



The Agricultural Research for Development (ARD)  
Dimension of the European Research Area (ERA)

**ERA –ARD WP2, Task 2.2**

## **Annex 2**

# **National reports on best practices and innovative capacity development approaches in ARD programmes**

**Compilation of national reports**

## **Introduction**

In the framework of the ERA-ARD project, a survey of innovative approaches in capacity development (CD) was undertaken. All Consortium members were asked to describe innovative approaches and best practices of CD mechanisms within their ARD programmes. The compilation of the best practices and innovative approaches is presented in annex 1. A few countries provided also a comprehensive analysis of the CD component in their programmes, an in-depth description of some approaches or guidance notes on support for CD. These documents are arranged in the present annex 2.

# **Lessons learned and innovative mechanisms**

## **in**

### **Belgian support to Capacity Development in ARD**

**Compilation by E. November**

#### **Introduction**

Belgium does not organise specific programmes in capacity development for ARD. However, ARD is present in multilateral CGIAR and bilateral support. Capacity development in these ARD activities is mostly supported through indirect bilateral actions of the Flemish and Walloon Interuniversity Councils (VLIR UOS and CIUF CUD respectively). What follows is a non exhaustive compilation of Belgian support activities to capacity development in ARD.

#### **Recent changes in federal direct bilateral support to capacity development**

The Belgian DG for Development Cooperation stimulates capacity development through the support of a grants programme in the Belgian direct bilateral cooperation. In the past, basic as well as higher education could be financed through this mechanism. Most students would follow a training or study programme in Belgium. The expansion of the education programme in partner countries, in combination with the need to ensure increased partner capacity and reduction of brain drain, led to an adaptation in the Belgian direct bilateral grants programme. At present, support aims at well-trained applicants studying for a career as a development cooperation professional. Two types of grants exist in this programme:

- Grants for study and training in Belgium
- Local study and training grants.

Since 1994, preference is given to the support of local grants, due to the positive effect this has on the integration of the students in their future working environment and as a tool to prevent brain drain and improve adapted knowledge transfer. As such, a larger and more sustainable development impact is attained at a lower cost.

The change in bilateral grant policy could not have been successful without the indirect bilateral cooperation effort to develop centres of excellence.

The grants programme and the number of grants per partner country are determined by the Minister of Development Cooperation. The student candidates are introduced by the partner countries to the Belgian embassies and selected by DGDC based on legal criteria as well as the cooperation priorities. Attention is given to gender equity in this programme, leading to an increase of the number of female students, from 10% in the nineties, to approximately 21% over the last years. The Belgian Technical Cooperation (BTC) is responsible for the implementation of the programmes.

#### **The centres of excellence in the federal indirect bilateral cooperation**

Belgian indirect actors (VLIR and CIUF in cooperation with Belgian universities and federal scientific institutes) are responsible for the establishment of centres of excellence, for which local institutes were selected based on their organisational quality, the

compatibility of the training to the labour market, the availability of a suitable pedagogical supervision, the regional approach and the use of concentration strategies.

The centres of excellence are financed through support of working cost, supply of scientific material as well as tutorials, scientific strengthening (in cooperation with Belgian associated scientists) and in academic partnership with Belgian institutions.

This university collaboration in the indirect cooperation programme aims at reinforced local education and research capacity and improved management of the research institutions in the partner countries. Local university training in-line with demands of the region is encouraged to curb the current risks of brain drain and acculturation.

## **Institutional support and grants programme in the federal indirect cooperation**

The grants programme in the Belgian federal indirect cooperation follows a strategy to strengthen the capacity of South partners to design and manage their sectoral development plans. Ownership of the partner countries policy makers in institutional development and capacity development is the corner stone for this programme.

Specific postgraduate training and study programmes are organised preferably in the partner country or otherwise in specialized institutions in Belgium.

Belgium also finances ICT in education for example in the “Université Virtuelle Africaine/African Virtual University”, with specific attention also going to the discrepancy of urban versus rural ICT possibilities.

In addition, a new approach for policy definition support studies run by universities is being devised. Such studies should offer far greater support and the interaction between universities and administration will eventually come to play a much wider role.

The administration firmly believes that the majority of resources available under indirect cooperation should be channelled to the south.

## **Selected Innovative Capacity Development activities of Flemish Interuniversity Council (VLIR)**

### ***Institutional University Cooperation (IUC) programme***

#### IUC Management system and principles

The VLIR IUC collaboration is operationalised in successive Partner Programmes, with a total duration of 17 years and consisting of some 6 to 8 interrelated projects. These projects are led by project leaders who together form a Steering Committee. The Steering Committee is responsible for planning and monitoring implementation, and provides a forum for exchange and reflection. The respective IUC partnerships are coordinated by a Flemish professor who is appointed by VLIR following an open selection process.

At the local level, a similar set-up exists with bilateral contacts for both the programme (coordinators) and the individual projects (project leaders). Every one or two years, both steering committees meet in a joint session.

In order to solicit policy-level recommendations and engage in high-level discussions, the top management of the VLIR-IUC partner universities gather for a Joint Partner Council meeting every 3 years.

In line with its mandate, VLIR assumes the role of programmer and monitor, while the collaborating partners and the academics concerned carry responsibility for all aspects of programme implementation.

Furthermore, the IUC programme adheres to the following management principles:

- **Academic Leadership:** The IUC programme is about academic collaboration. Henceforth, leadership and overall responsibility shall rest with the academic

authorities, and the individual academics tasked with coordination and implementation responsibilities;

- **Process Facilitation:** While having components of technical assistance, the IUC programme facilitates and supports processes of change such that its management needs to be considered against a background of ongoing and contextualised change;
- **Pragmatic but transparent institutional arrangements:** Each IUC programme is unique in terms of its managerial set-up and organisation. VLIR is encouraging a pragmatic approach insofar that this proves to be effective and transparent;
- **Incorporation into local structures and systems:** VLIR encourages arrangements that build upon existing structures and practices at the level of the partner university;
- **Professionalisation and a separation between academic and administrative tasks:** Given the size and complexity of an IUC programme, and the need to ensure that academics can focus on their academic input, professional management is sought.

The management capacity was enhanced through the employment by the partner university of a full-time programme manager, at least as regards the 3 ‘new’ IUC partner universities.

In terms of methodology, Project Cycle Management (PCM) and the Logical Framework Approach (LFA) are being applied.

In line with the PCM concept, the IUC programme follows a well-defined programme cycle in which the different phases, actors and outputs are clearly spelled out. The table below provides a general outline of the IUC programme cycle. Given its mandate, VLIR is constantly searching for ways in which to enhance programme quality such that this cycle is likely to be further elaborated in the years ahead.

<b>Phase</b>	<b>Activities</b>	<b>Actors</b>	<b>Outputs</b>
Programming	Definition policy framework Broad outlines of project types and guidelines for elaboration	VLIR/DGDC	Typology of fundable projects Conditions for acceptance
Partner selection	Open call Shortlisting Programming mission	VLIR	List of new IUC partners
Identification	Formulation of project ideas Analysis of whether ideas are fundable and matching is feasible	Partner University	Preliminary partner programme proposal submitted to the VLIR
Appraisal and Matchmaking	Analysis versus VLIR policy Flemish interest based negotiation	VLIR	Projects admitted for formulation Formalised matching
Formulation	Collection of data, consultations, detailed formulation	Project Leaders	Programme/Project proposal
Funding Decision		VLIR	Funded Partner Programme
Implementation and Monitoring	Annual planning Actual implementation Adaptation as required Mid-term evaluation	All actors but mainly programme partners	Implementation as planned
Evaluation	Evaluation activities	All parties and external actors	Evaluation report

VLIR is currently developing an integrated website-based management tool through which the efficiency of the planning, monitoring and reporting processes may be enhanced.

### IUC Programme managers

The 2002 mid-term evaluations have confirmed the need to professionalise local programme management further. Until then, the local programme coordinators were expected to combine a full academic workload with the coordination of a fairly complex programme. In some instances, coordination tasks were also partly borne by (Flemish) experts, potentially compromising local ownership and management capacity-building.

With regard to the Partner Programmes started in 2003, VLIR has therefore invited the partners to recruit a full-time programme manager who will ensure:

- Proper communication with local and Flemish stakeholders
- Programme management and administrative support
- Programme monitoring and methodological facilitation
- Documentation and information sharing
- The harnessing of synergies within and beyond the partner programme

In the long run, it is hoped that the programme managers will be absorbed by the local partner as they will have gained important experience of programme management and resource mobilisation.

VLIR also hopes that the programme managers will act as resource persons who might contribute to the development of relevant tools and concepts through which overall programme quality might be enhanced further.

### IUC Programme: Content and dynamics

While every IUC partnership is distinctively unique, the following are some general observations:

- Almost all partnerships include ICT-related projects as well as a library project
- The majority of projects has a substantial research component
- Scholarships and training in general constitute a major input for capacity-building
- Managerial support so far does not feature prominently

Increasingly, the respective IUC programmes converge around a central theme such as 'Environment Management', 'Sustainable Rural Livelihoods' or 'Dynamics of Building a Better Society'. Such a central theme allows for a multidisciplinary approach by a broad academic team.

In University Development Cooperation, sustainability remains a critical challenge, particularly in weak institutional or national environments. Furthermore, policy changes at the level of the partner universities are sometimes required in order to create an institutional environment that is conducive to resource mobilisation (e.g. ability to retain resources at the unit level) and/or research activities (through relieving or research-output-based remuneration or promotion).

Furthermore, the IUC programme very often presents an opportunity for central management to instil new practices or institutional attitudes. Exposure to a different working culture and the need to collaborate among colleagues over and above departments and faculties, does indeed generate institutional dynamics that can have a lasting impact. Such forms of indirect impact (e.g. participatory decision-making, results-based working habits, shaping an institution around a common vision, etc.) can be as important as the planned programme objectives.

In due course, VLIR will make available IUC project summary sheets that will enable all programme stakeholders and interested outsiders to obtain information regarding the IUC projects that are being implemented. Based on the project title programme stakeholders

may get in touch with the responsible Flemish and/or local project leaders. In this manner, it is hoped that information exchange may take place. Through such an exchange programme stakeholders may seek areas for collaboration e.g. in the framework of the VLIR North South South Co-operation Fund (NSSCF).

The VLIR IUC programme provides a dynamic framework for institutional cooperation, including the notion of learning and flexible responses to emerging demands and/or opportunities identified during its implementation.

From its inception, the notion that VLIR would take initiatives on common areas of interest that could add value to the IUC programme has been present. Gradually, the realisation that the partners themselves should be offered opportunities to enhance networking and exchanges has also gained ground. Henceforth, the intention of VLIR is to also earmark a budget for South-South cooperation initiatives over and above the cross-cutting initiatives headed by VLIR itself.

This intention was widely supported during the Joint IUC Policy Meeting, held in Brussels on 7-8 May 2001. While VLIR intended to launch the SSCF in 2004, budgetary constraints forced a delay. Meanwhile, however, VLIR will in a phased manner develop a database of IUC projects and related contacts accessible to all stakeholders. This will allow for exchanges of ideas that may be translated into proposals for VLIR (co)funding at a later stage.

#### IUC: Permanent expert groups

VLIR is experiencing a high demand for support in the areas of ICT and Library Development. In order to allow its partners to draw upon a pool of expertise, rather than the expertise of an individual, VLIR has created the following expert groups:

- ICT/OLL Expert Group
- Expert Group on Library Development/Management

While the operational modalities and mandate of these groups is still to be determined, they have already proven to be of great value for the organisation of cross-cutting initiatives such as the Library Development workshop or the ICT/OLL Workshop in 2003.

#### ***International training initiatives in the framework of the VLIR IUC Programme***

In the framework of the Institutional University Co-operation Programme cross cutting areas of collaboration may be identified such that training initiatives targeted at representatives of all IUC partner universities and addressing a common issue may be organised. Research Policy Development and Research Fund Management has been identified as such an area of common interest.

#### Intensive Training Programme on Research Policy Development and Research Fund Management

On a number of occasions and as part of its IUC programme, VLIR had announced its intention to provide training on topics related to institutional development and management. Such a training course would complement cross cutting activities in the area of ICT and library development that have been organised in the past, and continue to be important areas for exchange and learning among Flemish and IUC partner universities.

In view of the fact that:

- directly or indirectly a good number of IUC programmes and/or projects aim at realising a more research oriented institutional culture;
- an increasing number of ongoing IUC programmes have established a (competitive) research fund as a vehicle contributing to realising a more research oriented institutional culture;
- VLIR intends to establish a post IUC Research Fund eligible to former IUC-projects on a competitive basis;

- Belgium, Flanders and the Flemish universities have a range of policies and instruments that aim at promoting research at various levels; organising an intensive international training course on ‘Research Policy Development and Research Fund Management’ will complement and reinforce many ongoing efforts, as well as address a need that is commonly felt as important and relevant in order to contribute to the sustainability of the IUC programme results.

#### Training programme objectives

The training programme is meant to enhance the understanding and knowledge of representatives of the IUC partner universities in terms of:

- the international research environment and the challenges it faces to universities in the South
- elements constituting a conducive institutional research policy.
- various instruments contributing to research policy development based on practical cases and examples
- the organisation of an institutional research fund (calls, screening, selection, monitoring and evaluation etc.).

#### Participants

The proposed international training programme will address the following target groups:

- management representatives of the IUC partner universities (Deputy VC, those responsible to promote research in all its forms etc.)
- local managers of research funds either academic or administrative.
- relevant permanent experts

This training will be attended by 20-30 IUC participants drawn from the VLIR IUC partner universities.

Participants from Belgium universities will be invited to give lectures, chair discussions, lead practical presentations or simply attend the training programme.

#### ***VLIR Research Backpacks for International Course Programme Graduates***

A research backpack is a starter credit which enables graduates from an International Course (ICP, not necessarily VLIR-ICP) – originating from developing countries - to acquire products necessary for their research (equipment, consumables), once the graduates are back in the South institution that employs them. This support with a maximum duration of 1 year, encourages ICP graduates to initiate their own research in the local institution in case sufficient budgetary funds are not available (with a maximum of 7000 € per project). Research backpacks are not limited to IUC. As such it is not necessary for a student to an International Course Programme to be affiliated with a VLIR- IUC South partner university.

Every year 2 calls are launched for research backpacks under the ‘South Initiatives’ programme of VLIR, followed by a competitive selection.

#### **References:**

[http://www.dgdc.be/documents/fr/notes\\_strategiques/education/education\\_fr.pdf](http://www.dgdc.be/documents/fr/notes_strategiques/education/education_fr.pdf)

<http://www.vliruos.be/>

<http://cud.ciuf.be/>





# **GUIDANCE NOTE ON DANISH SUPPORT FOR CAPACITY DEVELOPMENT**

August 2006

## I. Introduction

Capacity development (CD) is an integral part of Danish development cooperation, whether it be programme support, components of programmes or single projects. Accordingly, assessing institutional, organisational and human capacity is a key element in the preparation of all types of development cooperation.

In an evaluation<sup>1</sup> of CD in Danish-supported programmes, the interventions screened were shown to have *weak analytical underpinnings*, both regarding the targeted organisations and the context in which they were operating. The CD support focused strongly on the *technical, functional aspects* of the internal workings of organisations (skills development, general management training, structures, procedures, and mandates), while there was typically *little analytical attention paid to the external context and political issues*. Targets, outputs and indicators for CD support were generally not specified, and only to a limited degree linked to specified output/outcome changes of the recipient organisation. Consensus with partners on how to measure or evaluate the results of the CD support was rarely established prior to implementation.

According to the Paris Declaration on Aid Effectiveness<sup>2</sup>, the capacity to plan, manage, implement, and account for results of policies and programmes is critical to achieving development objectives. CD is the responsibility of partner countries, with donors playing a supportive role. In the declaration, *partner countries commit to* integrating capacity strengthening objectives into national development strategies, and to pursuing their implementation through country-led capacity development strategies where needed, while *donors commit to* aligning their analytic and financial support with partners' capacity development objectives and strategies, to making effective use of existing capacities, and to harmonising support for capacity development accordingly.

Against this background, the *objective* of the present guidance note is to provide staff at Embassies and Headquarters as well as consultants with an easy-to-apply assessment tool for the planning and preparation of CD interventions in programmes and projects supported by Denmark<sup>3</sup>. In line with the commitments of the Paris Declaration, capacity assessments should, to the extent possible, be carried out jointly with partners and other donors. In that respect, the present note serves as a reference paper, which can be used by staff and consultants to ensure that CD interventions are appropriately assessed. The note can be applied as a checklist to see whether key aspects of capacity development analysis have been properly addressed. And hopefully, it can help identify areas where further assessment should be carried out.

While the note does not pretend to cover all aspects of the complex field of CD, hopefully it will serve to inspire staff and consultants working with capacity development in their day-to-day job. Comments on the note are welcome and should be forwarded to [bft@um.dk](mailto:bft@um.dk). To ensure consistency with the upcoming strategy for good governance, the note is expected to be revised in the middle of 2007.

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<sup>1</sup> The evaluation reports and the paper "A Results-Oriented Approach to Capacity Change" Danida, February 2005, which has informed this guidance note, can be found on [www.evaluation.dk](http://www.evaluation.dk) under 'other reports/capacity development'.

<sup>2</sup> Paris Declaration on Aid Effectiveness. Ownership, Harmonisation, Alignment, Results and Mutual Accountability. March 2005.

## II. What to consider when making an organisational capacity assessments<sup>4</sup>

### The organisation as the unit of analysis

The unit of analysis in this guidance note is the individual *organisation*, for which CD is being considered as part of Danish-supported programmes.

In most cases, sector or thematic programmes will support a number of organisations, which might be partly interlinked, even subordinated to each other. Moreover, a number of the external factors (structures, institutions and organisations/persons) will be common to all organisations. However, the same external factors might impact organisations very differently, depending on the internal dynamics of each organisation. Therefore, a specific assessment must be carried out for each relevant organisation.

### Focus on outputs

An organisation's capacity is defined as *the ability of the organisation to perform appropriate functions efficiently, effectively, and sustainably in pursuit of organisational goals and outputs*.

The effect of CD assistance should be measured against the *outputs* delivered by each organisation, and benchmarks and targets should be designed for changes in these outputs.

There are four key reasons for focussing on outputs:

- Firstly, the outputs resulting from increased capacity must contribute to development. Thus, focus should not be on inputs or activities (training, OD etc.) or broad impacts, which can be difficult to measure, but on the specific output that the organisations aim to produce more efficiently and effectively (e.g. health services, teacher training, national statistics).
- Secondly, focusing on outputs enables identification of target organisations for capacity development, and of the relevant context factors.
- Thirdly, changed outputs are the immediate effect of capacity development. If CD activities do not contribute to quantitative or qualitative changes in organisational outputs, they should be reconsidered, changed or stopped.
- Fourthly, tracking and assessing specific output changes helps organisations learn how to improve capacity, and helps provide a clearer basis for political accountability.

### Factors that influence organisational change

When analysing organisational change, it is important to consider both *internal* and *external* factors. Factors external to an organisation are often powerful drivers of organisational capacity change, and often provide incentives and pressures for organisations to initiate internal changes that may enhance capacity. External factors, however, may also be important constraints to change.

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<sup>4</sup> The following sections are primarily based on 'A Results-Oriented Approach to Capacity Change', Danida, February 2005 ([www.evaluation.dk](http://www.evaluation.dk) 'other reports/capacity development').

Furthermore, both “political” factors (e.g. commitment to and leadership of change processes; power to push or pull changes through; stakeholder pressure) and “functional-rational” factors (e.g. legal mandates, organisational structure) must be considered. Political factors are often *as important or more important* than functional-rational factors.

The table below provides a framework for analysing factors that influence organisational change, positively or negatively.

**Table 1: Four major options for organisational change**

	<b>Functional-rational dimension</b>	<b>Political dimension</b>
<b>Internal dimension</b>	<p><i>Getting the job done</i></p> <p>Focuses on changes in task-and-work system <i>within</i> the organisation.</p> <p>Most donor interventions have been in this category, which includes skills training, organisational restructuring, human resource development etc.</p>	<p><i>Addressing power relations and accommodating interests</i></p> <p>Focuses on <i>internal</i> changes in power and authority distribution and pursuit of different interests.</p> <p>Interventions include hiring and promotions based on merit, building internal coalitions for change, introducing performance-based payments, actively discouraging rent-seeking.</p>
<b>External dimension</b>	<p><i>Creating an “enabling environment” for doing the job</i></p> <p>Focuses on how changes in <i>external</i> factors and incentives will affect the task-and-work-system dimension of organisational capacity.</p> <p>May include protecting certain functions (e.g. internal revenue, customs, central banks) from political influence and poor working conditions, ensuring external audits, focussing on outputs etc.</p>	<p><i>Forcing change in the internal power relations</i></p> <p>Focuses on how changes in <i>external</i> factors and incentives will affect the dimension of power and authority distribution, conflicts and pursuit of different interests in the organisation.</p> <p>Examples include the strengthening of civil-society organisations or of political accountability, building external coalitions for change, strengthening the media’s watchdog role.</p>

All four dimensions must be included in a CD assessment. Change processes may focus more on one perspective than another, but constraints and opportunities may be overlooked unless all dimensions of capacity change are taken into account. Thus, a narrow focus on introducing

“technical fixes”, in response to what *also* stems from underlying constraints in power and incentive structures, is usually doomed to failure.

The distinction between the “functional” and “political” perspectives is not clear-cut. Any “functionally” oriented intervention is likely to have implications, which benefit some but are detrimental to other aspects. Apparent technical changes will often redistribute power among staff or units. Moreover, any “politically” oriented intervention aimed at changing power structures will eventually result in attempts to change formal procedures, practices or policies.

Similarly, internal and external factors are interrelated: identifying problems inside an organisation does not automatically imply that these should be mostly or exclusively addressed through an “internal” approach. Internal capacity problems may often have to be tackled by seeking to influence those external factors that shape the internal capacity.

### **III. Capacity assessment during the identification, formulation and appraisal phase**

In the following, a number of relevant questions are raised. These can be asked when screening the need for CD during the identification, formulation and appraisal phase of Danish-supported programmes. The list is not meant to be exhaustive, but should rather serve as inspiration when addressing the issue of CD as part of the requirements set out in the Guidelines for Programme Management.

#### **IDENTIFICATION PHASE**

##### *Mandate*

1. Does the proposed capacity development assistance support the most relevant organisations, that is: the organisation(s) which most appropriately and efficiently (e.g. within the sector/thematic area) can produce the outputs needed to achieve the overall development goal (improved service delivery, poverty reduction etc.)?
2. Are the goals and mandate of the identified organisation(s) clearly defined, and in line with overall national policies?
3. Are outputs to be produced by the organisation in question clearly defined? Are targets and benchmarks set for achieving these outputs? Is there a consensus on the changes in outputs to be achieved over time? Is there a common understanding of the time horizon of the CD support, and of possible exit strategies?
4. Do the available resources (human, financial etc.) seem to match the need (as formally stated)?

##### *Internal factors*

5. Has the task-and-work system (strategy, organisational set-up and reward mechanisms) been analysed (aspects which might further or hamper the production of outputs)?
6. Have potential internal conflicts regarding interests, power and goals been examined (conflicts which might further or hamper the production of outputs)?
7. Do informal or real goals, mandate and outputs exist which differ substantially from those formally stated?

##### *Analysis of external factors: the functional dimension*

8. Which external factors in the environment of the organisation (reform processes, structures, institutions, organisations or individual persons) influence the task-and-work system of the organisation and its ability to produce the defined outputs?

9. Are changes in external factors likely to occur? Are influential external factors likely to (i) provide incentives for and further the production of outputs, (ii) provide disincentives for or hinder the production of outputs, (iii) have an adverse impact on the production of outputs? (Have these factors been mapped out?)
10. Which of the above external factors can be influenced by the organisation, and which may only be appreciated by the organisation?

*Analysis of external factors: the political dimension*

11. Which external factors of the organisation (reform processes, structures, institutions, organisations or individual persons) have the potential (and interest) to influence the organisation (and its goals, mandate and outputs)?
12. Are changes in external factors likely to occur? Are influential factors and stakeholders (i) likely to further a clearer mandate and greater availability of the appropriate resources, (ii) likely to do the opposite, (iii) likely to clash due to conflicting interests? (Have these factors been mapped out?)
13. Which of the above external factors can be influenced by the organisation and which cannot?
14. Does the organisation (formally or informally) seem to have an understanding of the external factors, and can the likely impact on the organisation be foretold? (Including both the political and functional dimension.)
15. Does the organisation (formally or informally) have a strategy (and the will and resources) for dealing with those external factors that it may potentially affect? (Including both the political and functional dimension.)

**FORMULATION PHASE**

16. Are changes in outputs to be supported by the programme clearly defined, and do they reflect the overall objective and mandate of the organisation?
17. Can a set of CD baseline indicators be established to measure the outputs? Have the changes in outputs to be achieved, and the corresponding indicators at specified times, been agreed upon by the partner organisation(s)? And has it been agreed how to monitor and review the implementation process?
18. Is the delivery of the outputs supported internally in the organisation, or can conflicting interests and incentive structures be identified? In the latter case, have conflicting interests and incentives been outlined and assessed?
19. Do informal goals and outputs exist which differ substantially from those formally stated? To which extent is this due to internal and/or external factors? (Can potential external factors be influenced?)

20. Has a process been defined towards further clarification of goals, mandate and outputs? Is correspondence ensured between formal and informal goals/outputs? (Taking both internal and external factors into consideration).
21. Has all four dimensions of organisational change (internal/external and functional-rational/political) been sufficiently considered for inclusion in possible strategic CD support?
22. Has the proposed technical assistance, if any, been designed following the principles of the TA Policy Paper<sup>5</sup>? In particular, has pooling of TA with other development partners been considered?
23. Does the proposed support strategy address the issues proved by experience to be crucial for successful CD, namely: (i) clear commitment to and leadership of the process, (ii) appropriate sequencing, creation of quick gains and long-term time horizon, and (iii) management of opposition to change?
24. Has the proposed CD support strategy been aligned with national CD strategies, and harmonised with CD support from other development partners? Has a time horizon and exit strategy for the CD support been agreed upon?

### **APPRAISAL PHASE**

25. Have thorough institutional analyses been carried out, addressing all dimensions of organisational change?
26. Is the proposed CD support part of a joint CD support strategy agreed by the partner organisation(s) and the other development partners?
27. Are goals and outputs clearly defined (and indicators established), and has a consensus been established on how to monitor the results of the CD support?
28. Are risks and assumptions clearly analysed, so as to serve as a point of reference for annual reviews and on-going analysis of progress and change in external factors?
29. Is the organisation likely to produce the proposed outputs, taking the external and internal environment into consideration? (Bearing in mind functional incentive structures and political interests.)
30. Has consensus or agreement on how to evaluate the results of the CD support, when to evaluate, and by whom, been established?

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<sup>5</sup> Technical Assistance in Danish Bilateral Aid – Policy Paper, Danida, February 2004 ([www.amg.um.dk](http://www.amg.um.dk) under ‘policies and strategies’)



#### IV. Further readings of relevance to CD assessments

The literature on CD assessments is extensive. The note “A Results-Oriented Approach to Capacity Change” Danida, February 2005, has provided important inputs to this guidance note<sup>6</sup>. DFID has produced a sourcebook with a toolkit, which addresses the broader issues of CD<sup>7</sup>. The World Bank report: “Building effective states forging engaged societies”, September 2005, analyses four decades of experience of capacity development in Africa, including recommendations on how the Bank should tackle CD in the future. A recent paper by OECD/DAC “The challenge of capacity development: Working towards good practice” looks at past experiences of broader CD interventions, and identifies key issues relevant to future CD.

At the country level, a number of general documents are relevant when identifying strengths and constraints of the national system related to public sector management, including public financial management, procurement, etc. Below is a list of key documents, mainly studies and standard analyses, which are regularly updated and are important to understanding the “macro environment” in which CD must be assessed, developed and monitored. In addition to these, programme documents and progress reports for macro-reform programmes (e.g. public service reform programmes, decentralisation programmes, etc.) provide valuable contributions to the understanding of factors external to a specific organisation being studied.

Title and link	Content	Remarks
<a href="#">Country Financial Accountability Assessment (CFAA)</a>  <a href="#">PEFA</a>	Assessment of a country’s public financial management system, with particular focus on a detailed assessment of accounting and audit systems: laws, regulations, procedures. Also broader assessment of the financial sector. Produced by the World Bank (in collaboration with other donors).	Provides a snapshot of systems and procedures at a given moment in time – no assessment of reform programmes underway. Regular updating of CFAA is being replaced by a comprehensive set of indicators (PEFA), which are monitored annually or bi-annually.
<a href="#">Country Procurement Assessment Review (CPAR)</a>	Assessment of a country’s public procurement system: laws, regulations, procedures. Produced by the World Bank (in collaboration with other donors).	Provides a snapshot at a given moment in time. A few elements of procurement are included in PEFA indicators and

<sup>6</sup> [www.evaluation.dk](http://www.evaluation.dk) under ‘Other reports/capacity development’.

<sup>7</sup> DFID (2003) Promoting Institutional and Organisational development. A Sourcebook of Tools and Techniques.

		monitoring (see above). Currently, a full set of indicators of procurement objectives is being elaborated through the OECD/DAC.
<a href="#">Public expenditure review (PER)</a>	<p>Review (retrospective examination) of public expenditure: aggregate fiscal framework, strategic allocation between sectors, efficiency and effectiveness of expenditure. The contents vary, as selected topics are often dealt with in more detail.</p> <p>Produced by the World Bank (and other donors) at regular intervals in most countries.</p>	In some countries (e.g. Tanzania, Uganda) produced by country authorities as part of annual budget preparation. The WB (and other donors) conduct an 'external evaluation' focusing on selected key issues.
<a href="#">Medium Term Expenditure Framework (MTEF)</a>	A country's medium-term strategic plan for allocation of overall financial resources (often 3-year rolling plan). Typically focused on translating PRSP objectives into annual budgets.	Nationally-produced document (by Ministry of Finance)
<a href="#">Poverty Reduction Strategy Paper (PRSP) – and background analyses</a>	A country's overall medium-term plan for poverty reduction, setting out areas of priority for policy action. In some countries, this is a sub-set of an overall development plan, in others basically the entire development plan. Typically, a system of indicators for monitoring poverty reduction outcomes/impact is linked to the PRSP.	PRSP available in each country or the WB. Annual progress reports on PRSP implementation available in each country. Typically, second-generation plans focus more widely on capacity development issues.
'Drivers of Change' studies, power studies, or the like <a href="http://www.gsdr.org/go/topic-guides/drivers-of-change">http://www.gsdr.org/go/topic-guides/drivers-of-change</a>	Studies attempting to describe who the 'change agents' in a country are, whether inside or outside government. Describes both the formal and informal power structures in a country.	Typically initiated by DFID and possibly other bilateral agencies.
<a href="#">Poverty and Social Impact Assessment (PSIA)</a>	Assessments attempting to estimate the poverty and social impact of a particular policy initiative. Contents and depth of analysis vary greatly from one study to another.	Driven by the WB and IMF; other partners can participate.



**ERA-ARD:**

**The Agricultural Research for Development (ARD) dimension of the  
European Research Area (ERA)**

**Task 2.2:**

**Identification of innovative approaches and institutional arrangements for  
implementing joint ARD sub-programmes**

**Identification and description of innovative approaches, practices and  
institutional arrangements for capacity development in ARD**

**Contribution of Hungary**

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## **Identification and description of innovative approaches, practices and institutional arrangements for capacity development in ARD**

### **Introduction**

Since there is no systematic ARD scheme and appropriate institutional background for ARD in Hungary, agricultural research programs are usually initiated by those research institutions, which have traditional collaborating partners in developing countries. Therefore, relevant research institutions are identifying the possible research programs and then initiating and implementing them in the frame of a Memorandum of Understanding signed between the partner institutions that are usually based on a Cooperation Agreement signed between the ministries concerned.

There have been very few examples of ARD programs in Hungary for a long period. Even if there has been relatively active collaboration between agricultural research institutions in Eastern Europe and "socialist" developing countries (like Cuba, Laos, Vietnam), the collaboration was mainly focused on exchange of scientists and information in the past, which was rather formal. After the economical and political changes and consequent difficulties in Eastern Europe in the early nineties, even these formal R&D contacts almost completely stopped and there have been only a few examples for ARD activities during the past fifteen years.

In spite of the limited ARD experiences in Hungary, there are at least the following four practices for capacity development in ARD:

- (1) ARD activities in the frame of Hungarian IDC programmes;
- (2) bilateral international collaboration of the agricultural research institutions of the Ministry of Agriculture and Rural Development;
- (3) bilateral intergovernmental S&T cooperation managed by the National Office for Research and Technology;
- (4) bilateral international collaboration of the agricultural research institutions of the Hungarian Academy of Sciences.

However, no any standardized common tools, approaches or methodologies are used systematically during the identification and implementation of ARD projects; the different funding institutions are using their own project management systems during the selection and implementation of ARD projects. It should be noted that these principles have been used for many years during project planning and management, however, somehow instinctively, without being aware the availability of modern methods of project cycle management in Western countries. Coordination between the different practices is still insufficient, although it has been declared in the recently established International Development Cooperation policy of Hungary.

In this paper the above four practices are overviewed in general and then explained in more details through the description of experiences gained by the Research Institute for Fisheries, Aquaculture and Irrigation (HAKI) in international cooperation. In Chapter 1 the Hungarian IDC policy and ARD-related IDC programs are overviewed and HAKI experiences in project management are summarized. Chapter 2 presents the role of the Ministry of Agriculture and Rural Development in the management of bilateral international cooperation and HAKI involvement in collaborative projects, especially in Vietnam and Laos. In Chapter 3 and 4, two other approaches and institutional backgrounds are described, which are also based on traditional bilateral collaborations with institutions in developing countries.

## 1. ARD activities in the frame of Hungarian IDC programmes

### 1.1. Hungarian Policy for International Development Cooperation

Hungary, while acceding to the OECD and the European Union, assumed the responsibility to work out and implement an international development cooperation policy conforming to OECD and EU principles and practices. It agreed to fulfil the commitments and the targets set in the UN Millennium Declaration and the Millennium Development Goals (MDGs). The Hungarian international development policy is consistent with the foreign policy of the country and the moral goals set out in the Government programme.

In order to meet these obligations, the Hungarian Government adopted the Concept Paper of the Hungarian Development Cooperation Policy in July 2001, taking into consideration the actual economic and social background and previous International Development Cooperation (IDC) experiences ([http://www.kulugyminiszterium.hu/kum/hu/bal/Kulpolitikank/Nemzetkozi\\_fejlesztes/koncepcio.htm](http://www.kulugyminiszterium.hu/kum/hu/bal/Kulpolitikank/Nemzetkozi_fejlesztes/koncepcio.htm) in Hungarian only). The political and economical transformations in 1989-90 caused a significant loss in the economy resulting in deterioration of social conditions, differentiation of personal incomes and in some places growth of poverty. Today, in terms of macro-economic indicators, the Hungarian economy is steadily growing, but there is still much to be done in the field of structural reforms.

Against this background it is a great challenge for a small country like Hungary, with limited resources, to pursue an efficient IDC policy and catch up with developed donors. Nevertheless, on the basis of the Concept Paper of IDC, the policy has already attained certain achievements. By now the institutional, legal and financial frameworks of the Hungarian IDC policy have been established ([http://www.kulugyminiszterium.hu/kum/en/bal/foreign\\_policy/international\\_development/idc.htm](http://www.kulugyminiszterium.hu/kum/en/bal/foreign_policy/international_development/idc.htm)). The implementation of development projects financed from the IDC allocation of the national budget, coordination of the activities by line ministries carrying out separate IDC projects so far, and the involvement of the private and civil sector into IDC have started and made certain progress. The overall Hungarian IDC policy, as well as the individual development projects and programmes focus increasingly on MDGs.

Before the political and economical transformations the Hungarian government provided considerable assistance to developing countries, but this aid served basically ideological and political purposes. Before the OECD and EU accession, Hungary had already started to give preferences for goods imported from developing countries and eased or lifted the debt services of some of them. This policy has continued and the strictly professional positive elements of the past aid activities have been utilised in formulating the new Hungarian IDC policy.

In order to use our limited resources in the most efficient way, clear targets and preferences were set when deciding on partner countries and IDC sectors. To be able to fully utilise Hungary's comparative advantages and to ensure maximum added value to the EU common IDC, the Hungarian IDC policy mainly focus on Western Balkan and CIS countries with the aim to share experiences gained in the course of political and economic transition and EU accession. Hungary, as an aid recipient country up to the recent past, has also rich experiences of receiving and best utilising aid, which can be conveyed to the partner countries as well. The Hungarian Government is confident that a well-targeted knowledge-transfer project of modest financial value can have a really great intellectual impact.

### ***Priority regions and countries***

In view of the overall interests, it is necessary to accord special priority to neighbouring countries, since Hungary has a vital interest in the stability and development of the region. The geographical span of Hungary's international development policy, however, is wider than that, as it also reflects the main objectives of the European Community in this area such as sustainable development, poverty reduction in partner countries, their integration into the world economy and promoting democracy, the rule of law and good governance. ODA partners therefore have also been chosen from the LDC group, whereas some Far-Eastern countries were included on the list due to the traditions of our bilateral relations and previous personal contacts, and the experiences accumulated in the course of the cooperation of the past decades.

Based on the above considerations, there are four groups of countries targeted by the Hungarian IDC activities:

Strategic partners:	Serbia and Montenegro, Bosnia-Herzegovina, Vietnam.
Other partner countries:	Macedonia, Moldova, Mongolia, Kyrgyzstan, Ukraine, Palestine Authority.
Least developed countries (LDCs):	Ethiopia, Yemen, Cambodia, Laos.
International commitments:	Afghanistan, Iraq.

### ***Sectoral priorities***

Obviously, the development assistance activities of Hungary were concentrated primarily on those sectors and areas where Hungary has comparative advantages. When identifying these areas, the experience accumulated through the relations had earlier with developing countries and the domestic conditions were also taken into account. Without observing an order of importance, the following nine fields of activities are given greater emphasis (see details: ([http://www.kulugyminiszterium.hu/kum/en/bal/foreign\\_policy/international\\_development/idc.htm](http://www.kulugyminiszterium.hu/kum/en/bal/foreign_policy/international_development/idc.htm)):

1. Sharing Hungarian experiences associated with the political-economic transition.
2. Knowledge transfer, knowledge-based assistance.
3. Promoting education (university and postgraduate), training of experts and technicians, developing curriculum, organizing distance learning.
4. Developing health services.
5. Agriculture and food industry.
6. Contributing to water management and water resources development; planning and providing technical advice.
7. Developing general infrastructure.
8. Helping general and transport engineering activity, cartography.
9. Providing technical advice on environmental protection.

### ***Legal and institutional framework***

On the basis of Government Decision 2319/1999, the Ministers of Foreign Affairs, Economy and Finance drafted a Concept Paper proposing a new approach to international development cooperation (IDC) for the Republic of Hungary. The Paper proposed that Hungary replace its practice of delivering its contribution to ODA as a series of ad hoc and decentralised initiatives with a practice adapted to UN and EU standards. The Paper proposed that the Ministry of Foreign Affairs (MFA) would draw up the annual plan for the delivery of IDC and would act as

the interdepartmental co-ordinator. On the 24<sup>th</sup> of July 2001, the Government approved the Concept Paper.

In the context of institutional development, the International Development Cooperation Department was established within the MFA in October 2002 to execute all IDC activities. 2003 marks the Department's initial year and it is intended that it will manage Hungary's IDC program in a manner intended to reflect the practices of donors as established by the OECD and EU.

Government Decree 82/2003 modified the responsibilities and competence of the Minister of Foreign Affairs to include IDC activities. Government Decision 2121/2003 (06.06.) decided to establish the IDC Interdepartmental Committee (IDC IC) chaired by the Minister of Foreign Affairs and primarily responsible for determining partner countries and target areas for the Hungarian IDC. An IDC Committee was also established in the Ministry of Foreign Affairs to harmonise IDC programs with the foreign, security and foreign economic policy objectives. It is also the responsibility of the Ministry of Foreign Affairs to regularly inform the Foreign Affairs and Budget Committees of the Parliament about the IDC activities.

The IDC IC is assisted by an Interdepartmental Expert Group of delegated representatives of the ministries, founded on March 10, 2003. The development policy coordinated by MFA shall not replace the international aid-support activity and funding program so far pursued by the various line ministries and institutions. However, the MFA is now responsible to harmonise, with the active participation of the line ministries, all Hungarian development activities and to assist in the efficient use of central IDC resources. The IDC IC is also assisted by a Civil Advisory Board to allow and encourage the participation of social and professional organisations and representatives of public life in the review of Hungarian IDC activities and to expand the efficiency of IDC activities and enhance their social acceptance. This Board consists of representatives of the Ministry of Foreign Affairs, political parties, trade unions, employers' associations, the academic community, NGOs and individual experts. ([http://www.kulugyminiszterium.hu/kum/en/bal/foreign\\_policy/international\\_development/civil\\_advisory.htm](http://www.kulugyminiszterium.hu/kum/en/bal/foreign_policy/international_development/civil_advisory.htm)).

The IDC institutional structure is operational from the second half of 2003 when the planning and execution of actual development programs and projects started. The IDC program is open to the corporate sector, NGOs and other members of the Hungarian society.

## **1.2. ARD activities in the frame of agriculture-related IDC projects**

Although there is an IDC policy in Hungary, there is no specific policy for ARD. However, there are at least five priority fields within the nine sectoral priority areas of the Hungarian IDC policy, which are more or less closely related to agricultural research and capacity development according to the following list (in the order of importance):

*No. 5:* Agriculture (dissemination of state-of-the-art plant and animal breeding methods, seed improvement, plant hygiene - plant protection, freshwater fish breeding, forestation programmes, farm development plans, biotechnology, agro-meteorology, training of specialists and engineers in farming-related areas), food industry (planning of slaughterhouses).

*No. 3:* Promoting education (university and postgraduate), training of experts and technicians, developing curriculum, organizing distance learning.

*No. 2:* Knowledge transfer, knowledge-based assistance (methodological procedures, know-how, software, transfer of organizational and planning methods, etc.).



*No. 6:* Contributing to water management and water resources development, planning and providing technical advice (reservoirs and barrages, water purification plants, planning of dikes, inland drainage, exploration and assessment of water stocks, etc.).

*No. 9:* Providing technical advice on environmental protection.

### **1.3. Experiences of HAKI in aquaculture-related IDC project management**

In Hungary, the Research Institute for Fisheries, Aquaculture and Irrigation (HAKI) is in a somewhat special situation in Eastern Europe having wide international relationship since 1975, when HAKI was developed into an international aquaculture research, development and training center in the frame of an UNDP/FAO development program. HAKI is a governmental research organisation that has been established in 1953. Its main research philosophy is to link science to practical application, thus research programmes are focusing on new challenges that aquaculture, fisheries and water management are faced with recently, like the scarcity of water (the increasing competition among water users); the better use of water resources and the protection of the environment; the improvement of human nutrition and food security; the protection of gene reserves; and fostering of professional traditions. The demand-led approach, the complexity and flexibility are enabling HAKI to assist aquaculture and fisheries development programmes efficiently both in Hungary and abroad, through applied research, technology development, training, demonstration and extension.

HAKI belongs to the Ministry of Agriculture and Rural Development that provides a core fund of about 40 percent of the total annual budget. The remaining income derives from competitive grant funds, consultancies, services and training programmes, through the intensive use of the wide range of expertise and the complex of facilities. The institute closely collaborates with commercial farms, companies, producers' organisations, research institutions and universities in the country and in the wider region. HAKI has also been actively involved in the preparation and implementation of aquaculture and fisheries development programmes in developing countries since the early eighties.

The active international relationship helped HAKI to maintain and even enhance ARD activities even during the difficult and prolonged transition period in Eastern Europe. Between 1994 and 1999, HAKI was the implementing institution of a 2 million USD project in Vietnam in the frame of a Dutch Government financed project called "West-East-South (WES)" project. The main objective of the WES project was the institutional strengthening of aquaculture research, education and extension in the southern part of Vietnam (Cantho University). In addition, the secondary objective of the project was to strengthen the capacity of HAKI in planning and implementation of projects in developing countries. Thus, staff members of HAKI could enhance their knowledge in modern principles of project management during the elaboration and implementation of this project.

After the successful completion of the WES project, HAKI could maintain close relationship with Vietnamese institutions (Cantho University in Cantho City, University of Agriculture and Forestry in Ho Chi Minh City, Research Institutes for Aquaculture No.1 in Hanoi and No.2 in Ho Chi Minh City) and regional organisations (NACA - Network of Aquaculture Centers in Asia-Pacific, MRC - Mekong River Commission, CGIAR World Fish Center, AIT - Asian Institute of Technology, INGA - International Network on Genetics in Aquaculture), and could also develop new relationships in the region (Laos, China, Indonesia).

When Hungary became the member of the EU, new opportunities emerged for ARD. In the frame of the Hungarian International Development Cooperation Program, HAKI is currently implementing one project in Vietnam and one in Laos, aiming at the fish seed and fish feed supply for sustainable aquaculture development in rural areas. These are not typical ARD projects, however, the local partners are research institutions (Research Institute for Aquaculture No.2. in Vietnam, and National Agriculture and Forestry Institute in Laos), and the projects have R&D elements as well.

### **1.3.1. West-East-South cooperation in aquaculture development (The WES concept)**

In order to support sustainable aquaculture development in the Mekong Delta of Vietnam, a so called West-East-South Project (WES) has been launched in 1994 that is financed by The Netherlands' Government and implemented by HAKI, Szarvas, Hungary mainly through the Fisheries Departments of the College of Agriculture of Cantho University (CAFID). The immediate objectives of the project were to strengthen and upgrade the educational, applied research and extension capacity and capability in aquaculture in the Southern part of Vietnam; to improve access to current knowledge and experience in aquaculture development; and to increase institutional cooperation between national partners and international development organizations involved in aquaculture.

It was a unique feature in international aquaculture development, when an Eastern European institute was responsible for the implementation of a complex development project (with a budget of about 2 million USD) in a developing country, and there have been reservations about the fate of the project. However, the viability of the WES concept has been proven during the implementation of the project, and the main findings are summarized in the following:

- The donor country (The Netherlands) could assist the safeguarding and development of R&D values in Eastern Europe (Hungary), and also the improvement of nutrition and income sources in a developing country (Vietnam) in the frame of a single aquaculture development project;
- Foreign aid became available for an Eastern European institution, namely for HAKI in this scheme, that otherwise may not be available;
- The staff of HAKI became familiar with up to date project planning and management methods, and gained valuable experiences;
- No executing agency has been involved in the implementation of the project, and by sharing the tasks, the cost could be reduced and the efficiency increased. The CAFID was a partner during the implementation of the project and not merely a subsidized institute, thus gaining valuable experiences in project management;
- The R&D capacity of HAKI could be better utilized, which otherwise may have been reduced or lost due to the difficulties in the region;
- The collaboration between Vietnam and Hungary and between their institutions has been improved. Relationships and collaborations have been revitalized not only between HAKI and CAFID, but among other institutions as well, and the project has a positive effect on the relationship between the two countries as a whole;
- The project provided good opportunity for Vietnamese and Hungarian professionals to exchange ideas and learn from each other how to adapt to the changing economical and social environment;
- HAKI experts became more familiar with tropical aquaculture and multidisciplinary research;
- There has been a good indirect effect of the project on the development of multilateral collaboration and coordination in Vietnam.

For broadening and strengthening collaborative research and development work between Hungarian and Vietnamese research institutions, a Memorandum of Understanding was signed between the Ministry of Agriculture and Rural Development, Hungary (MoARD) and the Ministry of Fisheries, Vietnam on freshwater aquaculture cooperation for a five year period on the 24<sup>th</sup> of February 2000 in Ho Chi Minh City. According to the MoU, the Hungarian MoARD provides yearly fund for collaboration between relevant Hungarian and Vietnamese institutions. The implementation of the specific programs between the collaborating partners is managed by HAKI from the Hungarian side and RIA-2 from the Vietnamese side.

In order to strengthen regional collaboration with aquaculture centers in Asia, HAKI signed a Memorandum of Understanding with the Network of Aquaculture Centres in Asia-Pacific (NACA) in June 2000. HAKI used to be an Inter-Regional Aquaculture Center of the UNDP/FAO Inter-Regional Network of Aquaculture Centers in the eighties, but collaboration became rather limited due to the changing circumstances both within FAO and in Hungary. The recently signed MoU is a good basis to revitalize formerly active collaboration with NACA and aquaculture centers in the region.

Based on the experiences of HAKI gained during the implementation of the WES Project in Vietnam, it is highly recommended to keep the WES concept alive, and to further promote and support this type of cooperation in the future. There is a high need for further projects in aquatic resources management in Southeast Asia, with special regards to Vietnam and Laos. Although this type of cooperation has been suspended after the termination of the Dutch Government supported WES Project in 1999, it may be worth to be considered such type of cooperation with the involvement of the European Commission and other international organizations and funding agencies. This idea would be in good accordance with one of the main objectives of the present ERA-ARD project as well.

### **1.3.2. Collaboration of HAKI with developing countries**

In spite of the fact that Eastern European research institutions have been rather isolated internationally in the past, Hungarian scientists and aquaculturists have been actively involved in international collaborations not only in the field of research, but also in aquaculture and fisheries development projects world-wide. There is traditional collaboration with the FAO that provided assistance for the establishment of the Warm-water Fish Breeding Station at Szazhalombatta, and for the upgrading of HAKI at Szarvas, Hungary. Hungarian experts assisted several aquaculture development programs in Bangladesh, Brazil, Bhutan, India, Iraq, Iran, Laos, Nepal, Madagascar, Vietnam and several other developing countries. Hungary has also been active in providing training courses in aquaculture for professionals from developing countries. The long and active relationship with FAO provided a good basis for the development of international activities of the institute. Hungarian professionals are also actively involved in the work of the FAO/EIFAC and other international fisheries and aquaculture organizations. Thus, the experience of the institute covers a wider geographical area on global scale.

Hungary has always been in active contact with the neighbouring countries on the field of fisheries and aquaculture, and HAKI has been assisting the development of collaboration between Eastern and Western European institutions as well. The institute has organized a number of international conferences, seminars and workshops in order to promote close international cooperation in the field of aquaculture and fisheries. These events were good contributions to the development of collaboration between fisheries and aquaculture R&D organizations of Eastern and Western European countries.

### **1.3.3. Development of the NACEE initiative in Central-Eastern Europe**

The idea of the establishment of a Network of Aquaculture Centres in Central-Eastern Europe (NACEE) emerged during the activity of the Central-Eastern European Committee of the European Aquaculture Society (EAS) in early 2003. The main mandate of the envisaged network was to facilitate that the R&D sphere in Central-Eastern Europe be an integral part of the European Research Area. After initial evaluation of the needs and possibilities, the idea of NACEE was publicly announced during the International Symposium “Coldwater Aquaculture: Start in the 21<sup>st</sup> Century” in St-Petersburg, Russia on 7-15 September 2003. Aquaculture institutions of five CEE countries (Belarus, Czech Republic, Hungary, Russia and Ukraine) joined the initiative during the conference. This is considered to be the date of launching of NACEE.

In the same period, starting from October 2003, aquaculture-related institutions of the region were informed on NACEE. Within a year, by November 2004, twenty-three institutions and organisations have returned the signed “Letters of intent” expressing their wish to join the Network. Even though the Network existed only informally at that time, it started one of its main activities, collecting and dissemination of aquaculture-related information to members as early as in January 2004. Simultaneously, international acknowledgement and support of NACEE was also growing. Information on the Network was published in several journals, including World Aquaculture Magazine and Eurofish Magazine. Relevant international organizations (EU, FAO, EAS, FEAP, NACA) were informed on the Network and expressed their strong support for the initiative.

The Network is a voluntary association of Central and Eastern European aquaculture institutions, in which all members maintain their full independence. Activities are coordinated by the Research Institute for Fisheries, Aquaculture and Irrigation (HAKI) of Hungary. All member institutions assign a liaison person who is in regular contact with the coordinating institution. The language of the communication is English and Russian, which means that members can use either English or Russian. Members inform the coordinator about all events, which may count for the interest of other members. The coordinator then distributes the information among the members of the Network. The coordinator also disseminates major information from European organisations and institutions, which may be relevant for members of the Network. The directors of the Network will meet once a year in different member countries. The structure and function of the Network could further be defined and regulated upon the decision of the directors of the member institutions. NACEE membership is open to any Central and Eastern European research institute, university or producer association in the field of fisheries and aquaculture. New members can join the Network upon the consensus of the directors of member institutions. Currently, the Network consists of 26 institutions from 13 countries.

### **1.3.4. Recently launched IDC projects supported by the Hungarian government**

Hungary has not been a typical donor country to developing countries in the past; however, there have been several bilateral agreements between Hungary and various developing countries, which contributed to the development of the food production sector.

Hungary, as a new member of the European Union established an International Development Cooperation Program for the assistance of developing countries. Among the 16 beneficiary countries, HAKI has traditional collaboration with Laos and Vietnam. Two project proposals have been submitted to the Ministry of Foreign Affairs by HAKI requesting support from the International Development Cooperation Program according to the following:

- Freshwater aquaculture development in Vietnam through the development of fish seed and fish feed supply and institutional strengthening;
- Development of fish seed and fish seed supply for the improvement of rural livelihood in Laos.

Both proposals were well received and the two projects have been approved for implementation. The start of the Hungarian International Development Collaboration Program opens a new chapter in the assistance of Hungary to the improvement of food security in developing countries. Regarding the long traditions, experiences and relationship in freshwater aquaculture development and also the importance of fish in food security and rural livelihood, aquaculture should be an important element of the Hungarian International Development Collaboration Program in the future as well.

## **2. Bilateral international cooperation activities of the agricultural research institutions of the Ministry of Agriculture and Rural Development**

International scientific cooperation activities under the responsibility of the Ministry of Agriculture and Rural Development (MoARD) are managed jointly by two divisions of two departments of the ministry: Research and Biotechnology Division of the Department of Natural Resources and the International Relations Division of the Department of EU Coordination and International Relations. The Research and Biotechnology Division is responsible for the international cooperation in science & technology and for the agricultural international development cooperation, including ARD activities. The Division also represents the ministry in various national and international scientific and technological committees and organisations. On the field of international scientific and development cooperation, the International Relations Division is responsible for the coordination of international activities of the ministry departments, for the preparation of bilateral international cooperation agreements with partner ministries, for the operation of the FAO Hungarian National Committee, and for the organisation of aids in the frame of World Food Program. International scientific cooperation in agriculture is also supported by the Counsellors of Agriculture working at the Hungarian Embassies abroad, whose activities are partly coordinated by this section of MoARD.

As it was already mentioned above, when an agricultural research institution has a collaborating partner in a developing country and they have jointly identified a promising research project for funding, the usually applied procedure for approval is the following:

- partners request the assistance of the above divisions of MoARD;
- partners prepare and submit the project proposal to MoARD;
- MoARD initiates contact with the partner ministry;
- MoARD prepare a draft cooperation agreement between the two ministries, if there is not any;
- MoARD organise official visit to the partner country or to Hungary to sign the agreement;
- on the basis of this agreement signed on ministerial level, the two partner institutions prepare and sign a bilateral cooperation agreement or Memorandum of Understanding;
- MoARD makes the decision on funding, and contracts with the Hungarian partner;
- partners start project implementation.

The same procedure was followed in the case of HAKI, when a bilateral cooperation was initiated in aquaculture research and training in Vietnam with the involvement of two aquaculture research institutions and two universities between 1998 and 2000. Four separate bilateral MoUs were signed with the four partners following the signature of a cooperation agreement between the Ministry of Fisheries of Vietnam and the MoARD of Hungary. Then the Hungarian ministry decided to provide fund for a 5-year period, but with a yearly approval and contract on the size of the fund.

The same procedure was also applied in the latest projects carrying out in Laos and Vietnam, when HAKI and its partners elaborated project proposals for funding from the Hungarian IDC budget. The only difference was that the proposals were parallel submitted both to the MoARD and the MFA, which is responsible for the management of IDC activities and its committee makes the decision on funding. When the projects were approved, the procedure was the same as described above. Project contracts were signed between MoARD and HAKI, and during the project implementation MoARD is responsible for the monitoring and evaluation of the progress and achievements of the project on the basis of an agreement signed between MoARD and MFA.

## **2.1. Involvement of HAKI in bilateral international projects aiming at the improvement of food security in developing countries**

One of the objectives of the UNDP/FAO project for the development of HAKI implemented between 1975 and 1980 was to strengthen those capacities of the institute, which can be utilized in FAO projects aiming at the improvement of food security in developing countries. After the completion of the UNDP/FAO project, FAO took into account HAKI as a resource institute during the preparation and implementation of various aquaculture development projects in developing countries. HAKI experts worked as FAO consultants in 24 developing countries all over the world and HAKI provided training for 250 professionals from 40 developing countries between 1983 and 2003. Based on the experiences gained during the implementation of FAO projects, HAKI also provided assistance for aquaculture development in developing countries in the framework of projects supported by the Hungarian government or other international organisations. By the end of the eighties HAKI became an acknowledged centre in international development assistance programs. Between 1994 and 1999 HAKI has been assigned by the Netherlands Government to implement a 2 million USD aquaculture development programme in South Vietnam. The ultimate objective of this so-called West-East-South (WES) Project was to support rural households to improve and diversify production, nutrition and income sources through integration of aquaculture practices in their farming systems. This major aquaculture development project in Vietnam has been successfully completed and had an important contribution to aquaculture development in Vietnam. The main geographical area, where HAKI is actively being involved in aquaculture development programs is Asia, where fish plays an important role in human nutrition and rural livelihood. The institute established formal bilateral collaboration with one international organisation, two ministries and four institutions in the region according to the following:

- Research Institute for Aquaculture No.1., Ha Bac, Vietnam in 1990;
- Ministry of Agriculture and Forestry, Laos in 1997;
- Cantho University, Cantho City, Vietnam in 1999;
- Network of Aquaculture Centers in Asia-Pacific (NACA) in 2000;
- Research Institute for Aquaculture No.2., Ho Chi Minh City, Vietnam in 2000;
- University of Agriculture and Forestry, Ho Chi Minh City, Vietnam in 2001;
- Ministry of Marine Affairs and Fisheries, Indonesia in 2004.

In the frame of the bilateral agreements HAKI and partners are in regular contact, which contributes to mutual understanding and to the development of professional and human relationships. The long-term bilateral collaboration is an excellent basis for short-term projects, which can also contribute to the sustainability of the results of a specific project.

As fish is a staple food in most of the developing (LIFD) countries and the development of fish supply has a major impact on the improvement of food security, capacities of HAKI have been utilized for the implementation of such projects by various international organisations, among which most important was FAO (<http://www.haki.hu/english/services.htm>). By the end of the eighties FAO as executive agency of international development projects regularly requested HAKI's assistance for consultancies and trainings (<http://www.haki.hu/english/training/training.htm>). When international donor concepts have been changed and donor countries managed their development assistance projects by their own agencies and organisations HAKI's possibilities have been largely reduced since donor countries have been giving preference to their own experts and institutions. In spite of the changed scenario in donor assistance, HAKI remained relatively active in aquaculture development in developing countries utilizing own resources and maintaining and developing bilateral collaboration with partner institutions and organisations. The institute has also made a lot of efforts to get support from international organisations, which also resulted in several projects. The membership of Hungary in the European Union will offer new possibilities either to use EU resources for HAKI projects or to join efforts with other European institutions, which are active in aquaculture development in developing countries.

## **2.2. Bilateral collaboration with Vietnam**

Collaboration with Vietnam started in the sixties in the frame of the collaboration among socialist countries. This work was focused mainly on carp genetics and breeding. In the early eighties HAKI organized several FAO funded training courses for developing countries in fish hatchery and fish farm management, aquaculture engineering and fish-cum-duck farming. Professionals from almost all Asian countries attended these courses. The experts of the institute also worked regularly as FAO consultants in Bangladesh, Bhutan, China, India, Laos, Pakistan and Vietnam.

HAKI is actively involved in aquaculture development projects in Vietnam, where formal links have been established with the following four institutions:

(1) Research Institute for Aquaculture No.1 (RIA-1), Hanoi;

the main fields of collaboration:

- fish genetic and fish breeding, and supply of high quality seed for aquaculture;
- development of integrated farming system;
- utilization of by-products for fish feeding;
- aquatic resources assessment and management;
- training and education in aquaculture and related fields.

(2) Research Institute for Aquaculture No.2 (RIA-2), Ho Chi Minh City;

the main fields of collaboration:

- development of intensive pond aquaculture;
- technical development of hatcheries and fish farm facilities;
- artificial propagation and genetic improvement of carp species;
- improvement of freshwater fish health management.

(3) Cantho University, (CTU), Cantho City;  
the main fields of collaboration:

- improvement of the productivity, profitability and environmental compatibility of integrated farming systems;
- development of hatchery seed supply through better broodstock management and improved hatchery and nursing techniques;
- organisation of specific training courses, and joint participation in training programs on different levels including M.Sc. and Ph.D. courses.

(4) University of Agriculture and Forestry, Ho Chi Minh City;  
the main fields of collaboration:

- M.Sc. and Ph.D. training in freshwater aquaculture and environmental management with the involvement of Debrecen University in Hungary;
- development of sustainable pond aquaculture technologies through better management of fish ponds and integration of different farming practices.

As a result of the successfully maintained collaboration a project proposal was elaborated and submitted to the Hungarian Ministry of Foreign Affairs for funding from the Hungarian IDC budget. The project proposal was well received and approved for funding in 2004. The implementation of the project started in 2005 and it is expected to complete in 2007.

### **2.3. Bilateral collaboration with Laos**

The involvement of HAKI in aquaculture development projects in Laos dates back to the early eighties, when HAKI provided experts in fish breeding and aquaculture engineering for FAO projects. Collaboration with Laos was limited to occasional exchange of information during the political and economical changes and consequent difficulties in Eastern Europe. However, collaboration re-started after 1994, when HAKI became the implementing institution of the WES Aquaculture Development Project in the southern part of Vietnam. Although the target region of the WES project was the central part of the Mekong Delta in Vietnam, inter-regional collaboration was also included in the project, which was initiated by HAKI, and approved by the donor. A Memorandum of Understanding was signed between the Department of Livestock and Fisheries (DLF) of the Ministry of Agriculture and Forestry, Vientiane and HAKI on the 1<sup>st</sup> of December 1997.

The main achievements of the DLF-HAKI collaboration during the WES Project period are summarized in the following:

- two Lao experts attended in-service training in fish propagation and hatchery management in May-June 1998 at Cantho University, Vietnam;
- a jar-hatching unit at the hatchery of Nong Teng Fish Farm was installed in June 1998 according to the design of HAKI experts;
- HAKI experts with the involvement of a Vietnamese colleague from Cantho University assisted the propagation at Nong Teng Fish Farm in June-July 1998;
- four high quality common carp strains (two mirror and two scaly) from the gene bank of HAKI were supplied to Nong Teng Fish Farm in 1998;
- the Director of LARReC visited Hungary and HAKI in September 1999, where he attended the an International Aquaculture Economics Conference and studied HAKI structure and operation.



Although the WES Project was terminated in March 1999, the DLF and HAKI decided to continue collaboration using their own resources in those three main areas, which have been identified in the MoU as follows:

- genetic improvement of appropriate fish species, development of broodstock management, hatchery techniques and nursing technologies and assisting their practical application through extension;
- development of appropriate aquaculture technologies and assisting their practical application through extension;
- assisting research activities of the Living Aquatic Resources Research Center.

Since limited financial resources were available at both collaborating partners for the proposed activities, it was also decided to make further joint efforts in order to secure external financial assistance needed for the implementation of the planned joint research and development activities. As a result of these joint efforts a project proposal was elaborated and submitted to the Hungarian Ministry of Foreign Affairs for funding from the Hungarian IDC budget as it was mentioned before. The project proposal was well received and approved for funding in 2005. The implementation of the project started in early 2006 and it is expected to conclude in 2007.

### **3. Bilateral intergovernmental S&T cooperation managed by the National Office for Research and Technology of Hungary**

The execution of the bilateral intergovernmental agreements on co-operation in science and technology (S&T) is regulated by the Decree of the Government no 3061/91. According to this decree, the agreements are prepared and concluded by the Ministry of Foreign Affairs, whereas their implementation was the responsibility of the R&D Division of the Ministry of Education until 2004, and from that time the Agency for Research Fund Management and Research Exploitation (KPI) of the National Office for Research and Technology (NKTH).

As part of an institutional reform a new governmental body, the NKTH - as a legal successor of R&D Division of the Ministry of Education - has been set up. It is operational since the 1st of January 2004.

The Office has the following responsibilities and missions:

- elaborating the government strategy in the field of innovation,
- forming the means and tools for the R&D and innovation policy at government level,
- it works out documents concerning the national science and technology policy, prepares reports and reviews for promoting the acquisition and dissemination of new knowledge and information serving the government's science and technology strategy in co-operation with social partners, NGOs, industrial and professional associations,
- represents the government in the international field, in intergovernmental S&T organisations and programmes, organises and co-ordinates the Hungarian participation in such programmes. In this capacity, it is also in charge of the multilateral S&T co-operation and participates in the EU accession process,
- co-ordinates the activity of the Research and Technology Innovation Fund, involving the former National Technology Development Fund and the National R&D Programmes, and to supervise the Agency for Research Fund Management and Research Exploitation (KPI) that was set up in August 2003. This Agency is responsible for managing different R&D support programmes financed from the Research and Technology Innovation Fund.

The Agency for Research Fund Management and Research Exploitation (KPI) became operational on July 15, 2003. The reason for establishing KPI was a restructuring process of the institutional map of the Hungarian innovation system. The main objective of its setting up was to create an effective and forceful organisation for promoting Hungarian innovation system. It took over the R&D-funding responsibilities from OMAI (The Fund Management Directorate of the Ministry of Education), and it also includes the assessment and evaluation activities of the R&D Division of the Ministry of Education. Besides, a new task was assigned to the Agency, the exploitation of the results of its funded R&D projects. KPI co-operates closely with a network of public and private players on national and international levels in order to jointly develop and disseminate the new knowledge.

KPI is a governmental agency with the mission of fostering the competitiveness of Hungarian industry by the implementation and realization of the government's policy in the field of innovation strategy and programmes. Within this framework it helps its clients to support their need oriented R&D activities, customized business plans and promotes the diffusion of information and knowledge. The agency has the responsibility for the effective and efficient use of public money at its disposal (the Research and Technology Innovation Fund) and will act as a professional organisation to fulfil the satisfaction of its multiple clients.

The National Office for Research and Technology (NKTH) functions on the basis of the above governmental decree on one hand, on the other hand on the basis of the bilateral agreements on co-operation in S&T. The NKTH together with the foreign governmental body in charge of the co-operation sets up the Joint Committee on Co-operation in Science & Technology. These committees meet annually, or every two years, or every three years and beside an exchange of views on S&T policies, they approve the programme of co-operation for the next period of time. As a rule, the programmes of co-operation set out the general framework of co-operation, specifically the kind of support provided for joint research & development projects and organisation of scientific and technological symposia, conferences and workshops.

Governmental support is provided on a nearly equivalent basis in the form of financial grants by both of the co-operating governments. Scientists may get grants by competing in a bidding system. Institutes and companies, governmental or private, dealing with basic sciences and/or applied research may apply for grants to support the exchange of scientists, as needed to achieve predetermined objectives.

Procedures, as well as forms to be filled in and timing regarding the call for proposals, are agreed upon by the governmental bodies, which manage the co-operation. The agreed project proposal must be submitted simultaneously to both of the governmental bodies. The governmental bodies review, assess and rank the project proposals according to their internal procedures, but basically using the following criteria:

- the scientific merits of the proposals, as measured by a peer review,
- the national priorities with regard to scientific & technological co-operation.

The decision regarding the projects to be jointly funded is taken by the Joint Committee. Hungary has currently 33 intergovernmental S&T agreements with other countries of the five continents, among them 10 are developing ones ([http://www.kpi.gov.hu/index.php?WG\\_NODE=WebPageReader&WG\\_OID=PAGf1908a2d823b794b0&WG\\_FUSK4=4-0](http://www.kpi.gov.hu/index.php?WG_NODE=WebPageReader&WG_OID=PAGf1908a2d823b794b0&WG_FUSK4=4-0)). The number of bilateral projects is usually 500-600 in a year, many of them have agriculture-related research and capacity development activities, but few of them deal with specific ARD activities. The primary objective of the projects is to promote joint research, mobility of scientists, and organising seminars and workshops in the field of interests.

#### **4. Bilateral international cooperation of the agricultural research institutions of the Hungarian Academy of Sciences**

The international relation activities of the Hungarian Academy of Sciences (HAS) are supported by three pillars. The first one is the Department of European Scientific Relations which focuses on the European multilateral scientific affairs both in terms of science policy and also different practical issues, with special emphasis on the R&D Framework Programmes of the European Union. This Department also provides the home base for the HunASCO office located in Brussels, which serves as the representation office of HAS to the European Union. The second pillar is the Office for International Co-operation which deals with the bilateral cooperation programmes of HAS as well as maintains the membership of HAS in different international scientific associations. The third pillar is the Academic Council of Hungarians Abroad which was set up in order to better involve Hungarian scientists living in Western Europe and overseas into Hungarian-Hungarian scientific cooperation.

The Office for International Co-operation is responsible for managing various kinds of international activities of the Hungarian Academy of Sciences. International institutional cooperation came into existence following the reorganization of HAS in 1949. Earlier, both in the 19<sup>th</sup> century, after its founding in 1825 and in the first half of the 20<sup>th</sup> century, HAS took upon itself the cultivation and development of Hungarian science, first in the fields of Hungarian studies such as Hungarian language, literature and history, then including natural sciences as well. In the decades of the cold war following the Second World War Hungary and its neighbouring countries in Eastern Europe were practically excluded from the mainstream of world science. In the early sixties the first bilateral agreements were concluded with some of the “socialist” countries both in Eastern Europe and in other parts of the world.

The boom of bilateral contacts took place in the seventies when the favourable affects of détente made themselves felt also in international scientific relationships. The eighties maintained this quantitative level up to the year 1989 - the time of great political and economic changes in Eastern Europe and in the Soviet Union. Especially in the first part of the nineties international cooperation found new, earlier forbidden ways and means. Consequently, the role of the Academies in our region, including that of the HAS, in the organizing and financing of foreign contacts has changed enormously: it is now of paramount importance to concentrate on fields and forms of cooperation where Academies have the professional expertise unparalleled by other scientific institutions. Currently, the Hungarian Academy of Sciences has bilateral agreement with 51 countries, among them 19 are developing ones (<http://www.mta.hu/index.php?id=713>).

The Hungarian Academy of Sciences has a network of 38 research institutions and centers in almost all disciplines (<http://www.mta.hu>). Five agricultural research institutes are also the members of the network focusing mainly on cereal, plant protection, soil and agro-chemistry, rural development and veterinary research. All institutions have extensive international scientific cooperation and bilateral joint projects funded on a nearly equivalent basis by both sides, however, no examples for ARD.

**INNOVATIVE CAPACITY DEVELOPMENT APPROACHES FOR THE ERA-ARD  
PROJECT.**

**Contribution of Italy  
Istituto Agronomico per l'Oltremare**

**Report**

**Elena Laura Ferretti**

**August 2006**

# **INNOVATIVE CAPACITY DEVELOPMENT APPROACHES FOR THE ERA-ARD PROJECT.**

## **Contribution of Italy Istituto Agronomico per l'Oltremare**

### **Introduction**

Two initiatives are presented hereby related to best practices/innovative approaches to Capacity Development (CD) for agricultural research in Italy, as requested within the framework of Task 2.2 of the ERA-ARD Project.

The first one is the support of the Istituto Agronomico per l'Oltremare (IAO) to the Government of Algeria for strengthening the agricultural research, through funds of the Italian Cooperation.

The second one is the support of FAO to the Government of Eritrea for strengthening the agricultural research, funded by the Italian Cooperation.

The description is by no means exhaustive of all CD initiatives in Italy in the sector of agricultural research. However, it provides an insight into activities financed and implemented by different actors.

The initiatives are all focused on agricultural research. They were not necessarily designed as full-fledged CD projects, but the development of capacities is a major component.

Although the information available is more focused on results obtained, an effort has been made to evaluate process activities (this is particularly evident in the IAO Case Study), which the Consultant considers even more important than results in the framework of CD. However, this is an area where it is not easy to evaluate and quantify impact, for we deal with long-term, dynamic processes of change. Consequently, in addition to the description of the case studies, and as a further IAO's contribution to the ERA ARD Project, a framework for evaluating CD processes of change is herewith suggested and tentatively applied to the two case studies, only with a yes/no indication.

The proposed framework is only meant to be an initial contribution that all the ERA-ARD Consortium Members might want to elaborate further, by, for instance, working out target indicators in each area. Although it is difficult to find good examples of indicators that effectively measure or assess capacity development changes, the Consultant believes that it would be an interesting task.

The following framework and categories could be used for the purposes of agricultural research for development, and then CD indicators could be developed to evaluate changes at the Individual, Organizational and Systemic levels for each category:

1. The capacity to carry on scientific research
2. The capacity to produce knowledge and innovations systems
3. The capacity to analyze information and mobilize knowledge
4. The capacity to network with internal and external institutions and organizations.

<b>Strategic Areas of Support</b>	<b>Target for Capacity Development <sup>1</sup></b>		
	<b>Individual</b>	<b>Organizational</b>	<b>Systemic</b>
The capacity to carry on scientific research			
The capacity to produce knowledge and innovations systems			
The capacity to analyze information and mobilize knowledge			
The capacity to network with internal and external institutions and organizations.			

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<sup>1</sup> Targets to be developed in the future by the ERA ARD team if interested.

## Case study N. 1

### **The Istituto Agronomico per l'Oltremare (IAO) support for agricultural research to the Government of Algeria**

#### **1. Background**

Agriculture remains the source of income for most developing countries' rural economies. IAO recognizes the need for integrated and sustainable approaches to protect the natural resources base, which food security and livelihood depend on. Sustainable land management options need to be found to tackle land degradation that affects the ecological integrity and productivity of millions of hectares of land in the world.

In this context, IAO considers as key elements the following:

- a) Agricultural research for development as a means to find ways of breaking the vicious circle between poverty and natural resources depletion;
- b) Improving the process of taking informed decisions in order to face emergencies and the long-term challenges of development;
- c) Capacity Development at the individual, organizational and systemic levels to reverse these negative trends, if and when accompanied by a strong political will.

IAO sees itself as a facilitator for the development of endogenous capacities. It focuses much of its technical assistance in supporting its partner countries to produce and gain access to agricultural and environmental information, and thus supporting the decision making process and good governance. This is considered one of the most important aspects of CD linked to agricultural research.

In Algeria, since the late 1980s, support has been provided for the design and implementation of an agricultural research and development programme, never losing sight of it even during the years of terrorism and insecurity in the country.

#### **2. Programme context**

Algeria is forced to annually import huge amounts of wheat to fill the gap between internal production and consumption. The trade balance and national food security is consequently dependent on international markets.

After some contacts first in 1989, IAO has started its support to the Government of Algeria in 1992. With financial support from the Italian Cooperation of the Ministry for Foreign Affairs, a project was designed, the first phase of which was called '*Applied research for durum wheat improvement*'. However, IAO and its partners were practically forced to interrupt activities almost immediately as a result of the situation of insecurity in the country.

In 1997, a second phase of the project could be started and was called '*Improvement and strengthening of the national durum wheat varieties adaptation system*'. Between the two phases, IAO provided technical assistance at distance and brought to Italy Algerian professionals to be trained.

In 2003, a new project called '*Integrated System for the Management of Rural and Agricultural Information*' was designed in a fully participatory way. It is still on-going.

### **3. Objectives of the program and of the CD approach**

The general objective of improving varieties and technologies of the national durum wheat production in a sustainable way was carried out by developing and strengthening the capacities of the Institut Technique des Grandes Cultures (ITGC), which belongs to the Ministry of Agriculture and Rural Development, to carry on natural resources inventories and field research. Applied research has been tailored to develop local knowledge on natural resources, and improve plant genetic material and agronomic practices according to prevailing environmental conditions and local requirements. The project was geographically located in the Tiaret region. Based on the positive results, the second phase of the project was extended at national level, targeting the whole northern part of the country.

### **4. CD activities**

Capacity Development has included activities such as:

At the individual level:

- i) Training on-the-job in Algeria and
- ii) Training courses in Italy on land classification and evaluation using GIS, and on new scientific methodologies for the analysis of genetic material adaptation to the territory. Over the years, these activities have attracted the interest of FAO which resulted in a new IAO-FAO training course on 'Exploiting plant adaptation and biodiversity for higher and more stable yields'.

Training has proved to be the best way of keeping engaged and involved even during the years of terrorism and insecurity in the country, when it was not possible to implement any planned activities. The strategy to develop local capacities through training in Italy and through the provision of technical assistance at distance has been highly appreciated by the local partners.

Between 1993 and 1998, four courses, each one designed to train 4 Algerian professionals, were organized in different subjects, and for a minimum of 6 months. Between 1998 and 2001, 9 technicians were trained on-the-job while responsible for conducting experimental agricultural research on durum wheat and then for assessing results in the next two agricultural campaigns.

Moreover, 9 Algerian professionals participated in the different editions of the IAO Professional Master Course on 'Geomatics and Natural Resources'.

Another 6 Algerian professionals participated in the second edition of the Food Security Training Course, organized in 2003 for the Maghreb countries. This course aimed at providing an understanding of the systemic characteristics and causes of food insecurity, the impact of macro and sector policies and the strategies, policy measures and interventions which can bring about improvements.

Furthermore, in 2006, 2 senior plant breeders participated in the third edition of the IAO-FAO training course on 'Exploiting plant adaptation and biodiversity for higher and more stable yields'.



IAO and the Italian Ministry for Foreign Affairs support training also with fellowships. Over the years, most Algerians have benefited from scholarships and fellowships while participating in the IAO training activities.

At the organizational level:

- i) Through provision of equipment (laboratory and field research instruments, hardware and software for Geographical Information System (GIS) application) to strengthen ITGC, the main receptor of the findings of the applied research,
- ii) The establishment of the Natural Resource Assessment Unit and of the Research Planning and Data Analysis Unit,
- iii) The strengthening of national capacities for establishing an agro-ecological classification system of the territory, and for fully implementing the GIS.

At the systemic level:

Since the final goal was the improvement of the scientific capabilities for proper advising and decision making, and in order to reduce the dependence of the country on international markets, an innovative approach has been taken to develop capacities at all steps of the decisional cycle from increased information on natural resources, to increased information on durum wheat yield responses, to the development and adoption of methodologies to combine and exploit the obtained information, and to the formulation of strategies for action in the short, medium and long-term. It has involved all the stakeholders, from the Ministry of Agriculture to Regional authorities, research institutions, producers and seeds' multipliers.

The strong and collaborative relationships established allowed an effective participation, and the development of capacities and ownership of the Algerian institutions. These sound and appreciated results have led to the participatory identification of a new project to sustain the National Development Plan for Agriculture and the Rural Sector, aimed at establishing an integrated and geographically based Rural and Agricultural Information System to improve the production and exchange of information in the sectors concerned.

## **5. Conclusions and lessons learned**

Since the early 90s, IAO has been supporting the Government of Algeria with an approach that has combined various activities to develop local capacities and accompany national research institutions, remaining committed even during the years of terrorism and general upheaval.

This approach has led to:

- i) The development of capacities of existing local research institutions, in particular the Field Crop Research Institute, which was able to gain in new scientific methodologies, and increase confidence in its capabilities to provide technical and scientific advice to other research institutions and to the Ministry of Agriculture,
- ii) The establishment of a sound relationship based on mutual trust and understanding,
- iii) The development of capacities of local research institutions permanent staff, focusing as much as possible on-the-job training in an effort to limit brain drain from the country,
- iv) The development of capacities and provision of instruments oriented to reach concrete and scientifically sound results,

- v) A strong support for the development of a networking of the targeted institutions with existing national and international organizations.

In conclusion, at the individual level IAO activities for CD have included the development of skills through training and learning by doing, but also contributed to motivate and keep high the morale of professionals who never felt abandoned even when the situation in their country was causing isolation and a stop to most developing actions. At the organizational level, CD has focused in developing tools, guidelines and information management systems for the ability of the supported institutes to adapt to changes. At the systemic level, there has been less support until 2003 but the new on-going project, having expanded its support at national level, should be a further contribution to the creation of an enabling environment that could reduce the country dependence on food imports.

The table below shows the application of the proposed framework for assessing CD processes of change.

Strategic Areas of Support	Target for Capacity Development		
	Individual	Organizational	Systemic
The capacity to carry on scientific research	X	X	
The capacity to produce knowledge and innovations systems	X	X	
The capacity to analyze information and mobilize knowledge	X	X	X
The capacity to network with internal and external institution and organization.	X	X	X

## 6. References

Contact Persons at IAO:

Tiberio Chiari ([chiari@iao.florence.it](mailto:chiari@iao.florence.it))  
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[www.iao.florence.it/coop/dgcsprojects/projectpage.php?key=10](http://www.iao.florence.it/coop/dgcsprojects/projectpage.php?key=10)

Documents:

Special Issue of IAO Technical Review (vol. 96, number 3-4, 2002)

## Case study N. 2

### FAO/Government of Italy - '*Strengthening the Agricultural Research in Eritrea*'.

#### 1. Context

Since attaining independence from Ethiopia, the Government of Eritrea focused on developing its agricultural research and extension service capacity both, through resources and infrastructure development. The country enjoyed strong economic growth and comparatively low inflation in the first few years of independence. However, in later years border conflicts with Ethiopia and trade embargoes changed this trend significantly. The agricultural sector (which employs the majority of the population) remained weak, despite significant investment in horticultural projects and large-scale cultivation in the western lowlands.

In 1996, the Government of Italy financed the provision of technical assistance through FAO for the rehabilitation of the Research and Extension Division of the Ministry of Agriculture (MoA).

Based on the positive experience of the project, in 2001 a second phase was designed with emphasis on adaptive research, on-station and on-farm participatory technology development and the dissemination of tools and management practices adapted to farmer's conditions.

In order to complete the reception of a major outstanding order for laboratory equipment and continue the support to project-funded MSc students at the University of Asmara, the project has been prolonged and will end in 2007 instead of June 2006.

#### 2. Objectives of the program and of the CD approach

The government's development goal for the agricultural sector is to improve food security and livelihoods, expanding agricultural export earnings while ensuring the restoration and protection of the natural resource base. This is to be achieved by improving agricultural productivity, through the provision of appropriate technologies and services to farmers, and by building the capacity and performance of service-providing agricultural institutions.

The development of capacities for agricultural research development and the communication of findings to extension workers and farmers has been a major component of the Program. The Capacity Development objectives have in fact focused in assisting MoA, and the National and Agricultural Research Institute (NARI) in particular, in developing institutional capacities to improve performance in managing and carrying-out effective agricultural research activities through a combination of on-the-job training, extensive staff training both within and outside the country, provision of equipment and the development of on-farm and on-site participatory technologies.

#### 3. CD activities

Capacity Development has included the following activities:

At the individual level:

- i) Training on-the-job of small-scale, resource poor and commercial farmers;
- ii) Training courses for extension workers and researchers in different subjects;
- iii) The training of 10 MSc students at the University of Asmara.

Trained staff will then be integrated in the NARI. Training was originally planned to take place abroad but a government decision stopped the activity and overseas training was substituted by MSc training at the University of Asmara. The curricula of these courses were developed through a nation-wide needs assessment exercise supported by the Wageningen University (The Netherlands) and the Free State University (South Africa) in a way to fit the situation of Eritrean agriculture.

At the organizational level:

- i) Through the provision of equipment, supplies and operating costs, the Project has supported NARI in establishing the physical infrastructure that sustain a full range of agricultural research activities, and has initiated and expanded adaptive research activities relevant for the agro-ecological conditions of the country. NARI now has appropriate facilities (including three laboratories for soil science, animal feed and tissue culture) and equipment for conducting research and continuing education activities;
- ii) A Farmer Advisory Services was constituted within MoA to improve research/extension farmer linkage and coordination at national and sub-national levels;
- iii) NARI's Medium-Term Agricultural Research Strategy and Operational Plan were prepared as a means to improve agricultural research planning and management. The document, approved and adopted in 2005, is considered outstanding in analysis although still requiring an appropriate M&E system tailored to both, results and impact;
- iv) NARI is being transformed into a semi-autonomous body with greater authority over its budget and resource basis;
- v) Socio-economic research and participatory diagnosis capacity was strengthened;
- vi) Improved varieties and agronomic and soil management practices for horticultural crops were tested, selected and made available to producers.

At the systemic level:

NARI has become a respected institution in agriculture in Eritrea, having forged links not only with other government departments (i.e. the Agricultural Promotion & Development Department – the MoA's entity in charge of advisory and extension services), but also with the University of Asmara, international NGOs and research organizations active in the country and region.

#### **4. Conclusions**

Although there still remains activities to be completed and progress to be achieved, the combination of planned support activities have certainly contributed to the development of the country's capacity to conduct agricultural research and to increase the performance of its service-providing agricultural institutions. In particular:

- i) NARI has established the physical infrastructure to support a full range of agricultural research programs and has expanded adaptive research activities relevant for the agro-ecological conditions of the country;
- ii) It has improved its capacity to plan and manage resources and implement effective participatory technologies and disseminate results;
- iii) NARI's status is being transformed into a semi-autonomous body with greater authority over its budget and resource basis;

- iv) As soon as the 10 MSc students complete their studies at the University of Asmara, they will be integrated into the institution. Training seems to have been an appreciated activity by both, the students and NARI.

The Program has provided a foundation for future effective agricultural research in Eritrea as NARI has become a respected institution, having forged links with other government departments, the University of Asmara, international NGOs and research organizations in the country and region. As the most prominent institution in the field of applied agricultural research, NARI plays a pivotal role in linking the national and international scientific community, with the extension system and the farming world.

The table below shows the application of the proposed framework for assessing CD processes of change.

Strategic Areas of Support	Target for Capacity Development		
	Individual	Organizational	Systemic
The capacity to carry on scientific research	X	X	
The capacity to produce knowledge and innovations systems	X	X	
The capacity to analyze information and mobilize knowledge	X	X	
The capacity to network with internal and external institution and organization.		X	

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[http://www.fao.org/tc/tcdm/italy/op\\_eri006\\_en.asp?lang=en](http://www.fao.org/tc/tcdm/italy/op_eri006_en.asp?lang=en)

**TASK 2.2 IDENTIFICATION OF INNOVATIVE APPROACHES AND INSTITUTIONAL  
ARRANGEMENTS FOR IMPLEMENTING JOINT ARD SUB-PROGRAMMES**

**IDENTIFICATION AND DESCRIPTION OF INNOVATIVE APPROACHES,  
PRACTICES AND INSTITUTIONAL ARRANGEMENTS  
FOR CAPACITY DEVELOPMENT**

**LITHUANIA**

**OCTOBER 30**

**Since there is no ARD program in Lithuania**, research institutions and individual researchers are engaged in the opportunity driven research projects and activities with the developing countries. Most of them are based on bilateral agreements with the countries. The programmes and schemes with international dimension face challenges of inadequate funding and weak management mechanisms that need to be developed in the long run. Due to disperse coordination of ARD activities among different ministries and limited financing, capacity development approach has not gained its recognition and importance yet. There is focus on administrative capacity building in a form of technical support (training and knowledge dissemination) in the development assistance projects (determined in the Development Assistance and Aid Strategy of Lithuania); however only small part of them is for AR. Some elements of the CD have been introduced in the research programmes and schemes fostering linkage between knowledge and its application. It is mainly individual capacity development of the researchers, who relying on the contacts they used to have and recently renewed, initiate projects with developing countries. The projects encouraged by and through European initiatives provide greater opportunities for the Lithuanian researchers and their partners to cooperate in the field of agricultural research, and share their knowledge and expertise they have accumulated. However, the biggest attention to capacity development is given in Single Programming Document (SPD) to improve national human resources in scientific research.

### **Bilateral Development Aid Projects**

The Ministry of Foreign Affairs is the main agent in financing such bilateral projects to foster cooperation with developing countries. The Ministry is in charge of carrying out Development Assistance and Aid Strategy of Lithuania (further – the Strategy) on the national level. The Strategy determines the geofocus of the potential projects (Ukraine, Moldova, Belarus; Southern Caucasus; and the poorest African countries), and fields of the aid. There is *a focus on administrative capacity building*, a form of technical support that provides opportunities to fund training and knowledge dissemination activities for DC. However, only a small part of the projects are implemented in the field of AR. In 2006 there are identified two ARD projects carried out by State Food and Veterinary Service: “Strengthening of Control System of Agricultural Products in Ukraine” and “Strengthening of Food Safety and Veterinary Control System in Moldova”. In addition, the same institution is conducting training to the employees of food safety and veterinary institutions of Armenia, Romania, Russia, Georgia, and Ukraine to get them acquainted with the requirements of the EU in the relevant field. What is more, Lithuania has been chosen as the training platform to provide information according to its competence to the above mentioned specialists of the developing countries. To fulfill commitment to MDG’s, Lithuania is planning to increase funding for the bilateral development projects from €500 000 (2006) up to €13 million (2010).

### **The State Program on Cooperation with Ukraine.**

There are two key agents with shared responsibility to provide funding to the ARD activities under this program: 1) The Ministry of Education and Science; 2) The Lithuanian State Science and Studies Foundation. Both of the institutions promote international cooperation with Ukraine that is based on bilateral agreements.

The Ministry of Education and Science coordinates jointly implemented research and experimental development projects under the signed bilateral agreements between the governments and ministries of Science and Education of Ukraine and Lithuania in the settled fields of research. One of the priorities is biotechnologies and agriculture, and another – ecology/organic farming and rational usage of resources. Participants: science and study institutions, and research institutions those are ready and willing to implement common projects and have found the partners abroad in advance.

There is some valuable experience captured in the administration of the joint projects.

First, the open call to initiate common Lithuanian – Ukrainian projects is announced simultaneously in both countries once in two years. The application form is to be submitted at the same time in Lithuania and Ukraine by the partners. Lithuanian researchers submit their proposal to the Ministry of Education and Science, and Ukrainian researchers –to their ministry to implement the same project together. Only the projects that are submitted in both countries are being considered, and partners inform each other about applying to the call.

Second, the experts of two countries evaluate separately the proposals according to the established criteria and present their conclusion (up to middle of October) to the international action group to take the final decision. The main criteria in evaluation of submitted proposals are: concerted preparation of the proposal (official letters, agreements of partners, intention protocol), scientific importance and value of the project, perspectives of cooperation, recommendations of stakeholders, which guarantees at least partial financing of the project, shared intellectual property rights in further utilization of scientific output (letters of indemnity, contracts, agreements and etc.), and publications of project executives and references to their works in the scientific journals abroad. Decision to finance the selected projects is being taken in two stages: the first amount of financial support is given for a year, and the second payment is given only after approval of interim report on scientific progress and management report.

The Lithuanian Ministry of Education and Science supports traveling of project executives into Ukraine, participation of researchers in conferences, symposiums and other meetings and/or their organization in Lithuania, and expenses of publications. In this way, CD becomes indirectly integrated into the cooperation with the research institutions of the developing countries but to a very small extent.

Third, the researchers have the option to apply to the State Science and Studies Foundation for the additional funding to work with the developing countries. To avoid duplication and overlaps, the Foundation provides funding mainly for the research activities that are not supported by other international organizations or in the case when the national funding is included into the contract (it can be renewed each year). Again, elements of individual capacity development of the researchers are present; however, the research objectives dominate.

### **Academic Mobility Projects**

These projects aim at fostering CD of the scientific potential of the researchers by building and strengthening their individual capacity. Lithuania has signed international agreements in the field of higher education with more than 30 countries (including China, Belarus, Mexico, Russia Federation) that foster exchange programmes of B.A. and M.A. students, academics and researchers, and participants of summer schools. These agreements provide good opportunities to invite international partners to study, to have internship and encourage scientific cooperation between researchers of Lithuania and other countries. Financing of these CD activities is defined in the agreements of the countries; and each year specified by the country that invites. National stipendium and allowances in compliance with the resolution of the Lithuanian Government are given to Lithuanian citizens going abroad or international partners coming to Lithuania. All the related information is being announced on the website of Ministry of Education and Science once a year.



## **European Initiatives and Framework Programmes**

EUREKA, European-wide initiative, aims at fostering European competitiveness through cooperation among companies and research institutions in the field of advanced technologies. It has a bottom up approach, and a decentralized support scheme: once a project has been EUREKA-labeled, national authorities according to national rules and programmes may fund each participant. Relying on the statistic provided by Agency for International Science and Technology Development, Lithuanian participation in EUREKA projects has been successful:

<b>29 running projects</b>	<b>24 finished projects</b>
<b>total budget of 7.2 M€</b>	<b>total budget of 5.0 M€</b>
<b>72 organisations from LT</b>	<b>53 organisations from LT</b>
<ul style="list-style-type: none"><li>▪ <b>SMEs 29</b></li><li>▪ <b>Research 6</b></li><li>▪ <b>Universities 30</b></li></ul>	<ul style="list-style-type: none"><li>▪ <b>SMEs 16</b></li><li>▪ <b>Research 11</b></li><li>▪ <b>Universities 20</b></li></ul>

Source: <http://www.eureka.be/contacts/member.do?memId=LT>

Major funding bodies for EUREKA in Lithuania are the Lithuanian State Science and Studies Foundation and the Improvement of Industry Competitiveness Programme within the Ministry of Economy.

- The State Science and Studies Foundation provides funding for basic, academic and applied research through projects performed by research institutes and universities. The partial support in the form of grant (up to 100%) provided by the Foundation, as its priority, has been confirmed for the EUREKA projects. The Foundation provides support only for research and higher education institutions.
- The Business Development Council under the Innovation and technology division in the Ministry of Economy takes the decision to provide the partial financial support (subsidy) for enterprises (up to 62, 5%) within the Improvement of Industry Competitiveness Programme. This programme deals with innovation projects and supports applied research and industrial development in any technological area.

One of such international EUREKA projects was “Functional Food with Natural Licopen”. Participants: joint-stock company “Saulės dovanos”, Lithuanian Institute of Horticulture, Republican Nutrition Center of Ministry of Health Protection, joint-stock company “Actas”, Phytochemical Society of Medical Investigations “Health Laboratory” (Latvia).

## **6 Framework Programme**

Marie – Curie Mobility Schemes are open for all fields of research to finance international mobility of the researchers in all stages of their scientific career according to their experience and competence. The researchers can also apply to different mobility schemes (Research Training Networks, Intra-European Fellowships, Series of Events, Transfer of Knowledge, and others) giving support to early stage and experienced researchers and study and science and research institutions. They aim at knowledge accumulation and transfer, expansion of opportunities for researchers’ career and increase of competence in Europe following the main principles – mobility, research career and learning.

"A Mobility Strategy for the European Research Area". The Lithuanian Researchers Mobility Center. Since 2005 Lithuanian Centre for Quality Assessment in Higher Education, which coordinates the regular self-analysis process of research, organizes expert assessment (peer review), accumulates and publishes information about the quality of that activity and offers suggestions about its improvement, has started implementing 6 FP project *"The Researchers Mobility Center"*. The project aims at strengthening ERA by joint financing of the EC and Lithuanian national budget. The main objective of the project is to facilitate mobility of the researchers by creating more favorable environment for career development, job vacancies and providing the necessary structured information as proposed in the Communication "A Mobility Strategy for the European Research Area". The project aims to reach these objectives: 1) to create a national mobility center as the part of the Europe (ERA - MORE); 2) to develop Lithuanian research mobility portal as an integrated part of European mobility center network; and 3) to organize national network of researchers.

### **State Science and Study Foundation Programmes**

The Foundation programmes and projects provide funding for research activities carried out by scientists, groups of scientists, and study and science institutions. Most of the research programmes include CD as one of the element without putting emphasis on it; and only one is explicitly designed for capacity development of Ph. D. students. All of the programmes are aimed at increasing and strengthening scientific potential of Lithuanian researchers either working in partnership with developing countries or not. The following table summarizes the existing programmes and schemes of the Foundation pointing out different types of supported research activities, potential applicants, and requirements of the Foundation to allocate financial resources.

Table No.1 Research Programmes and Projects of the State Science and Study Foundation:

<b>Supported Programmes &amp; Projects</b>	<b>Potential Applicants</b>	<b>Requirements</b>
Research programmes initiated by the Foundation*	A group of scientists Science and study institutions Others	The Foundation can initiate research programmes: - to solve the complex scientific problem in a series of activities carried out by at least two study and science institutions; - to implement joint research projects of study and science institutions - to support activities carried out by groups
Projects carried out by groups of scientists or a scientist	A scientist A group of scientist	A group can consist of maximum 6 members, and three of them have to have the scientific degree or pedagogical work experience. A scientist must be registered in the database of the Foundation
Research projects ordered by economic entities and carried out by science and study institutions	Science and study institutions	An economic entity has to formulate what research output it expects; financial support of the Foundation can not exceed the amount given by entity. The foundation does not give any support to the projects already planned in the annual activities of institutions.
Research according to the international (bilateral) agreements	Science and study institutions	National financing should be foreseen in the agreements (support is given for a year, and then after interim reports revised), and the budget from other sources indicated
Scientific conferences,	Science and study	Priority is given to events where international science and national science and study institutions

symposiums and other related events	institutions Others	act as organizers. They should present the collection of conference presentations and indicate support of the Foundation.
Scientific works	A scientist A group of scientists	Only the scientist, who is registered in the database of the Foundation, can get the support. He/she is allowed to submit one application as independent applicant and act as the member of one group of the scientists (exception research projects under economic entities).
Research carried out by Ph. D. students	Ph. D. students in the 3 <sup>rd</sup> and 4 <sup>th</sup> years of their studies	The PH. D. students receive grants that can be increased by the decision of the Foundation Governing Board when the student has international publications in the editions listed by Institute of Scientific Information.

## V. SINGLE PROGRAMMING DOCUMENT OF LITHUANIA (2004 – 2006)

The **Single Programming Document (SPD)** and its measures aim at financing national development of human resources putting different ministries in charge of administration according to their field of competence. For the capacity development in agricultural research, there are mainly two relevant priorities: 1) Development of Human Resources; 2) Development of Productive Sector, and partially 3) Development of Social and Economic Infrastructure, particularly "Development of Infrastructure".

**Under the 2nd priority „Development of Human Resources“** the Ministry of Education and Science is in charge of the measure ***“Improvement of Human Resource Quality in Scientific Research and Innovations”***. The principal aim of the measure “Improvement of HR Quality” is to contribute to a quantitative and qualitative increase in human resources engaged into research and technological development.

The objectives linked with CD are:

- Upgrade qualifications of postgraduate and doctoral students, postdoctoral scientists and other researchers and maintain their competence (young researchers and scientists, and retraining);
- Carry out programmed scientific research and experimental development (R&D) in priority areas, including biotechnologies for agriculture and safe and environmentally friendly food technologies;
- Facilitate improvement in human resource quality: revised and restructured, including integrated and interdisciplinary curricula at universities and new courses and modules of horizontal competence in research institutions at postgraduate and doctoral studies;
- Develop the R&D evaluation system: new evaluation methods, foreign evaluations in postgraduate, doctoral studies countrywide, development of quality assurance authority procedures and short courses;
- Develop and improve competitive funding for R&D (not only state aid schemes);
- Promote dialogue between science and society (various forms and initiatives of social dialogue between research institutions and economic entities: focus on the development of the careers of young researchers, preparation and implementation of grant schemes for training of young researchers, interactions between scientists and society at large; reduction of segregation by gender in the academic labour market (e.g. representation of female students in postgraduate and doctoral/postdoctoral S&T programmes);

The measure complements activities under other measures as a necessary pre-condition to their successful implementation.

Researchers take advantage of the supported activities:

- Postgraduate, doctoral, postdoctoral studies in priority areas and their mobility;
- Training of scientists and other researchers matching needs of market, upgrading of their qualification and their retraining;
- Training of R&D experts;
- Assurance of quality of R&D in science and study system;
- Improvement, creation and monitoring of research and study institutions information system and its data basis;
- Development of knowledge and skills on science, technologies, innovation;
- Technical assistance (including case studies and similar) in developing project proposals.

Priority is given to projects:

- when they stimulate co-operation between scientific and study institutions and associations/ business companies;
- when the assistance from both the European Social Fund and the European Regional Development Fund is involved to implement the R&D objectives;
- projects linked to EU international research and development projects (if they fall within the area of European Social Fund support);
- when they stimulate innovations in learning, studies and services;
- when they ensure partnership among science and study institutions.

Another measure “*Development of Infrastructure of Labour Market, Education, Vocational Training, Research and Study Institutions and Social Services*” (supplementing the ESF measures) ensures adequate facilities to deliver education and training and complements the previously mentioned. The objectives are: to develop and upgrade infrastructure in the education, scientific research and development, vocational guidance and counselling and vocational education and training sectors; and to improve the quality of these services as well as and to reduce the gap between the level of these services and the level of respective services in leading EU countries.

Specific objectives:

- to improve the quality of education through the modernization of the learning environment and improvements in educational infrastructure;
- to create the right pre-conditions for a dynamic R&D base in Lithuania;
- to capitalise on the opportunities offered by IT to improve access to education and training provision for those living in rural areas, to improve the quality of lifelong learning provision and labour market services;
- to develop the capacity of labour exchanges to provide quality employment services;
- to improve the quality of and access to occupational rehabilitation infrastructure for the disabled;
- to increase the diversity and quality of social services in connection with the labour market.

These objectives will be reached by creating new institutions in the regions, where the universal access to educational services is not ensured, renovating education, vocational training, research

and study institutions and social services institutions (including adaptation of environment to the handicapped persons) and modernizing their material-technical basis

Under these measures ***“Improvement of Human Resource Quality in Scientific Research and Innovations”*** and ***“Development of Infrastructure”***, Lithuanian science, study and research institutions (Institute of Biotechnologies, Institute of Horticulture, Institute of Forest Research, Institute of Agriculture, and University of Agriculture) have joined their scientific potential and started implementing 3 projects directly connected with CD:

1. *“Improvement of Human Resource Quality in Research of Biotechnologies in the Fields of Agriculture and Forestry”*.

The project meets the requirements indicated in the guidelines: contributes its part to the development of human resources; improves the quality of service provided; and encourages and promotes the development of the service that is provided. At the same time, the project fulfills the special requirements: follows priorities of R&D, works on application of the latest international scientific results on the national level, and encourages researchers to work on interdisciplinary and cross- sectoral projects. The purpose of the project is to apply widely methods of biotechnologies in the research of agriculture and forestry; increase competences of researchers working in the fields of agronomy and forestry and their expertise in the field of plant biotechnologies. There is articulated lack of the researchers working in laboratories able to master modern biotechnologies, methods of gene engineering and technologies. The project aims to design new programmes to improve competence of researchers working with biotechnologies in the fields of agriculture and forestry, and provide training for the present researchers.

2. *“Preparation of M. A. and Ph. D. Students in Plant Biotechnologies and Innovations in the Fields of Agriculture and Forestry”*

The project is designed to provide education to M. A and Ph. D. students of biotechnologies and increase their competences in this field. The institutions engaged in this project have committed to prepare the special program in agrobiotechnologies and newly designed modules, theoretical and practical courses, methodological tools, and organize workshops for the students. The new curriculum will correspond to the quality of EU study program on biotechnologies (plant physiology and biochemistry, molecular and cell biology, gene engineering, bioinformatics, plant selection, GMO, and etc.). The project aims to educate 20 M. A. and 20 Ph. D. students becoming advanced in fundamental research on biotechnologies, one of priorities of the research and experimental development of Lithuania. Applied research is also one of the main objectives of the project as the students should acquire practice while working with plant biotechnologies as well as getting to know research methods and the most outstanding works of the EU scientists.

3. *“Network of Research in Plant Biotechnologies in Agriculture and Forestry”*

The project meets the requirements of the guidelines to ensure adequate infrastructure for human resource development in the research, to modernize the learning environment and improve the infrastructure of education institutions and good quality of education; to create favorable conditions for dynamic research and experimental development.

The major objective of the project is to design a virtual network of research in plant biotechnologies in agriculture and forestry to implement joint basic and applied research activities. It aims at accumulating the existing expertise of the scientists and researchers in the field of biotechnologies and using this potential to carry out the research. It is planned to invest into infrastructure (laboratories and their equipment) to use it for the basic research, and maintain the critical mass

needed to ensure the progress of the research in plant biotechnologies, forestry, and horticulture. One of the expected outputs of the project is to prepare at least 7 M. A. and Ph. D. students per year. These three projects complement each other as improvement of human resources in research requires the adequate infrastructure to be developed and maintained at the certain level.

In addition, the Ministry of Education and Science and Agency for International Science and Technology Development, which is in charge of 6<sup>th</sup> and 7<sup>th</sup> Framework, EUREKA, and COST programs, have joined their efforts to implement a project *“Improvement of the Horizontal Competence of Scientist and Employees of Companies in the field of Research and Technological Development”*. The main purpose of the project is to improve horizontal capacities and abilities of human resources in order to encourage scientists, researchers, and staff assisting them to increase the rates of successful execution of research and experimental development activities. The project aims at solving these problems: 1) insufficient competences of researchers and institutions that formulate science policy; 2) not intensive interactions among Lithuanian science and study institutions, between science and business institutions, and cooperation between Lithuanian, European, and other countries. Project has these expected results: researchers will improve their horizontal competences and become more mobile; science policy makers will improve their competences; and it is expected to lead to greater Lithuanian potential, better administration of state aid schemes, and match with existing demand; science and study, and researcher institutions will increase their participation in FP 7 by 20 - 30%; Lithuanian research potential will become more competitive on the European level; target groups will provide 20% more proposals in the FP 7 (2007 -2013); informal networking will have greater impact on fostering joint science and business projects, it will create favorable condition for science management.

**Under the 3<sup>rd</sup> priority “Development of Productive Sector”** the Ministry of Economy is in charge of several measures, such as: *“Direct Support to Business”* (focus on modernization, improvements and implementation of innovations, and promotion of clusters and cooperation networks); *“Improvement of Business Environment”* (SME’s and innovation system support, science and technological parks, technological centers, and clustering activities), and *“Promotion of Research and Experimental Development”* (R&D activities focused on industry and business, and intreraction between indutrys, business and research institutions).

There are three categories of projects fostering linkage within the knowledge chain that are related to CD:

- public projects: innovation, science and technology parks, technological centers, and clustering activities through intangible investment into know-how, patents and licenses, and advisory services, and personnel costs;
- business investment projects, like promotion of clusters and cooperation networks, creation of new products, and quality management by having intangible investment;
- companies research and development projects, such as industrial research and pre-competitive development projects by covering personnel costs, costs of equipment, outsourcing consultancies.

Certainly, there is more focus on creating favorable business conditions for the development of advanced technologies and infrastructure. However, it is hardy possible without having and fostering the linkage between science and business, and, consequently, integrating some elements of CD. To reach the purpose, the financial support is to be given to science and technology parks, innovation and technology centers to implement innovative projects and to cover expenses of patents. Innovations are encouraged in all sectors of the economy. The direct measure to support innovation is financing cooperation of the economic entities and research institutions in

implementation of the applied research projects. This measure is being funded from the financial allocations of the Ministry in compliance with the special rules. According to the rules, the support is given to innovative projects of SME's that focus on preparation of technical studies, applied research and/or development of technologies. According to this scheme, in 1999 – 2005 around 70 projects got the financing of 1.5 million euros.

A new approach to increase interaction between science and industry is to establish and develop national technological platforms and clusters. This seems to be a new effective way of creating cooperation network of large companies, SME's, and public research institutions to stimulate innovative activities in a particular sector and region. The supported activities of the projects are: studies of opportunities, development of strategic vision of clusters and strategic agenda of research, publications on activities of clusters, and participation in European platforms. In a way, these activities are related to CD of individual potential of researchers. Recently, the association “National Food Cluster“ and National Food Platform have been established with the main purpose – to shape the vision to develop more competitive food sector in Lithuania and prepare a strategic action plan covering the whole knowledge chain on national level.

To conclude, there have been very few examples of ARD projects for a long time due to radical changes in the country's life. So far Lithuania has been making first steps in becoming the country donor to the developing countries. At present, there are some elements of capacity development indirectly introduced into research programmes and projects both in relation to the developing countries and national scientific potential. Nevertheless, they are targeting mainly national research units to increase their competences and competitiveness in the field of agricultural research.

## **CAPACITY DEVELOPMENT APPROACHES ERA-ARD questionnaire - SLOVENIA**

The capacity development approaches in connecting and fostering research and other stakeholders in agriculture (including agricultural research for development) in Slovenia are mainly to implement and generate the knowledge developed in research and higher educational institutions in the field of sustainable agriculture aimed to the rural development. On the governmental level, institutions as Ministry of Higher Education, Ministry of Agriculture, Food and Forestry, Ministry of Environment and Natural resources together with Chamber of Commerce are involved in the capacity building (policy making) in Slovenia.

Capacity development approach of Slovenian ARD is still relatively poor as compared to the other ERA-ARD participating countries but is climbing up, mainly via different EU or developing countries financial mechanisms (SSA, local financing) and non governmental catholic organisations (e.g. missionaries in Madagascar). On the governmental level, financial support in capacity development is given for the bilateral cooperation with developing and developed countries enabling researchers to form networks, generate knowledge and implement research in capacity building.

The main objectives in capacity building in agriculture aiming at rural development are:

- Strengthen the participatory knowledge quadrangle
- Strengthen the other stakeholders (government and NGO) participation in the quadrangle.
- Strengthen the connection between Education and Research and farmer organisations and extension systems.

### **CONNECTION BETWEEN EDUCATION AND RESEARCH AND FARMER ORGANISATIONS AND EXTENSION SYSTEMS IN SLOVENIA**

Capacity development in connection between education and research, farmer organisations and extension systems in Slovenia is organised via different mechanisms and actions between agricultural and forestry research institutes (KIS, Kmetijski Inštitut v Maribor, Inštitut za ekološko kmetijstvo Fakultete za kmetijstvo v Mariboru) and Universities, mainly Biotechnical Faculty in Ljubljana and Faculty of Agriculture in Maribor including other members of the universities on specific topics) as well as chamber of commerce, food industry and tourist associations on the national and regional level. A special emphasis is given to the mountain



farms and especially to the education of women in rural mountainous areas to increase their socio-economic level.

The example of capacity building in Slovenia is given for North-East of Slovenia (the most rural and less developed area of Slovenia), dealing with agriculture where less than 10% of farmers have appropriate education. For instance, Faculty of Agriculture of the University of Maribor is involved in capacity building development by the activities such as:

- Regular education of the students coming from the rural areas with new and modern education programmes,
- Establishment of the educational units in the centre of the rural area, enabling the farmer services and assistance at the place.
- Organising the open-door days.
- Organising the specific topic workshops on the current problem-solving issues.
- Education and implementation of the knowledge by the specific workshops organised for the extension services in Slovenia.
- Education and implementation of the knowledge by the specific workshops organised for the inspection and monitoring service in agriculture.
- Assistance at developing new products and food and environment friendly sustainable agriculture.
- Specific applied research aiming at solving existing problems in agriculture.
- Offering life-long learning.
- Performing the analyses needed.
- Close connections with the NGOs, including the consumer organisations.
- Certificates issuing
- Consultancy and international cooperation
- Professional articles in the local media of current issues.

Concerning the ERA-ARD capacity building, Faculty of Agriculture is involved into the several international projects dealing with agricultural research for development and improvement of the rural education and health by Leonardo da Vinci projects, INCO, STREP projects and programmes financed at the national level. The implementation of knowledge is given by enhancing the cooperation and education of scientists and students coming from developing or non-developed countries (Africa, Balkan countries) with assistance and consultancy in capacity building in those countries. Recently, University of Maribor (Faculty of Agriculture and Medical faculty) assists to the YPARD platform, established by the Dr. Balasubraman Ramani at the

University of Hannover, Germany. Researchers are also involved under different activities in ARD, coordinated by the partner EU institutions (CIRAD, KVL,...).

We assume that milestones for ARD have been built, and it is expected that the activities will be risen and continued in the future, especially in connection with our EU and developing countries, based on their needs.

It would be useful and helpful to establish a platform that would serve as connective organism in between all stakeholders involved in capacity building.

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