and devices, as well as machines for the food industry in voluntary mode
- accreditation for examination of tractors and cabins according to OECD codes
- issuance of approvals for building materials and elements used in agriculture
- preparation of Polish Standards regarding electrical agricultural equipment

- examination and issuance of attestations for milk pasteurisation installations in Dairy Plants (issued by the Polish Chief Doctor of Veterinary Medicine)
- examination and issuance of attestations for milking devices (issued by the Polish Chief Doctor of Veterinary Medicine)
- realisation and distribution of films

**The Institute is a Real Member of the Polish Research Laboratories' Club POLLAB.**

**Financial structure:** 30% governmental financing, the rest from other sources.

#### **4) Institute of Plant Protection**

The Institute of Plant Protection has been established in 1951 but in his research activity it continues the long tradition of research in plant protection in Poland carried out by the Department of Plant Protection in the State Institute of Agriculture Science and Rural Economy. Presently the Institute is submitted to the Ministry of Agriculture and Rural Development and is recognised as a centre of research in Plant Protection in Poland.

The Institute has his central unit in Poznań, branch in Sońnicowice, four experimental stations located in Białystok, Rzeszów, Toruń and Trzebnica and field experimental station in Winna Góra. In the Institute there is employed about 310 people. In that number about 80 scientific workers including 55 with PhD degree or higher. About 100 technical staff is employed in research departments and the rest of staff is employed in administration activity and Congress Center – Hotel which is the part of Institute.

Following research departments are in organisation structure of Institute:

- Entomology
- Zoology
- Mycology
- Virology and Bacteriology
- Biological Methods and Quarantine
- Weed Science and Plant Protection Techniques
- Plant Protection Product Residue Analyses
- Ecology and Agricultural Environment Protection with two groups:
  - Impact of Industrial Emissions on Agricultural Environment
  - Aspects of Sulphuric Acid
    - Methods of Forecasting and Pest Registration with one group
- Economy of Programming and Statistical Methods
  - Laboratory of Molecular Biology
  - Bank of Pathogens
  - Pesticide Analysis Department in Sońnicowice
  - Pesticide Efficacy Testing Department in Sońnicowice

The Institute aims to conduct research providing the basis for plant protection and to develop better control means against pests and to promote environmentally sympathetic agriculture in Poland.

The main research subjects are:

1. Biology, ecology and harmfulness of microorganisms, harmful fauna and weeds to field crops and agricultural products.
2. Physiographical conditions of pest occurrence, registration and forecasting of their presence and elaboration of means for forecasting the development of pest populations
3. All available methods for preventing the pest occurrence and their control
4. Evaluation of losses in field crops caused by pests and the estimation of biological effectiveness and economic effects of plant protection treatments
5. Evaluation of effectiveness of plant protection products before their registration in Poland
6. Examination of plant protection product residues in plants, soil and water
7. Examination of the quality of plant protection products used in agriculture
8. Evaluation of equipment suitability for performing plant protection treatments
9. Elaboration of the basis for means of utilisation of obsolete plant protection products, their packing and pesticide waste
10. Prevention of harmful side-effects of chemicalization of agriculture and its influence on environment
11. Determination of the assortment of plant protection products recommended for treatments in protective zones of potable water and ecological agriculture
12. Elaboration of means for diagnoses and control of quarantine species
13. Collection, identification and maintenance of field crops pathogens in Poland also running an international exchange of the species from the collection.

The Institute has very good laboratory facilities and laboratory equipment and is fully prepared for the co-operation with the developing countries especially in the subject of pesticide residue analyses and research programmes mentioned in the Institute core activity.

Annual budget of the Institute of Plant Protection balances on the amount of 5,5 millions Euro, includes granted governmental donation equals 1,5 million Euro. The rest of financial sources are earned by the Institute.

## **5) Institute of Animal Production**

### **General information**

(for the participating of our Institute in any project within the ERA – ARD):

1. Name: National research Institute of Animal Production
2. Address: 2, Sarego str., 31-047 Kraków
3. Date of creation: 01.04.1950
4. Infrastructure:

The NRIAP has 5 departments:

DG – Department of Animal Genetics and Breeding

DP – Department of Animal Nutrition and Feed Science

DB – Department of Animal Reproduction Biotechnology,

DI - Department of Animal Immuno- and Cytogenetics,

DT – Department of Technology, Ecology and Economics of Animal Production

## 5. STAFF OF THE INSTITUTE, 2004

	Headquarters	Experimental stations
<b>Total</b>	<b>292</b>	<b>620</b>
<b>Research staff</b>	<b>92</b>	<b>48</b>
<b>within this:</b>		
- <b>Professors</b>	<b>22</b>	<b>3</b>
- <b>D.Sc.</b>	<b>9</b>	<b>9</b>
- <b>Ph.D.</b>	<b>65</b>	<b>31</b>

**Estimation of animal breeding value on the basis of performance testing, collection and standardization of reagents for blood typing for testing the parentage of farm animals, creation of a genetic reserve of Polish Red cattle by embryo and semen freezing, running of a Polish Fodder information Centre.**

The NRIAP has 12 Experimental Stations all over the Polish territory.

### IN CATTLE AND HORSE BREEDING:

#### Research subjects:

- 1. Genetic improvement of cattle and horses:**
  - sire evaluation,
  - estimation of half-bred stallion breeding value,
  - preparation of breeding programmes for different herds and breeding regions,
  - improvement crossing for improvement of cattle dairy performance,
  - the use of embryo transfer to improve the genetic value of herds.
- 2. Programme for conservation of endangered species: Polish Red cattle and Hutsul horses, and supervision of the programme.**
- 3. Improvement of milk and beef quality.**
- 4. Production of slaughter cattle with the use of grassland:**
  - housing and fattening systems for young slaughter cattle,
  - creation of lines of beef crossbred bulls and their use in commercial crossbreeding.

### IN PIG BREEDING:

#### Research subjects:

- 1. Improvement of breeding value:**
  - estimation of genetic parameters of populations,
  - estimation of genetic and phenotypic trends, and definition of the effect of different sources of information on enhancing the accuracy of estimation,
  - use of Animal Model for estimating the breeding value.
- 2. Creation of the new and improvement of the existing lines of pigs with an eye to using them in commercial crossbreeding:**
  - new lines - selection of breed components to improve meatiness and resistance to stress,

- improvement of lines 890 and 990.
- 3. Improvement of slaughter value evaluation methods - *in vivo* and post-slaughter evaluation of meatiness.
- 4. Estimation of breeding value:
  - station test of fattening and slaughter performance,
  - *in vivo* estimation of boar piglets,
  - estimation of reproductive performance of sows

#### IN SHEEP AND GOAT BREEDING:

##### *Research subjects:*

1. Creation and improvement of sheep and goat population for meat, milk and high reproduction performance.
2. Estimation and evaluation of sheep and goat breeding value.
3. Crossbreeding programmes for sheep.
4. Effective production of slaughter lambs.
5. Lamb carcass evaluation using EUROP grading system.
6. On-farm processing of sheep and goat milk (cheese, yoghurt) and other sheep products (meat, wool).
7. Conservation of Polish native breeds of sheep.
8. Mountain sheep farming:
  - dairy utilization of sheep (sheep milk processing, machine milking of sheep),
  - commercial crossbreeding of mountain sheep for improvement of milk and meat performance;
  - rearing and pasture fattening of lambs,
  - utilization of mountain pastures (methods of sheep grazing in the mountains, fertilization and the use of white clover in the mountain sward),
  - environmental aspects of mountain farming.

#### IN FUR ANIMAL BREEDING:

##### *Research subjects:*

1. Methods of breeding value improvement - meat value.
2. Commercial crossbreeding:
  - creation of parental lines,
  - selection of different breeds and lines for commercial crossbreeding.
3. Revision of feeding standards and optimisation of feeding using regional fodder stock.
4. Different management systems
  - cage system (type of cage, stocking density, behaviour),
  - litter system (type of floor, type of litter, stocking density),
  - watering (water requirement, type of drinker, supply of medicines with water).
5. Quality assessment of raw materials
  - meat (rabbits),
  - skins (foxes, raccoon dogs, farm polecats, coypus, rabbits).
6. Improvement of feeding carnivorous fur animals.
7. Veterinary control of reared foxes, mink and raccoon dogs.
8. Marketing of skins of carnivorous fur animals.

#### IN POULTRY BREEDING AND PRODUCTION:

##### *Research subjects:*

1. Methods of poultry genetic improvement:
  - application of the Animal Model for development of the breeding programmes and selection of laying hens and geese,
  - evaluation of genetic differences in the productivity of parental flocks and their progeny in Poultry Testing Stations,
2. Methods of preserving the native breeds of hen:
  - productive and breeding value of 6 native breeds of hens (collection established in 1974),
  - genetic balance and diversity at molecular level.
3. Ecological aspects in poultry production:
  - effect of different environmental factors (temperature, light regimes) and keeping systems (on litter vs. battery vs. multitier) on the productive traits of layers and meat hens.
4. Methods of egg and poultry meat quality improvement:

- effect of genotype and environment on the quality of poultry meat and eggs (yolk colour, cholesterol content, egg shell quality),
- herb blends as a source of natural pigments improving yolk colour intensity, broiler skin colour and health.

#### IN BIOTECHNOLOGY OF ANIMAL REPRODUCTION:

##### Research subjects:

##### 1. Improvement of female reproduction efficacy and genotypes forming using laboratory methods:

- *in vitro* production of cattle embryos,
- reproduction of farm animals (rabbit and cattle embryo cloning using electrofusion of isolated blastomeres with enucleated oocytes),

- embryo vitrification,
- genotype forming using laboratory methods (transgenic animals),

- embryo and gamete sexing (PCR technique, semen separation into "male" and "female" fractions using flow cytometry).

##### 2. Biotechnical methods in the reproduction of farm animals:

- efficacy of intrauterine sheep insemination with frozen semen,
- oestrus synchronization in pigs and development of diluents for prolonged storage of boar semen in above-zero temperatures,
- implementation of biophysical process of photon emission (ultraweak luminescence) and laser stimulation method for establishing new criteria of semen evaluation.

#### IN ANIMAL NUTRITION:

##### Research subjects:

##### 1. Feed science:

- application of the NIRS technique to evaluation of roughage feeds for ruminants (hay and grass silage),
- development of *in vitro* tests to predict digestibility of green forages in ruminants,
- determination of energy and protein value of feeds,
- new systems of feed evaluation for non-ruminants and ruminants.

##### 2. Ruminant nutrition:

- evaluation of milk replacers for calves,
- manipulation of milk yield and composition using amino acids and polyunsaturated fatty acids,
- evaluation of diets formulated according to the French protein feeding system INRA, 1988 for cows of different genotype,
- evaluation of protein sources in milk-substitute preparations for calves,
- use of amino acids and PUFA and other sources of protein and energy for dairy cows and fattened bulls,
- feeding level of heifers and productive performance of dairy cows.

##### 3. Non-ruminant nutrition (poultry and pigs):

- nutritive value of new feeds (energy and protein), supplements and diets for rapidly growing animals,
- antinutritional factors in feeds and enzymatic treatment,
- technological treatments improving feed quality,
- macro- and microminerals, their utilization and requirements in broilers,
- nutritional manipulation of egg composition to improve its dietary quality,
- nutritional (amino acid) manipulation of N utilization and excretion in broilers,
- supplementation of pigments to laying hen and beta-caroten to sow diets,
- efficiency of feed additives,
- evaluation of biological value of protein on rats.
- energetic and amino acid requirements in growing pigs of different genotype.

#### IN FEED SCIENCES AND ANIMAL PRODUCTS:

##### Research subjects:

1. Grassland and arable forage crop utilization for animal nutrition, factors affecting nutritive value of forages.
2. Forage, moist cereals and compounded feed preservation:
  - silage fermentation control and stimulation,
  - development and evaluation of silage additives,
  - silage palatability, digestibility and nutritive value for cattle and sheep.
3. Development and evaluation of feedstuff:
  - protection of high protein feedstuff and fat in the rumen,
  - optimization of feed additives in animal nutrition (mineral, enzyme, probiotic, vitamin), their effect on animals health and productivity, milk, meat and egg composition, legislative recommendations,
4. Cows' milk and meat (beef, pork, poultry, lamb) composition modification for improving their dietary parameters:
  - increasing polyunsaturated fatty acids concentration in milk and meat,
  - decreasing level of cholesterol in milk and meat,
  - increasing iodine, selenium and vitamin E content in cows' milk
5. Factors affecting leptin activity in pigs and its use in animal production.

## IN TECHNOLOGY, ECOLOGY AND ECONOMICS OF ANIMAL PRODUCTION

### PLAN OF RESEARCH AND DEVELOPMENT PROJECTS AT THE DEPARTMENT OF TECHNOLOGY AND ECOLOGY OF ANIMAL PRODUCTION OF THE NATIONAL RESEARCH INSTITUTE OF ANIMAL PRODUCTION IN 2003

- Effect of unsaturated fatty acids on resistance of broiler chickens to thermal stress.
- Effect of chicken overheating on physiological indicators, productivity and carcass quality of broiler chickens depending on the level of dietary energy and supplemental vitamins.
- Effect of stocking density and genotype on broiler productivity and carcass quality.
  
- Effect of chick occupancy time and thermal conditions in buildings on broiler chicken welfare.
- Effect of an earth-tube heat exchanger on broiler house microclimate in the summer period, productivity and carcass quality.
- Behavioural and production responses of cows to thermal conditions in loose housing.
  
- Effect of housing systems on water consumption by cattle.
- Effect of cow housing system on peak lactation and total lactation yields.
  
- Elaboration of efficient methods for poultry waste management in the cage system.
- Effect of source of infrared radiation on preferences and physiological indicators of suckling piglets.
- Pig housing in a family system.
  
- Possibility of improving pregnant sow welfare by the addition of bulky feeds in dietary rations.
- Effect of dietary herbs on reducing stress response of periparturient sows.
- Determining the emission volume of harmful air gas fractions from different cattle housing systems and the possibilities of reducing them.
  
- Effect of old-type stable modernization and equipment on housing conditions, productivity and milk quality of high-performance Black-and-White cows.
- Determining the adaptability and welfare of high-producing sows in the outdoor system.
- The use of biophysicochemical methods for elimination of odours from pig production.
- Determining the emission volume of harmful air gas admixtures from different cattle housing systems and the possibilities of reducing them.
- Determining the effect of renewable heat sources on air pollution in livestock facilities.

#### The Department's Implementation Activities

In the Department's history, the following projects were developed and implemented:

1. An earth-tube heat exchanger.
2. A pig farm model using pro-environmental technologies of production.
3. The IZ farrowing pen for sows and piglets.
4. Technology of pig production on deep litter.
5. Thermal screens for pigs.
6. Technology of pig production on self-cleaning floors.
7. The family system for sows and piglets.
8. A two-stage housing system for sows and piglets.
9. An outdoor housing system for sows and piglets.
10. A cattle housing system on self-cleaning floors.
11. On-farm technology of high-quality milk production.
12. A method for slaughter waste treatment.
13. A non-luminous infrared ceramic radiator.
14. A laser air dust meter.
15. A snail farm model with optimum production technology for Polish conditions.

In addition to the above areas, the Department has been actively involved in extension and implementation of the following technologies:

- cattle housing,
- pig housing,
- production of milk, beef cattle and pigs,
- production of the *Helix aspersa* edible snail.

These activities comprise instructional material and implementation instructions, lectures given at training sessions and seminars for specialists and individual farmers, and individual projects and consultations.

#### Services Offered by the Department

Having specialized research equipment at their disposal, the Department staff can accept commissions for:

- the evaluation of microclimatic conditions in livestock buildings,
- elimination of technical problems in animal breeding,
- measurement of gas emissions,
- testing of equipment components for animals.

Training courses for producers are addressed to various organizations. They concern:

- the harmonization of housing conditions with EU and welfare requirements,
- cattle, pig and poultry breeding technology,
- ecological methods of animal breeding,
- environmental protection in animal breeding,
- snail farming,
- pro-environmental technologies of animal production.

Additionally, the Department staff provide extension and consultation on:

- the designing of livestock buildings,
- the application of ventilation and heating systems,
- the choice of pen, stall and building components,
- the management of organic fertilizers.

For suggestions and questions, please contact the Department Head.

#### IN IMMUNO- AND CYTOGENETICS:

##### Research subjects:

1. Blood groups :
  - acquisition and international standardization of specific reagents identifying red blood cell antigens in cattle, horses, sheep and pigs.
2. Antigenic differentiation of the blood serum proteins
  - identification and characterization of antigenic markers of genes determining protein antigens in cattle, pigs and sheep.

3. Karyotype analysis in cattle and pigs:

- identification of chromosome aberrations, their influence on productive traits (mainly fertility),
- researches on chromosome markers suitable for gene mapping and selection,
- evaluation of the effects of cell chimerism in farm animals,
- cytogenetic monitoring of farm animals used for reproduction.

4. Molecular studies:

- molecular identification of genetic defects,
- research into polymorphisms of DNA microsatellite sequence.

**IN ECONOMICS AND ORGANIZATION OF ANIMAL PRODUCTION:**

*Research subjects:*

1. Criteria for optimizing the scale of animal production.
2. Profitability of animal production.
3. Minimization of animal feeding costs.
4. Economic criteria of animal production diffusion.
5. Economic viability and amortization of the foundation herd.
6. Minimization of inputs in dairy production.
7. Identification of farms intended for specialized animal breeding.
8. Prognoses for the economic viability of animal production research projects.
9. Markets for animal products.
10. Integrated and ecological systems of farm animal breeding.

**6) Institute of Economics and Rural Development (IAFE)**

Institute is a stand-alone research & development unit founded in 1950. Organization of IAFE has evolved in time and the Institute has been known under its current name since 1983. Since January 2005 it has a status of the State Research Institute. Recently the IAFE employs ca 150 staff, of which 14 professors and over 60 other scientific workers. The Institute is structured in the merit Departments.

Institute conducts mainly empirical research concerning analysis and forecasts of development of food economy, including its particular branches, agricultural inputs and markets for agri-food products. It conducts studies on the problems related to the EU enlargement, ownership changes, spatial concerns and social developments on the rural areas. The research works carried out at the Institute largely result from internal data collected within the framework of the FADN and other questionnaire-based surveys. This creates an unique and original primary database that allows for wide range of scientific analysis as well as for advisory and recommendations for agricultural policy. This kind of activity can be offered to the developing countries which might benefit from the Institute experience.

The appreciation for the IAFE work results is confirmed by many prizes and distinctions granted for the researchers. The team prizes were granted by the Minister of Agriculture and Rural Development to the IAFE researchers for the elaboration of theoretical framework and implementation of regular analysis of agricultural markets (situation and outlook reports) and for preparation of annual analysis of production and economic performance of agriculture and food economy.

The Institute is being financed from the budget sources for science as well as for special five-year research programme carried out in the IAFE and from sources earned for its own economic activity.

**Future ARD plans and priorities**

Polish Ministry of Agriculture and Rural Development has not yet elaborated the ARD programme. At present ideas on ARD activities should focus mainly:

- CIS States (e.g. Ukraine, Moldova, Kazakhstan)
- The Balkan States
- Middle East

The fields of research and development should cover in general:

- technology and breeding of specific crops growing in the regions,
- soil environment (ecosystems),
- socio-economic problems,
- animal production,
- food safety.

The research programme should interact with CGIAR Centres of different regions.

The forms of activity could be as follows:

- education and training,
- extension,
- expertise and consulting,
- supply of breeding materials,
- technology development,
- adaptation of experiments,
- common projects,
- researcher exchanges,
- conferences, workshops.

*Adam J Galczynski*

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**ERA-ARD WP1, Task 1.1**

## **DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

### **ANNEX 10**

SLOVENIA

# **Research in Slovenia**

## **1. R&D funding institutions**

The system of R&D funding institutions in Slovenia incorporates public, as well as private entities. The main research funding institution in Slovenia is Ministry of Higher Education, Science and Technology (MHEST). MHEST is contracting some institutions for implementations of national and international bilateral calls, evaluation of proposals, and controlling of the project implementation: to new established Slovenian Research Agency and Slovenian Technology Agency, Ad Futura and Slovenian Science Foundation. Ministry of Economy, Ministry of Agriculture, Forestry and Nutrition and Ministry for Environment and Spatial Planning fund in minor extend some applied research and other support activities devoted to agriculture.

Important strategic documents are National Research and Development Programme (NRDP) 2006-2010 which defines the science strategy and policy and priority areas. The NRDP is a constituent part of the national development strategy and governmental policies embodying development goals and influences whose common purpose is promoting development towards an economically and socially successful society. The agriculture topics are defined within biotechnology and pharmacy and new technologies for sustainable development of economy focused on environmental protection technologies.

**The instruments – in this case programmes are defined with the Law on research activities adopted in 2002. The Ministry adopted also some regulations for the implementing of Law on research activities that define in details the call for programmes, the content of the programme proposals, the submission, evaluation and implementation of the programmes.**

## **2. Instruments of scientific policy**

### **Research programmes and projects**

Funding of research programmes and projects represents the main instrument of promoting scientific research at universities and non-university public research establishments. The first round of programme financing commenced in 1999, the aim having been to ensure a long-term stability of research groups across all main scientific disciplines. For a new round starting in 2004, around 330 applications for research programmes were submitted and 262 research programmes were selected for financing. In contrast to the first call, the second call stressed the importance of interdisciplinarity, networking and social and economic utility of proposed research. All-together, around 30% of the public budget for science is allocated to research programmes. Around 2500 researchers and 600 technicians and other ancillary staff are included in the programme financing. Project funding has been based on a competitive mode.

Post-doctoral projects and applied research projects (at least 25% co-financing of end users needed) have a priority.

The list of programmes and projects connected to Agriculture are presented in Appendix 1.

### Targeted research programmes

Research and development activities supporting the development objectives of the Republic of Slovenia have so far been carried out through the mechanism of targeted research programmes, which have been quite a

successful form of inter-ministerial cooperation. It is planned that the scope of target research programmes will be increased, supporting national, regional and sectoral development. Every year a call for project proposals of targeted research programme "Competitiveness of Slovenia 2001-2006" is published. A call is composed of 9 different thematic priorities one of them is "Sustainable development of food safety and countryside" concerning also research related to Agriculture. Project duration vary between 2 and 3 years.

## Young researchers training programmes

The programme »Young Researchers« that has been successfully operating since 1985 presents one of the most successful initiatives to strengthen the research abilities of human resources. The programme has made it possible to employ about 230 new young researchers annually, and has contributed to lowering the average age of researchers by more than 5 years. Some 20% of the Ministry budget is allocated to the financing of this programme, which contributes significantly to the increase of quality and to infusing fresh blood into the research groups. Since 1991, almost one third of new researchers with a master's degree, and almost one half of all doctors of science have been educated through programme.

Characteristics:

- young researchers are employed for a specified period;
- along with the post-graduate studies, they work on basic and applied projects;
- within the period of training and education at home, they can also study abroad (from 1 month to 12 months);

## Infrastructural activity and research equipment

- endowments for the purchase of research equipment (large computer centres);
- establishing and subsidising the activity of instrumental centres (concentration of large and expensive research equipment);
- subsidising the activity of scientific collections, libraries, information and documentation centres, communication networks, organisation of scientific conferences and publishing;
- other investments (e.g. buildings).

*Slovenian institutions dealing with research in Agronomy*

University of Ljubljana: Biotechnical Faculty, Veterinary Faculty, Faculty of Pharmacy, Faculty of Chemistry and Chemical Technology, Faculty of Biology

University of Maribor: Faculty of Agriculture, Faculty of Chemistry and Chemical engineering, Pedagogical faculty

University of Primorska: Science and Research Centre of Koper

### University of Nova Gorica

National Institute of Biology

Slovenian Forestry Institute

Agricultural institute of Slovenia

Institute for Sustainable Development

Institute for Hop Research and Brewing Zalec

National Institute of Chemistry

"Jožef Stefan" Institute

The Urban Planning Institute of the Republic of Slovenia

### 18 national research programmes from 2004-2008: 3.75 MEUR/2004

<i>Programme:</i>	<i>Programme leader</i>
Functional Food and Chemical Hazard	Dr. Mirko Prošek, mirko.prosek@ki.si
Plant Biology	Dr. Marina Dermastia, marina.dermastia@uni-lj.si
Fauna, flora and vegetation of Slovenia and neighbouring regions	Dr. Andraž Čarni, carni@alpha.zrc-sazu.si
Communities, relations and communications in the ecosystems	Dr. Anton Brancelj, anton.brancelj@uni-lj.si
Horticulture	Dr. Franci Štampar, franci.stampar@bf.uni-lj.si
Competitiveness of the agri-food sector	Dr. Emil Erjavec, emil-erjavec@bfro.uni-lj.si
Agrobiodiversity	Dr. Vladimir Meglič, vladimir.meglic@kis.si
Plants in agriculture-genetics and modern technologies	Dr. Branka Javornik, Branka.javornik@uni-lj.si
Applied botany, genetics and ecology	Dr. Franc Batič, franc.batic@bf.uni-lj.si
Animal health, environment and food safety	Dr. Milan Pogačnik, Milan.Pogacnik@vf.uni-lj.si
Nutrition and ecology of gastrointestinal tract	Dr. Irena Rogelj, irena.rogelj@bfro.uni-lj.si
Sustainable Agriculture	Dr. Matej Stopar, matej.stopar@kis.si
Plant Physiology and Biotechnology	Dr. Maja Ravnikar, maja.ravnikar@uni-lj.si
Pharmaceutical biotechnology: man and environment	Dr. Borut Štrukelj, borut.strukelj@ijs.si
Forest biology, ecology and technology	Dr. Hojka Kraigher, hojka.kraigher@gozdis.si
Research on immune status enhancement, development and productivity of plants and animals	Božidar Krajncič, fk@uni-mb.si
Comparative genomics and genom biodiversity	Dr. Peter Dovč
<a href="#">Microbiology and biotechnology of food and environment</a>	Dr. Peter Raspor

Some description of research programmes:

### Some examples of projects dealing with agriculture financed from 2004: 0.29 MEUR/2004

Biological diversity among two grapevine viruses and their role in plant	Maja Ravnikar, maja.ravnikar@uni-lj.si
Characterisation of cv. Istrska Belica	Metoda Lipnik Štangelj, lipnik@ibmi.mf.uni-lj.si
Soil gentle remediation method for bioavailable heavy metal stripping	Domen Leštan, domen.lestan@bf.uni-lj.si
Comparation of statistical models for longitudinal data in animal breeding	Milena Kovač, milena@mrcina.bfro.uni-lj.si
Diversity and mycotoxins of fungi causing apple core rot	Hans-Josef Schroers, hans.schroers@kis.si
The role of nematode xiphinema rivesi dalmasso, 1969 for transmission of nepoviruses	Gregor Urek, gregor.urek@kis-h2.si
Molecular basis of tolerance to abiotic stress in Phaseolus sp.	Vladimir Meglič, vladimir.meglic@kis.si
Physiological indicators of stress in cultivated plants	Mateja Germ, mateja.germ@uni-lj.si
Analysis of grapevine yellows and induced resistance to the disease using DNA microarrays	Kristina Gruden, kristina.gruden@ijs.si

### Agronomy related applied projects Some projects financed from 2004; 0.22 MEUR/2004

The study of interactions between the influences of	Dr. Cvetka Ribarič-Lasnik, cvetka.ribaric@erico.si
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tropospheric O3 and fertilization with N on indication plants	
Characterization of hop essential oils ( <i>Humulus lupulus</i> L.)	Dr. Iztok Jože Košir, iztok-joze.kosir@guest.arnes.si
Some chances to stimulate the farm competitiveness in the highland region in south-ist Slovenia with activating the overgrowing areas	Dr. Andreja Borec, andreja.borec@uni-mb.si
Quality optimisation of medicinal plants ( <i>Echinacea purpurea</i> Moench., <i>Gentiana lutea</i> L., <i>Hypericum perforatum</i> L.) through harvest	Dr. Dea Baričevič, dea.baricevic@bf.uni-lj.si
Monitoring of the volatile components in olive oils from slovene istra	Dr. Tomislav Levanič, tom.levanic@zrs-kp.si
Organic apple production	Dr. Matej Stopar, matej.stopar@kis.si
Analysis of trade flows and comparative advantages of Slovene agri-food products	Dr. Jernej Turk, jernej.turk@uni-mb.si
Direct and correlated influence of bilateral selection on the body weight of farm chicken	Dr. Antonija Holcman, antonija.holcman@bfro.uni-lj.si
Determination of interactions between hop flea beetle ( <i>psylliodes attenuatus</i> koch) and host plants	Veronika Abram, veronika.abram@bf.uni-lj.si
Further research of Raspberry dwarf virus, newly discovered virus of grapevine	Mojca Viršček-Marn, mojca.marn@kis-h2.si
Genetic origin and diversity of Slovenian autochthonous lettuce collection	Jelka Šuštar Vozlič, jelka.vozlic@kis-h2.si
Investigation of some aspects of growth, composition and rheological properties of grain amaranth seed	Franc Bavec, franci.bavec@uni-mb.s
Improvement of the efficiency of microbial protein synthesis in the rumen in diets containing grass silages	Jože Verbič, joze.verbic@kis.si
Predictive ability of NIR spectroscopy for pig meat quality evaluation	Marjeta Čandek Potokar, meta.candek-potokar@kis.si
Biochemical markers of drought stress tolerance in hop plants	Dušica Majer, Dusica.majer@guest.arnes.si
Nitrogen accumulation, incorporation time and residual effects of catch crops	Branko Kramberger, branko.kramberger@uni-mb.si
Usage of entomopathogenic nematodes in plant protection - the method optimization	Lea Milevoj, lea.milevoj@bf.uni-lj.si

#### International Cooperation

##### Multilateral Scientific Cooperation

The Ministry of Education, Science and Sport promotes and supports the participation of Slovenian R&D organisations in projects financed or co-financed by the European Commission, agencies of the United Nations, and other international and intergovernmental organisations.

Since its independence in 1991, Slovenia has been participating in the European Union programmes (partly in the 3rd Framework Programme, 4th Framework Programme, 5th Framework Programme, PECO, INCO-COPERNICUS, COST, TEMPUS, ACE). In 1994, Slovenia became a full member country of the EUREKA initiative. In 1996, Slovenia, as a partner country, could for the first time apply for individual forms of participation within the

NATO Science Programme, and it actively participates in the NATO Science for Peace Programme. Since 1992, Slovenia is a full member of the United Nations Organisation and co-operates with UN specialised agencies, funds and programmes on a regular basis.

In November 1998 the Government of the Republic of Slovenia adopted the decision on the participation of Slovenia in Community programmes in the field of research, technological development and demonstration in the FP5 and Euratom, continuing participation in FP6 until full membership in 2004.

#### Co-operation with the United Nations Development Programme (UNDP) and specialized UNO Agencies

Co-operation between Slovenia and the UNDP is based on the Memorandum of 1995. The UNDP funds allotted to Slovenia for the programme period ending in 1996 have not yet been completely spent. They have been tied up in the fields of small-scale industries and tourism.

In 1997, the co-operation with the UNDP included an additional project on the protection of human rights and the fight against AIDS. Part of the funds for the project was assured by the UNDP, on the basis of a special bonus for independence; the Ministry of Health as supporter of the project provided the rest.

Since the UNDP changed its course after 1997 towards a new programme and organisational basis, most activities of the Ministry of Science and Technology (MST) in 1997 were oriented towards preparing the framework for co-operation in the period 1997 - 1999. This programme includes plans for strengthening the governmental mechanisms for the transition of Slovenia from the status of receiver of UNDP support to one of donor. The other two priority tasks are the development of the civil society (status of women and strengthening of governmental mechanisms to protect other vulnerable groups) and fulfilment of obligations regarding international conventions in the field of environment protection. The UNDP Executive Board approved the Programme in September 1997.

In May 1997, a new UNDP Regional Office was opened in Bratislava to cover Croatia, Macedonia, Malta, the Slovak Republic, and Slovenia.

#### *United Nations Industrial Development Organisation (UNIDO)*

The co-operation with the UNIDO has been conducted in the form of regular exchanges of information on international UNIDO meetings, on the possible involvement of experts in technical co-operation projects, and co-operation with the UNIDO in its role as executive agency in the "Strengthening the Centre for Small-Scale Industries" project, co-financed by the UNIDO. In 1997, opinions were exchanged regarding Slovenian co-operation in the UNIDO programme on establishing national centres of clean technology. Furthermore, the SAZU (Slovenian Academy of Science and Arts) and the UNIDO started an initiative to establish the Centre for Technology Transfer into Industry in Slovenia.

#### *United Nations Economic Commission for Europe*

The Office for Standardisation and Metrology has co-operated with this Commission and its expert bodies. However, the issue is still open with regard to co-operation in the field of education and knowledge transfer from academic institutions into industry, co-ordinated by the ECE and the FEMIRC network.

#### *United Nations Food and Agriculture Organisation (FAO)*

The co-operation with the FAO has mainly involved information exchange on interest in expert work in technical co-operation projects and possible involvement at the organisation's headquarters in Rome. In July, the Ministry of Agriculture, Forestry and Food initiated the establishment of the national committee for co-operation with the FAO, and a representative was appointed thereto by the Ministry of Science and Technology.

#### *International Centre for Promotion of Enterprises ICPE*

In March 1997 the ICPE launched an initiative to sign an agreement according to which the Centre would be engaged on behalf of the Slovenian Government to implement five projects in its field of work. However, the agreement has not been signed. The ICPE Director and the Slovenian Minister of Science and Technology

exchanged visits and, in accordance with the International Memorandum on Co-operation between the ICPE and the MZT, the Ministry contributed two scholarships for MBA studies at the Centre in the last academic year.

#### Co-operation with International Centres and Expert Associations of European Countries with the Status of International Intergovernmental Organisations

##### *International Centre for Genetic Engineering and Bio-technology (ICGEB)*

The Centre with its headquarters in Trieste, and laboratories in both Trieste and New Delhi, organised a number of expert meetings and seminars in 1997 in which Slovenian experts also participated. The involvement of Slovenian researchers in the ICGEB research programmes is co-ordinated by the Institute for Molecular Biology and Biotechnology of the Chemical Institute, which has the status of an associated ICGEB Centre. The ICGEB has been operating as an independent international organisation for two years, and Slovenia as a member-country has been co-operating in setting up the rules of the organisation. In 1997, the beginnings of co-operation with associated ICGEB centres in member-states were initiated.

##### *International Centre for Theoretical Physics (ICTP)*

The co-operation with the ICTP with its headquarters in Trieste is based on the Slovenian membership in the UNO, since the Centre puts IAEA and UNESCO programmes into practice. Regular cooperation programmes are upgraded by the Memorandum between the MST and ICTP of February 1996, which allows postgraduate study by foreign students at the University of Ljubljana. The meeting of MST and ICTP representatives in November 1997 had the character of a Scientific Board meeting and provided grounds for the start of co-operation in the next academic year.

##### *International School for Post-graduate Studies SISSA, Trieste*

Contacts with SISSA had already begun to intensify in 1996. In February 1997, SISSA representatives visited Slovenia with the purpose of establishing long-term contacts in the field of scientific journalism.

##### *European Molecular Biology Conference (EMBC)*

Upon ratification of the agreement on establishing the EMBC, Slovenia became a full member-state of it in June 1997, and in December 1997 it was able to use the possibility of research and educational work in the EMBC member-states.

##### *International Institute for Refrigeration (IIR) and International Conference for Scientific Research of the Mediterranean Sea (CIESM)*

Co-operation with the IIR and the CIESM is by way of direct co-operation between representatives of research institutions (primarily the Faculty of Mechanical Engineering, the Jozef Stefan Institute, and the Maritime Biological Station) in the activities of both organisations.

##### *European Organisation for Nuclear Research (CERN)*

On the basis of the co-operation agreement of 1991, the CERN has for many years allowed Slovenian scientists to participate in its research and educational programmes. In spring 1997, the Jozef Stefan Institute initiated the idea of Slovenia becoming a full member of the CERN and to participate in the ATLAS Project, and it defined the areas of interest for co-operation with the CERN.

##### *International Centre for Advanced Mediterranean Agricultural Studies (ICAMAS)*

In 1997, formalisation of the relationship with the ICAMAS (based in Paris) unfortunately did not develop further and Slovenian expert institutions are still directly co-operating with the ICAMAS' institutes of agronomy on Crete, in Zaragoza, Bari, and in Montpellier.

##### *Organization for Economic Co-operation and Development (OECD)*

Since Slovenia co-operates with the OECD only through the OECD Centre for Co-operation with countries in transition, in 1997 the MST could only confirm its interest to renew co-operation with the Directorate for Science, Technology and Industry of that organisation and its expert bodies for scientific and technological indicators and

innovations. In July, the translation and publishing of the Frascati Manual in Slovenia was arranged with the OECD, and the agreement concerning conditions for publishing the Manual was signed.

### **Bilateral Scientific Cooperation**

Slovenia co-operates in science and technology with more than 75 countries. Many initiatives have been introduced for institutionalising co-operation at a formal interstate level and for implementing agreed activities via corresponding programmes and protocols. By the end of December 2001, formal intergovernmental agreements on S&T co-operation had been signed with 27 countries: Argentina, Austria, Bosnia and Herzegovina, Brazil, China, Croatia, the Czech Republic, Cyprus, France (INRA, CNRS) Great Britain, Greece, Hungary, India, Italy, Republic of Korea, Macedonia, Philippines, Poland, Romania, Turkey, the Slovak Republic, the USA and some others.

Slovenia has concluded two inter-ministerial agreements on scientific and technological co-operation with Russia, an inter-ministerial protocol with Iran, memorandums of understanding on co-operation with Estonia and with the Brazilian State Minas Gerais, as well as joint declarations with Denmark, Latvia and Norway.

Pre-independence scientific and technological co-operation agreements were reconfirmed with Belgium and Japan, as was the cultural agreement with the Netherlands, which includes science and technology co-operation.

Intergovernmental co-operation is also taking place within the framework of umbrella agreements on educational, cultural and scientific co-operation, which Slovenia has concluded with 39 countries: Albania, Argentina, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, China, the Czech Republic, Egypt, Estonia, France, Finland, Greece, Germany, Great Britain, Hungary, India, Iran, Italy, Israel, Jordan, Kazakhstan, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Mexico, Poland, Portugal, Republic of Korea, Romania, Russia, the Slovak Republic, Spain, Turkey, Turkmenistan and Ukraine.

Co-operation in science and technology is also continuing with several countries with which no official agreements have been concluded to date: Australia, Belarus, Canada, Ireland, Iceland, Norway, Portugal, Sweden and Switzerland.

Formal interstate agreements on S&T co-operation have been signed with 18 countries - Argentina, Austria, Bosnia and Herzegovina, Brazil, China, Croatia, the Czech Republic, Great Britain, Greece, Hungary, India, Italy, Republic of Korea, Macedonia, Philippines, Poland, Romania and the USA:

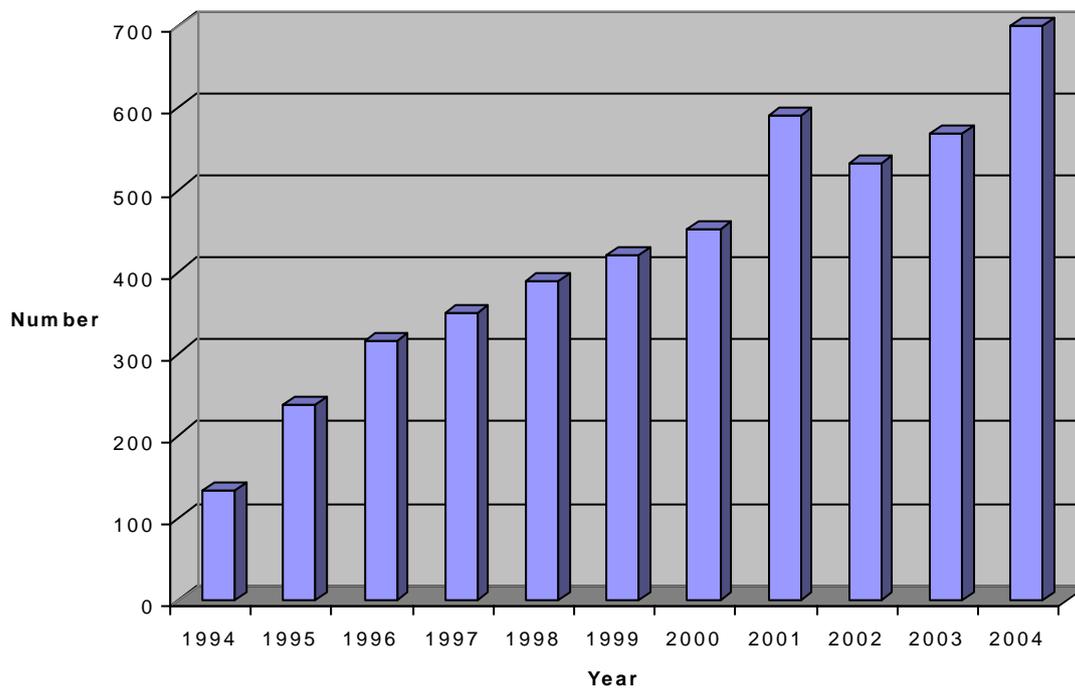
Slovenia has concluded two inter-ministerial agreements on scientific and technological co-operation with Russia, an inter-ministerial protocol with Iran, memorandums of understanding on co-operation with Estonia and the Brazilian State Minas Gerais, as well as joint declarations with Denmark, Latvia and Norway.

A pre-independence scientific and technological co-operation agreement was reconfirmed with Belgium, Japan, as well as the cultural agreement with the Netherlands, which includes science and technology co-operation.

Interstate co-operation is also taking place within the framework of umbrella agreements on educational, cultural and scientific co-operation which Slovenia has concluded with 39 countries - Albania, Argentina, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, China, the Czech Republic, Egypt, Estonia, France, Finland, Greece, Germany, Great Britain, Hungary, India, Iran, Italy, Israel, Jordan, Kazakhstan, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Mexico, Poland, Portugal, Republic of Korea, Romania, Russia, the Slovak Republic, Spain, Turkey, Turkmenistan and Ukraine;

Co-operation in science and technology is also occurring with several countries with which there no official agreements have been concluded to date - Australia, Belarus, Canada, Ireland, Island, Norway, Portugal, Sweden, Switzerland and Ukraine.

**Number of bilateral research projects:**



**ERA-ARD WP1, Task 1.1**

**DESCRIPTIONS OF NATIONAL ARD PROGRAMMES**

**ANNEX 11**

SWITZERLAND

# National ARD Programme of Switzerland

## A Description of the National Programme

### Preface

In Switzerland, a variety of institutions are covering ARD issues. Most of them are represented in the Swiss Forum for International Agricultural Research (SFIAR). SFIAR comprises all ARD relevant stakeholder groups, i.e.: Institutions and organisations that are active in agricultural research and who are interested in development issues; Organisations and groups that are interested in, or affected by, development oriented international agriculture. Some key members of SFIAR are briefly presented in chapter 3 of this document.

At the government level, Switzerland has not outlined a specific national ARD programme. Responsibilities for themes and issues related to ARD are shared among different national authorities. This also implies that neither a common definition of ARD at the national level exists nor an approved agenda of national ARD priorities. Thus, the following description of the “National ARD Programme” refers rather to the place of ARD in the national political agenda and to the scope of ARD-issues that are covered by the involved national authorities and the institutions under the SFIAR umbrella.

The main Swiss national authorities covering ARD related issues are:

- The Swiss Agency for Development and Cooperation (SDC)
- The Swiss Federal Office for Education and Science
- The Swiss Federal Office for Agriculture
- The Swiss Agency for Environment, Forests and Landscape
- The State Secretariat for Economic Affairs
- The Federal Veterinary Office

A short description of these national authorities is given in chapter 1 of this document.

## 1. How is ARD defined, planned and funded at the national level

The Swiss Agency for Development and Cooperation (SDC) is considered as the principal office responsible for funding ARD in Switzerland. In the following, the mandate, the priorities, the funding mechanisms and the programmes of SDC in the context of ARD are outlined in detail. The other national authorities covering some specific ARD issues are only presented very briefly.

### Swiss Agency for Development and Cooperation (SDC)

#### *Mandate*

SDC is Switzerland's international cooperation agency within the Swiss Foreign Ministry. Together with other federal offices, SDC is responsible for overall coordination of international development activities, the cooperation with Eastern Europe, as well as humanitarian aid. SDC's strategies and policies for agriculture and ARD are covered by the Thematic Resource Department, namely by the divisions looking after natural resources and environment (NRE) and employment & income (E&I). International agricultural research is under the responsibility of NRE. NRE is strategically focussing on the two sectors food security and environmental quality.

Funding priorities are strategically focused according to

- multilateral (international) commitments (among others: CBD, climate change, and UNCCD; Global Plan of Action, International Treaty on Plant Genetic Resources for Food and Agriculture; SDC's thematic policy focus which itself is related to the Strategy 2010; Millenium Declaration-WSSD; World Food Summit)<sup>16</sup>,
- priority thematic areas of SDC/NRE/E&I, in particular by their regional and agro-ecological focus; integrated management of natural resources and poor livelihood oriented research agenda, value chain concept for agro products and markets for the poor (clusters: land and water utilization, biodiversity/genetic resources/forests, air/climate/energy, payment for environmental services)
- synergies with bilateral and multilateral program activities, and
- existing complex network of linkages and interactions that exists between SDC, international research organisations, the CG-System and most of its Centers with both multilateral untied as well as bilateral project support mechanisms.

#### *SDC's research policy<sup>17</sup>*

A separate research desk is in charge of SDC's overall research policy and strategy. The overriding goal of SDC's funded research always is, to contribute in a direct or indirect manner to poverty alleviation and hence to the improvement of the frequently desperate living conditions.

- To generate specific results and improve effectivity and effectiveness through commissioned specific thematic research at both national and international level, which are designed to contribute toward achieving the desired scientific insights and consolidating the store of knowledge.
- To contribute to sustainable institutional and individual capacity building in the South and East aiming at enhanced capability to better coordinating bilateral and multilateral support to individual institutions and universities in order to reduce duplication and manipulatory effects from outside/foreign actors. This includes among others the better coordination of thematic, and, to a lesser degree also the geographical focus of the development assistance.
- To maintain or increase Swiss research capacity both at an institutional and individual level in the fields related to and relevant for development. SDC's support is effected in a parallel and complementary manner to the support provided on a regular basis by several Swiss entities responsible 'ex officio' for research promotion in Switzerland<sup>18</sup>. Thus the support by SDC is intended to contribute to securing the necessary home mass of scientific excellence in the field of development and to securing the necessary home mass of scientific excellence needed to participate in international research projects and programmes in the field of development.

#### *Programmes and corresponding funding*

SDC supports research related to all of its five thematic priority areas, namely Conflict Prevention, Governance, Social Development, Employment and Income (E&I), and Natural Resources and Environment (NRE). Research and related activities supported under this scheme makes up to about CHF 50 million per year. This includes all aspects mentioned above. Out of this, and among others, funds are used to support research competence centers/groups in Switzerland, information- and networking. services, research fellow partnership programmes,

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<sup>16</sup> In Switzerland different offices are responsible for international agreements/conventions with importance for ARD namely as follows:

- Convention of Biodiversity (CBD) is with Swiss Agency for Environment, Forests and Landscape
- UNCCD and Global Crop Diversity Trust is with Swiss Agency for Development and Cooperation
- Global Plan of Action and International Treaty on Plant Genetic Resources for Food and Agriculture is with the Federal Office for Agriculture

<sup>17</sup> **Research Policy** of the Swiss Agency for Development and Cooperation (SDC), 2002

<sup>18</sup> In particular, the Swiss National Science Foundation (SNSF)

and international research organisations. By far the largest component is used for funding Agricultural Research for Development. Annually, more than CHF 36 million is spent in projects related to ARD.

The SDC funding contribution to the CGIAR is a medium-term commitment. CHF 12 million per year are allocated towards core support of the centers of the Future Harvest. This includes unrestricted funding system-wide and challenge programmes too. In addition, CHF12-14 million is spent on bilateral projects with the CGIAR centers annually. Overall, total SDC commitments to the CGIAR come up to CHF 25 million annually.

SDC's collaboration with international agricultural research centers others than CGIAR such as ICIPE, CABI, and to a certain extent ASARECA and IUCN makes up to an annual contribution of about CHF 4.5 million per year.

As far as the support to Swiss competence centers and programmes in ARD is concerned, SDC's annual support may be described by about 7 million per year. This includes the research programmes in biotechnology/biosafety, livestock and policy research, crop research, land management and use of natural resources and the Research Fellow Partnership Programme (RFPP) in international agriculture.

### **State Secretariat for Economic Affairs (Seco)**

The seco is the Confederation's competence centre for all core issues relating to economic policy. Seco's aim ([www.seco.admin.ch](http://www.seco.admin.ch)) is to create the basic regulatory and economic policy conditions to enable business to flourish for the benefit of all.

The development and transition directorate of seco is the Swiss government's competence centre for sustainable economic development and the integration of developing and transition companies into the global economy. Its primary objective is to fight poverty. Several seco supported projects have an ARD component, which involves research in Switzerland and abroad.

Under the aspect of fair trade the production of biocotton, -rice, soya and other food products is being supported. Under the same issue tools for access and benefit sharing mechanisms are being developed. Under the global public good/bad aspects and the requirement of the WTO (sps issues), seco co-supports the development of diagnostic and biosafety tools regarding plant safety and zoonotic diseases.

### **Swiss Federal Office for Agriculture (SFOA)**

The SFOA develops and implements federal policy in the area of agriculture. Research of SFOA is tightly connected with the five agricultural research stations ([www.agroscope.ch](http://www.agroscope.ch)). The overall goal of the research is to ensure an economically efficient, environmentally responsible agrarian sector in Switzerland that is developing in a socially sustainable manner. The research centers also carry out performance and control tasks relating to seeds, fertilizers and other agricultural materials, as well as to varieties protection.

### **Swiss Agency for Environment Forests and Landscape (SAEFL)**

The SAEFL ([www.buwal.admin.ch](http://www.buwal.admin.ch)) is the federal government's centre of environmental expertise and is part of the Federal Department of the Environment, Transport, Energy and Communications. Close collaboration with the State Secretariat for Economic Affairs (seco) and the Swiss Agency for Development and Cooperation (SDC) is a priority for SAEFL.

The aim is to provide active support for the integration of environmental and development goals into development cooperation programmes and to promote the consistency of multilateral and bilateral activities. The SAEFL is not funding ARD projects directly. Indirectly, however, it supports several smaller research projects, such as Implementation of the CBD, in particular of the Bonner Guidelines with the ABS system, and the Cartagena Protocol in Biosafety.

### **The Swiss Federal Office for Education and Science (OFES)**

The Swiss Federal Office for Education and Science (OFES) ([www.bbw.admin.ch](http://www.bbw.admin.ch)) is part of the Department of Home Affairs and the central authority of the Swiss federal government for national and international issues related to general and university education and research. It develops and implements federal policy in the areas of science, research, institutions of higher education and general education. Acting on a mandate issued by the

Swiss Federal Government (OFES), the Swiss National Science Foundation (SNSF) ([www.snf.ch](http://www.snf.ch)) supports research undertaken inside and outside universities and fosters young scientific talents.

The SNSF covers the whole palette of research from social science up to medicine. It also supports several ARD related research programmes and projects at Universities. Among others the National Center of Competence in Research North-South Research (NCCR), various up-stream research in modern plant science, environmental sciences, animal health etc are supported and/or co-supported significantly by the SNSF.

The SNSF has at its disposal various instruments for strengthening scientific co-operation at an international level: promotion of exchanges of individual scientists with all the countries of the world (exchange programme), funding of seminars for sounding out new areas of co-operation between researchers from Switzerland and selected partner countries (international scientific seminars) and support of international research projects and other measures with selected regions (Eastern Europe, developing countries).

Effective January 1<sup>st</sup> 2004, Switzerland is fully participating as an “Associated Country” in the 6<sup>th</sup> framework programme of the European Union (FP6, 2003 – 2006). This is the result of the research agreement concluded between Switzerland and the European Union.

**Federal Veterinary Office (FVO) ([www.bvet.admin.ch](http://www.bvet.admin.ch))**

The Institute of Virology and Immunoprophylaxis ([www.admin.ch/IVIweb/](http://www.admin.ch/IVIweb/)) is the research center of the FVO. It is active in diagnosis and research of O.I.E. list A diseases and collaborates intensively with European and other international reference laboratories. Priority research focuses on virology and immunology of Food and Mouth Disease (FMD) and classical swine fever.

## 2. National ARD Priorities

The following list of ARD Priorities in Switzerland is derived from the SDC policy and funding on the one hand and on thematic research capacity and interest of key institutions on the other hand. As it is not based on a national Programme, the definition of national priorities is somewhat arbitrary. However, the list reflects the main areas of ARD relevant expertise and capacity in Switzerland.

### *Capacity Building*

SDC's policy is to contribute to sustainable institutional and individual capacity building in the South and East and to maintain or increase Swiss research capacity both at an institutional and individual level in fields related to and relevant for development. The primary strategy is to include capacity building components and strengthen partnerships in all agricultural programmes. Capacity building is not an add-on to other programmes but a key component.

Several of the approved projects among SDC's supported programmes in capacity building are focusing on ARD aspects.

(see under <http://www.deza.ch/index.php?navID=3463&userhash=28175238&IID=1>).

These are among others:

- **University Exchanges**

The objective of this programme is to foster short, one-time (or occasionally even repeated) contacts between institutions of higher learning in Switzerland and in developing countries.

Conducted by: the Commission for Research Partnerships with Developing Countries KFPE.

<http://www.kfpe.ch/projects/echangesuniv/echangesuniversitaires.html>

- **Young Researchers**

This programme makes it possible to finance an on-site visit for a researcher preparing a doctoral thesis or post-doctoral dissertation. The beneficiaries are enrolled in a Swiss university; the on-site visit / project involves a local partner.

Conducted by: the Commission for Research Partnerships with Developing Countries KFPE.

<http://www.kfpe.ch/projects/jeuneschercheurs/jeuneschercheurs.html>

- **Research partnerships with Developing Countries**

This programme provides grants for partnership research projects between a Swiss university and a research institution from the South. Participation criteria to be evaluated include the scientific quality, the relevance to the local context, and the potential for learning and exchange.

Conducted by: the Swiss National Science Foundation SNSF.

<http://www.snf.ch>

- **Scientific Cooperation Fund EPFL-SDC**

This programme provides grants for partnership research projects between one of the EPFL's research units and a research institution from the South. Participation criteria to be evaluated include the scientific quality, the relevance to the local context, and the potential for learning and exchange.

Conducted by: the Federal Institute of Technology in Lausanne EPFL.

[http://www.epfl.ch/COOP/concours/regles\\_fond.pdf](http://www.epfl.ch/COOP/concours/regles_fond.pdf)

The most important ARD relevant capacity building programme is the Research Fellowship Partnerships Programme for Agriculture, Forestry and Environment (RFPP): SDC has commissioned the Center for International Agriculture at ETH Zurich to manage RFPP ([www.rfpp.ethz.ch](http://www.rfpp.ethz.ch)). Its purpose is to provide post-graduate research training to scientists from Switzerland and from developing countries in order to strengthen human resource development, and to promote the development of a North-South research partnership. Swiss partners include; EAWAG, ETH Zurich, EPF Lausanne, FAL, Eidg. Forschungsanstalt für Obst-, Wein- und Gartenbau, University of Bern, University of Neuchâtel, University of Zürich, Conservatory and Botanical Garden, Geneva. International partners are centres of the Consultative Group on International Agricultural Research

(CGIAR) as well as national institutions in Colombia, Ivory Coast, Mexico, Nicaragua, Nigeria, Zambia, and Zimbabwe.

#### *Mitigating syndromes of global change*

Since 2001, the Swiss National Science Foundation and SDC have co-funded a large programme “National Centre of Competence in Research (NCCR) North-South: Research Partnerships for Mitigating Syndromes of Global Change” (<http://www.nccr-north-south.unibe.ch>). However, this programme with the involvement of several Swiss universities and eight regional networks in developing countries does not cover agricultural research in the narrower sense, but includes also environmental and social sciences. Natural resource management (primarily water, soil and land management) is an important research component. All projects within this programme focus on research partnerships and include a strong capacity building element.

#### *Sustainable management of water and land resources*

Natural resource management (primarily water, soil and land management) is an important research component within the NCCR North-South (see above) as well as its lead institution, the “Centre for Development and Environment” ([www.cde.unibe.ch](http://www.cde.unibe.ch)), located at the University of Berne. NRM is also a research issue in a range of other university institutions and research organisations.

#### *Livestock systems*

The Swiss Centre for International Agriculture (ZIL) of the ETH Zurich has started a new research programme in 2003, focussing on “Livestock systems in support for poor people” funded by SDC (costs CHF 2.9 million/ 3 years). ZIL research projects contribute towards the improvement of forage production, animal feed, child nutrition, exploring market opportunities for livestock products, and genetically improving livestock for better disease resistance.

The Swiss Tropical Institute in Basel (<http://www.sti.ch/deutsch/gwe.htm>) conducts research that contributes to the health of populations by studying the interface between animal and human health in various socio-cultural contexts.

#### *Plant biotechnology*

The Indo-Swiss Collaboration in Biotechnology (ISCB) (<http://iscb.epfl.ch>) has a focus on sustainable crop management for wheat and pulses in marginal areas of India. The programme is supported by SDC and the Indian government, and coordinated at the Swiss Federal Institute of Technology Lausanne (EPFL). The programme works in partnership involving Indian and Swiss partners to create synergies across institutes and national borders.

At ETH Zurich there is strong expertise in biotechnology (bioprocess engineering), molecular biology, plant and animal genomics, including tropical crops (rice, cassava) and breeds. In this context, ETH ZURICH together with University of Zurich, University of Basel and Friedrich Miescher Institute in Basel form the Plant Science Center ([http://www.plantscience.unizh.ch/index\\_de.cfm](http://www.plantscience.unizh.ch/index_de.cfm)) covering among others issues related to ARD including soil science.

#### *Organic agriculture, IPM, post harvest control*

The Research Institute of Organic Farming (FiBL) conducts practice-oriented research and development to improve the understanding of organic farming systems and of the environmental, economic and social impact of farming. It maintains quality extension services to make the latest organic farming methods easily accessible to farming communities, national and private extension services and other education centres throughout the world.

ETH Zurich has on focus on IPM (biopesticides, biological pest control propagating the use of natural enemies and/or secondary metabolites).

#### *Food science and human nutrition*

ETH Zurich has a strong expertise in food science and nutrition. ARD related research is mainly conducted at the Centre Suisse de la Recherche Scientifique (CSRS) in Côte d'Ivoire. Research is focussing on cassava improvement, yam processing, food quality and micro-nutrients deficiencies (iron, vitamin A).

#### *Zoonotic diseases*

In 2003, SDC and seco approved a new programme focussing on BSE 'Capacity Building for Surveillance and Prevention of BSE and Other Zoonotic Diseases'. The ultimate goal is to ensure that animal-derived foods such as meat and meat products are safe to consume locally and safe to trade worldwide. Partners are countries in the South. The programme is managed by a private company (SAFOSO; [www.safoso.com](http://www.safoso.com)) in Switzerland which works closely together with FAO.

#### *Biosafety*

In response to the implementation of the Cartagena protocol on biosafety SDC is supporting the establishment of the national biosafety frameworks by a **capacity building support** that entails projects with different partners in Switzerland. The goal is to establish scientific expertise for risk assessment and **biosafety and sustainability management in developing countries**. It includes the development of international biosafety testing guidelines for transgenic insect-resistant plants, tailored trainings in biosafety and sustainability management, and the development of a module based internationally recognized course on biosafety (bachelor degree) ([www.bats.ch](http://www.bats.ch))([www.gmo-guidelines.info](http://www.gmo-guidelines.info))([www.ribios.ch](http://www.ribios.ch)).

### **3. National ARD Resources**

#### **Swiss Federal Institute of Technology / SwissCentre of International Agriculture**

The only agricultural faculty in Switzerland is at the **Swiss Federal Institute of Technology in Zurich** (ETH Zurich, [www.ethz.ch](http://www.ethz.ch)). At ETH Zurich, the Swiss Center of International Agriculture is coordinating almost all research related to ARD. It forms the interface for research and development.

#### **National Centre of Competence in Research North-South (NCCR-NS)**

The NCCR North-South focuses on international research cooperation and promotes high-quality disciplinary, interdisciplinary and transdisciplinary research with the aim of contributing to an improved understanding of the status of different syndromes of global change, of the pressures these syndromes and their causes exert on different resources (human, natural, economic), and of the responses of different social groups and society as a whole. The NCCR North-South enables Swiss research institutions to enhance partnerships with institutions in developing and transition countries, thereby building the competence and capacity of research on both sides to develop socially robust knowledge for mitigation action.

#### **Agricultural Research Stations**

The goal of Agroscope is to ensure an economically efficient and environmentally responsible agriculture in a socially sustainable manner. Research themes are among others:

- Safety and quality of food to fair market prices
- Development of cost reducing production methods in compliance with environmental requirements.
- Preservation of cultivated landscapes and species variety
- Sustainable utilization of soils, water and air.
- Developments in the area of new technologies (genetic engineering etc.)
- Effects of agro-political decisions on rural areas.

In several of the areas mentioned above close collaboration have been established with scientists from the South, e.g. in plant biotechnology (potato, wheat), mycinecicides, biosafety/non-target insects, ex-situ germplasm conservation, etc. Many of these projects are co-funded by the SDC.

## **Universities**

Universities in Zurich, Basel, Bern, Neuchatel, Geneva Univ Zurich, and Lausanne are running large research programmes in plant, food and environmental sciences that are not only supported by the federal but also the cantonal governments. Out of this several groups are involved in research for development relevance. In Switzerland, praxis oriented research is subject to the business of the Universities of Applied Sciences. Among them the Swiss College of Agriculture in Zollikofen (SHL).

## **Centre for Development and Environment**

The Centre for Development and Environment ([www.cde.unibe.ch](http://www.cde.unibe.ch)) at University of Berne is active in research, capacity development and partnership programmes. It is focussing on sustainable use of natural resources, sustainable regional development and mitigating syndromes of global change. Apart from being the lead institution in the NCCR North-South is also has additional research programmes financed by the Swiss National Foundation, it is hosting important international networks. Among them are WOCAT ([www.wocat.net](http://www.wocat.net)) aiming at soil and water conservation and Mountain Research & Development Journal ([www.mrd-journal.org/](http://www.mrd-journal.org/)). It is also active in providing support on conceptual issues, tools and approaches to the NRE section to SDC. CDE has two large regional programmes in Central Asia and in Eastern and Southern Africa aiming at bridging the gap between research and development activities.

## **Swiss College of Agriculture (SHL)**

SHL ([www.shl.bfh.ch](http://www.shl.bfh.ch)) plays a leading role in ARD. Its expertise in agricultural economy, sustainable agricultural production systems, tropical and subtropical livestock and plant production, agricultural extension, and international cooperation in general builds the core of SHL's consultancy services, praxis related ARD projects and international education programme. The SHL is broadly networked and works with partners in Switzerland, Germany, Denmark, France, New Zealand, Thailand, China, Vietnam, Cameroon, and Cuba.

## **Research Institute of Organic Agriculture (FiBL)**

FiBL Switzerland ([www.fibl.ch](http://www.fibl.ch)) and FiBL Berlin e.V. (Germany) are leading competence centres for research and consultancy on organic agriculture in Europe. FiBL Frick is the world's largest research establishment for organic agriculture. FiBL Frick employs over 100 members of staff with a volume of project funding totalling some € 8.5 million in the year 2003. FiBL has long been committed to the international development of organic agriculture (International Federation of Organic Agriculture Movements IFOAM, International Organic Accreditation Service IOAS, International Society of Organic Agriculture Research ISOFAR etc.). FiBL has competencies in organic soil management, plant production, holistic animal health, animal ethology and organic animal breeding, in socioeconomics, in comprehensive analysis of the organic market and in organic food processing and production. Alongside practical research, high priority is given to transferring knowledge into agricultural practice through advisory work, training courses and expert reports as well as various modern methods of documentation.

### **CAB International**

CAB *International* established a European **Station for Biological Control in Switzerland** in 1948 (<http://www.cabi-bioscience.org/Html/activitiesBioscienceCH.htm>). The station was transferred to Delémont in the Jura in 1958 and extended its capabilities in 1997, becoming the **CABI Bioscience Switzerland Centre**. The main function of the Switzerland Centre has been the classical biological control of invasive insect pests and weeds of Eurasian origin, with considerable work in the temperate areas of the world, particularly North America, New Zealand and Australia. Scientists from the Centre have also contributed significantly to biological control programmes in the tropics and sub-tropics. Since its inception in 1948, the CABI *Bioscience* Centre in Switzerland has maintained close relationships with the Swiss Federal Research Stations, Swiss Universities and the ETH Zurich, the Swiss Agency for Development and Cooperation, Intercooperation, and the plant protection industry. The Centre has been used as a base for cooperation with scientific colleagues at German universities, with the German Society for Technical Cooperation and with scientists in many Eastern European countries.

### **Info Agrar**

InfoAgrar is the agricultural information and documentation service of the SDC. Its [aim](#) is to facilitate access to relevant information, based on the needs of professionals dealing with agricultural issues in international development cooperation. The focus is on information related to agriculture in Africa, Latin and Central America, Asia, and Eastern Europe.

The [target public](#) of InfoAgrar's services are members of staff within SDC and its partner organisations, both in Switzerland and abroad. InfoAgrar also responds to the needs of other public sector institutions, NGOs, the broader public, and private businesses that are involved in international agricultural development

Under the new name of [InfoResources](#) ([www.inforesources.ch](http://www.inforesources.ch)) InfoAgrar collaborates more closely with two related information services Infoforest and Info Service CDE

### **Lindau Agricultural Extension Centre**

In 1984, the SDC started its cooperation with the Swiss Center for Agricultural Extension in Lindau, Switzerland (LBL), by mandating the LBL to set up the specialised service "Rural Extension in Developing Countries", in the meantime called "Department for Extension in Development Cooperation". The mandate stemmed from the need to collect, collate, make available and capitalize experiences made in the field of extension in rural areas of developing countries, since the SDC supported and still supports more than 50 projects in which extension plays an important role.

The Department for Extension in Development Cooperation is active in the following areas:

- **Education and training activities:** Workshops, training and exchange of experiences on extension issues in development cooperation in general and on specialised topics of extension work; training in communication and moderation techniques; tailor-made seminars and workshops for projects and organizations active in the field of development cooperation
- **Services:** Planning, coaching and evaluation of projects, backstopping, coaching of employees in the field and of decision makers
- **Publications:** Publication of reports on lessons learned (experiences) and synthesis reports, of guidelines for extensionists ("Agricultural Extension") and of the periodical "BeraterInnen News".
- **Conceptual work:** Analysis of and input to the discussion on the topic "diffusion of complex extension issues on a low budget basis".

## **Commission for Research Partnerships with Developing Countries (KFPE)**

KFPE is dedicated to promoting research partnerships with developing and transition countries. In this way, it wishes to contribute to sustainable development. KFPE is engaged in Swiss scientific policies and is committed to promoting the interests of researchers and their affiliated institutions on both a national and international level. It furthers development-oriented research and elaborates research-strategic concepts. In this context, it ascertains that partnership principles are followed, that the quality of research is assured, and that the interests of all partners are respected.

KFPE is a commission of the Council of Swiss Scientific Academies. KFPE is not funding projects; it has the following activities:

- **convincing** the scientific community, politicians and the general public of the urgency and importance of carrying out research in partnerships with developing and transition countries;
- **evaluating** research partnerships, and publishing criteria and basic principles for the implementation of projects in partnership, trying to ensure that projects are of high quality, that ethical principles are observed, and that the interests of all partners are taken into consideration;
- **organising** events and publications on partnership in research, encouraging the interest of younger scientists, offering a forum for the exchange of information, and supporting the members in their efforts to disseminate and consolidate the idea of research in partnership, and put it into practice;
- **building** bridges between North and South, and between research scientists and people working in development.

In this context ARD projects are an integrated part of KFPE's activities.

At present, the [associate members](#) include about 60 Swiss institutions active in scientific research, in the promotion of scientific research or in development, Departments of the Federal Government, and Foundations.

## **Centre Suisse de Recherche Scientifique (CSRS)**

CSRS is an international research centre located in Côte d'Ivoire with a Swiss financial and scientific nucleus. CSRS is covering the following ARD relevant research areas: Natural environment and biodiversity, nutrition and food security, parasitic diseases and development of the urban environment.. CSRS gets core funding amounting to one third of its annual budget by the Swiss Academy of Sciences.

## **LivestockNet**

LivestockNet (<http://www.livestocknet.ch>) is a Swiss network of university, private sector, NGO and government stakeholders working in livestock and development. **Its objective** is to improve Swiss actions and to strengthen the Swiss position in livestock and development issues.

## **NGO's**

There are a number of development organisations (NGOs and others; <http://www.swisscoalition.ch>), Intercooperation ([www.intercooperation.ch](http://www.intercooperation.ch)), Swisscontacts ([www.swisscontact.ch](http://www.swisscontact.ch)), and Vetérinaire sans Frontières active in implementing rural development programmes in the South including projects in agriculture. Most of them do not support research for ARD in Switzerland/Europe but benefit from the results out of the research supported e.g. by SDC.

## **Private sector**

### **Nestlé**

Nestlé with headquarters in Switzerland is today the world's biggest food and beverage company. Nestlé focuses its research on food processing and nutrition. Together with other food companies, Nestlé has launched the Sustainable Agriculture Initiative (SAI), a partnership to actively develop and promote sustainable agriculture.

### **Nestlé Foundation**

The Nestlé Foundation initiates and supports research in human nutrition with public health relevance.

### **Syngenta**

Syngenta is a leading agribusiness company based in Switzerland. Its main business activities are in crop protection and in the commercial seeds market. ARD relevant research activities of Syngenta encompass IPM, plant breeding and biotechnology.

### **Syngenta Foundation**

The Syngenta Foundation for Sustainable Agriculture ([www.syngentafoundation.com](http://www.syngentafoundation.com)) supports larger programmes in sustainable agriculture in the South and works to a smaller extent together with Swiss based researchers in IPM and agrobiodiversity.