

ERA ARD

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

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



Management of Joint Research Activities within ERA-ARD



**Guidelines for ARD programme planning,
monitoring, evaluation and impact assessment**



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Elaborated by
Alessandro Cocchi
Esbern Friis Hansen
Markus Giger
Urs Scheidegger

On behalf of Task Force 3.2 of the ERA-ARD project







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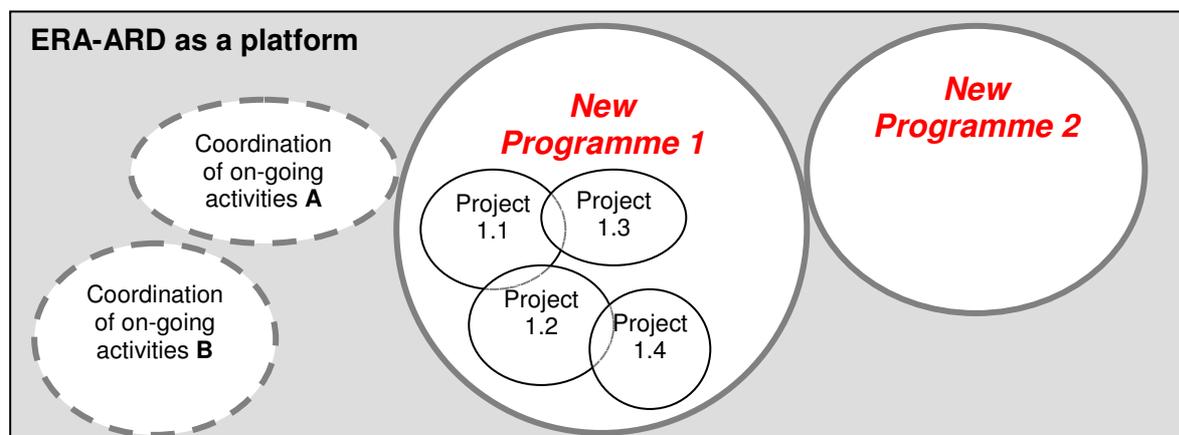
Preface and Assumptions

Within the ERA-ARD project, several groups and Task Forces are working simultaneously on different aspects of better coordination of the European ARD. Objectives, intervention strategies, and scope and levels of intervention are presently being defined in an iterative process. In Task Force 3.2, we felt the need to make some assumptions about these issues explicit and to propose a few terms that will be used consistently in this document.

Assumptions and definitions:

1. We assume that ERA-ARD will continue as a platform for coordination of European ARD for some time. Any initiatives, joint activities and mechanisms described in the present document would take place within this ERA-ARD platform.
2. It is explicitly not the intention of the present document to propose how ARD management is to be handled in the different member countries or the EU, except for ARD activities clearly included in ERA-ARD.
3. We assume that the present ERA-ARD project intends to develop coordination mechanisms for the on-going ARD activities of the member countries (Figure 1). ERA-ARD will identify thematic areas in which coordination seems promising (e.g. food safety). The countries (or rather the different ARD actors within each country) will then decide which of their ARD activities on food safety they want to coordinate within these mechanisms.
4. We assume furthermore that the present ERA-ARD project intends to develop new Transnational Programmes (Figure 1), which will be jointly planned and implemented. ERA-ARD will identify thematic areas for which the development of a Transnational Programme seems promising (e.g. biofuels). In addition, we assume that the geographical scope of each programme will be defined (e.g. Sub-Saharan Africa for Programme 1 on biofuel).
5. We assume that within one programme (biofuel), there will be several aspects to address, each in a separate project (e.g. Project 1.4: Village-based production of palm kernel oil and its utilization for generators). Thus, Programme 1 will develop TORs for each aspect and launch calls for proposals.
6. We assume that several partners from several European countries and several countries in low-income countries will implement each project jointly.

Figure 1: Different models for coordinating European ARD in the future



7. We assume that funding agencies from the different ERA-ARD member countries will agree to contribute funds to a common pool, based on a programme proposal.
8. We assume that, simultaneously, the programme proposal can be submitted to EU for funding (topping-up) within the 7th Framework Programme.
9. As for financing the new programmes, we assume that two modalities are possible: 1) A genuine common pool, to which several member countries and eventually international

agencies (e.g. the EU) contribute funds; and 2) a virtual common pool, where several member countries commit funds to a common end, but retain sovereignty over the funds committed (e.g. each country only finances components implemented by their own institutions and transfers the funds directly to these institutions according to a commonly agreed project budget); this second modality would be similar to the ERA-NET “CORE organic” initiative. We further assume that hybrids between these two modalities will be possible.

10. In the Management Team Meeting of ERA ARD in Brussels of June 2006, three possible mechanisms for future European ARD were identified: 1) South-centred; 2) Europe-centred and 3) CGIAR-centred. We assume that any new ERA-ARD programme (in the sense described above) may involve one or two or three of these mechanisms. We could imagine that different projects within one programme use different mechanisms.

Several terms have been proposed so far for referring to the two main types of ERA-ARD initiatives described under (3) and (4), as outlined in Table 1.

Table 1: The two main types of joint ERA-ARD activities and proposed terms

Type	Coordinating on-going ARD activities	Initiating new, transnational activities
Different terms used so far to refer to this type	Joint activities Joint, coordinated activities Coordinated joint activities On-going activities Programme on on-going activities Programme coordinating on-going activities	Transnational activities Transnational programme Jointly managed activities New programme Test programme Sub-programme Programme with joint management and joint funding
Proposed term	Coordinating Programme	Transnational Programme

We consider both types of ERA-ARD initiatives as programmes and, therefore, use the term Coordinating Programme for the first and Transnational Programme for the second in this document. If there is no need for differentiation, we simply use the term “Programme” to refer to both types.

As it is difficult to assess, discuss and develop management tools in a complete vacuum, we made very rough assumptions as to the volume of these activities. We do not want these assumptions to pre-empt the discussion in the Steering Committee, the Management Team or other Task Forces. They are illustrative and intended to show the type of activities for which the management tools selected and elaborated were intended (Table 2). We would, however, greatly appreciate feedback in case realistic values do not fall into this range.

Table 2: Assumptions regarding programmes and projects within ERA-ARD

Parameter	Minimum	Maximum	Best bet
Number of Coordinating Programmes	1	3	1
Number of European countries participating in one Coordinating Programme	3	14	6
Number of European institutions participating in one Coordinating Programme	3	20	10
Time horizon of Coordinating Programmes (years)	2	5	4
Number of Transnational Programmes	1	4	1
Number of European countries participating in one Transnational Programme	3	14	6
Number of low-income countries participating in one Transnational Programme	2	20	6
Time horizon of Transnational Programmes	4	8	5
Budget of one Transnational Programme (million Euros)	2	50	10
Share financed by EU (%)	0	100	30
Number of projects in one Transnational Programme	2	12	5
Number of European institutions participating in one project	3	12	6
Number of institutions in low-income participating in one project	3	20	6
Time horizon for projects (years)	2	5	3
Budget for one project (million Euros)	1	10	5



1 Setting the scene

The present document has been elaborated in the context of the ERA-ARD project “*The Agricultural Research for Development (ARD) dimension of the European Research Area (ERA)* “. It is based on work done within Task 3.2 to identify a set of *common or compatible methodologies for ARD planning, monitoring and evaluation and impact assessment*. This set should serve as a guide for the management of joint ARD activities that are presently developed within the framework of the ERA-ARD project. Such joint activities can take two forms:

1. **Coordinating Programme:** On-going projects and programmes of the consortium members are coordinated and their further implementation harmonised under the umbrella of ERA-ARD (see Figure 4 in section 2.3). This results in patchwork programmes with predominantly individually managed components responding to a few common criteria.
2. **Transnational Programme:** New programmes are jointly developed around identified themes relevant to low-income countries and for which the consortium members have special competence; the consortium members contribute to these programmes in a transnational manner. Ideally, different donors would provide funding for these programmes which could then, in turn, launch calls for project proposals organised around themes.

Wherever the considerations and proposals below refer to only one or the other of these two forms, this is indicated.

The present document was elaborated in several steps:

1. Making an inventory of commonly used methodologies for programme and project management within Europe and beyond (state-of-the-art) (see Annex for documents not cited in the present text)
2. Examining this methodology as to its applicability for managing research (ARD) projects and programmes (research-oriented)
3. Elaborating a proposal with the most appropriate methods to be used in the joint European ARD initiatives presently developed (consistent and practicable)
4. Examining this set of methods as to its acceptability for each ERA-ARD member country and the European Union for application within ERA-ARD (done by ERA-ARD members in 2007)

In Step 3, whenever possible, we considered or built on the “Project Cycle Management Guidelines” of the European Commission (2004). The rationale was that the EU and most ERA-ARD member countries already accept these standards. Modifications and new elements were introduced to account for the specificity of research activities and the management of programmes.

In general, the present document assesses the choices and outlines a set of methodologies derived therefrom. A description of this set of methodologies can be included in eventual proposals for European ARD initiatives.

1.1 Programme and project cycle management

Projects and programmes

Project. We use the definition of the European Commission (2004):

A project is a series of activities aimed at bringing about clearly specified objectives within a defined time-period and with a defined budget.

A project should also have:

- Clearly identified stakeholders, including the primary target group and the final beneficiaries;
- Clearly defined coordination, management and financing arrangements;
- A monitoring and evaluation system (to support performance management); and
- An appropriate level of financial and economic analysis, which indicates that the project's benefits will exceed its costs.

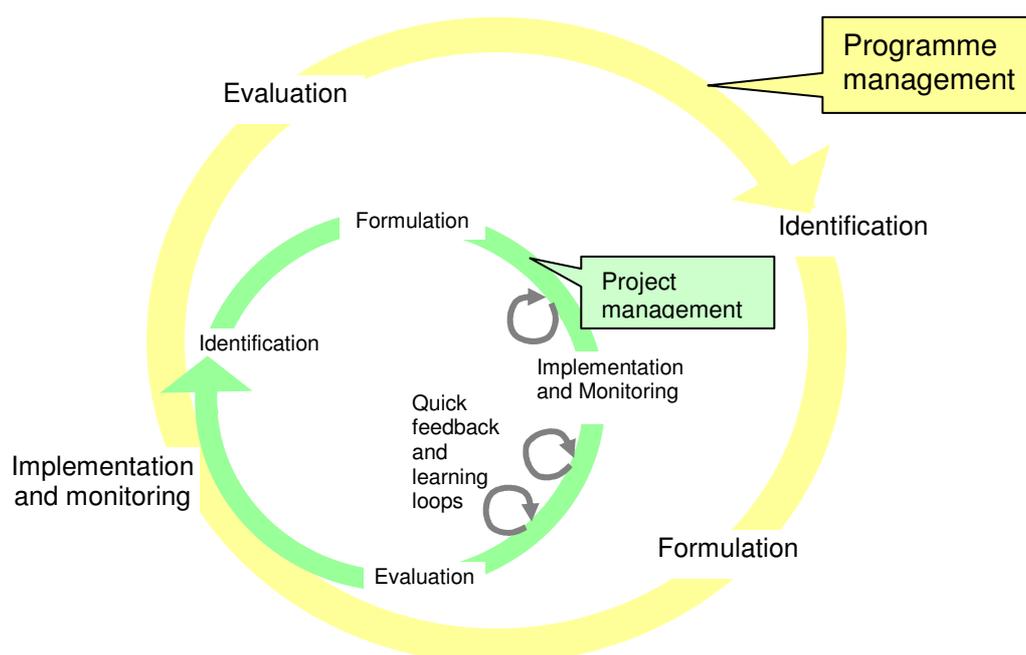
Programme. In general, literature refers to programmes as a broad area of work, for instance, to implement policy decisions (EC, 2004). Examples include:

- Sector or sub-sector programmes
- A “package” of projects with a common focus
- A platform or a set of priorities (longer term priorities, national/regional political priorities) for the formulation, funding and implementation of projects

Wherever the ERA-ARD project aims to elaborate proposals for joint European ARD initiatives, these will probably take the form of one or two programmes, within which several projects will be developed.

The relationship between programme and project management is illustrated in Figure 2. Basically, the project management cycle occurs during the implementation of the programme. Project evaluation is an ingredient in programme monitoring and adjustment.

Figure 2: Programme and project management cycle





Identification and Formulation together are often referred to as “Planning”. Project Cycle Management (PCM) is the term often used to refer to the management (Planning, implementation, monitoring, impact assessment and evaluation) of projects. EC (2004) includes the phase of “programming” in the project management cycle. When projects are developed within the framework of a larger programme, the programming phase is part of the programme unit.

Notes regarding project cycle management in ARD

- a) PCM was developed for the management of development projects. Actually, there are no generally recognised tools that comprehensively cover the entire PCM cycle designed specifically for the management of research projects or programmes.
- b) The Logical Framework Approach (LFA) is usually an integral part of PCM. Often, agencies state that it is important to imbed LFA, with its rather rigid "project plan", in a PCM approach to ensure that planning can be continually adapted to external changes, the evolution and progress of the project, and new insights (as evidenced by monitoring).
- c) For research management it will be crucial to ensure such flexibility and to work with small learning and feedback loops during the entire cycle to offset the inherent rigidity of the LFA.
- d) The question in ARD management is how to involve farmers and project partners from low-income countries in PCM. If farmers are to be involved in planning, an empowerment process may be needed first. It will be important to revise LFA every year, involving both research partners and farmers in low-income countries.
- e) Impact assessment was considered in the past as part of retrospective evaluation or separate studies done even considerably after completion of the project. Recently, impact assessment has also been used as a tool for steering the project during its implementation, in small feedback loops (impact monitoring). As in changing and complex environments it is difficult to attribute impact to project results (the so-called “attribution gap”), there are tendencies to focus on more direct outcomes as well as on qualitative work based on impact hypotheses.
- f) Monitoring is a process of on-going analysis during project implementation with the purpose of improving management decision-making. In a narrow sense, it looks at project progress towards achieving planned results. In a wider sense, it includes process monitoring, outcome and impact monitoring and context monitoring.
- g) Evaluation refers to a retrospective, end-of-phase or mid-term review and is thus a singular event. It looks at relevance, effectiveness, efficiency, impact and sustainability.
- h) Indicators are needed for monitoring and evaluation. They have to be defined during project formulation (planning). Collection of respective data needs to be included in the project activities.
- i) Similarly, approach and methodology for impact monitoring and assessment are defined during planning, and the respective activities that have to be carried out during project implementation are included in the project workplan.

Notes regarding programme management in ARD

Principles similar to those described above for PCM apply to programme management. For our ARD programme(s) to be developed, the following points should be observed:

Programme identification and formulation: Programme definition will have to consider needs assessment in low income countries as well as the strengths of European partners. It



includes the identification of funding sources for Transnational Programmes and mechanisms for coordinated fund management for Coordinating Programmes.

Implementation and monitoring: Programme implementation consists on the one hand of running several projects. It involves appraising, approving, financing, implementing and monitoring of these projects as well as organizing evaluation and impact assessment. On the other hand, the programme has to facilitate the exchange of information and joint learning between the different projects. The programme also has to have the capacity to do programme-level monitoring.

Evaluation and impact assessment at programme level will be a challenge, because of the high level of abstraction and aggregation involved. The programme will focus impact assessment on a few areas where it has a high concentration of activities.

1.2 Objective of programme and project management

The main objective of programme and project management is to enhance the success of ARD. This is brought about by:

- A common understanding and appreciation of problems and objectives by all stakeholders
- A common frame of reference in the form of jointly elaborated programme and project descriptions
- Planning for more relevant outcomes and enhanced impact
- A common basis for sound management during implementation (e.g. the monitoring system)
- Effective monitoring at the lowest possible cost
- Enhanced accountability vis-à-vis all stakeholders
- Quick feedback loops for fostering mutual learning
- Structured processes of evaluation for improving the next cycle

There are, however, risks associated with programme and project management. If the methodology or its use is inadequate, this may result in:

- Too bureaucratic processes alienating partners with passion and a sense of purpose (Earl et al. 2001)
- Management becoming so complex that only specialists can handle it, resulting in disempowerment of agricultural researchers
- Too much researchers' time spent on complying with the requirements of management rather than on actual research activities
- A loss of flexibility in responding to changes, new trends and new insights

The challenge is therefore to design a set of methodologies which ensure that the potential benefits of good project and programme management will be reaped while the risks are minimized. To ensure appropriate resources, 10% of the budget of each project and programme will be allocated to monitoring and evaluation.

1.3 Agricultural research for development: Shared values and principles

The members of the ERA-ARD project share a number of values and principles regarding ARD. The following list provides a framework for the joint conceptualization and implementation of ARD.

- a) Millennium Development Goals: All ARD activities share a common view that improvements in smallholder agriculture are crucial for development aimed at



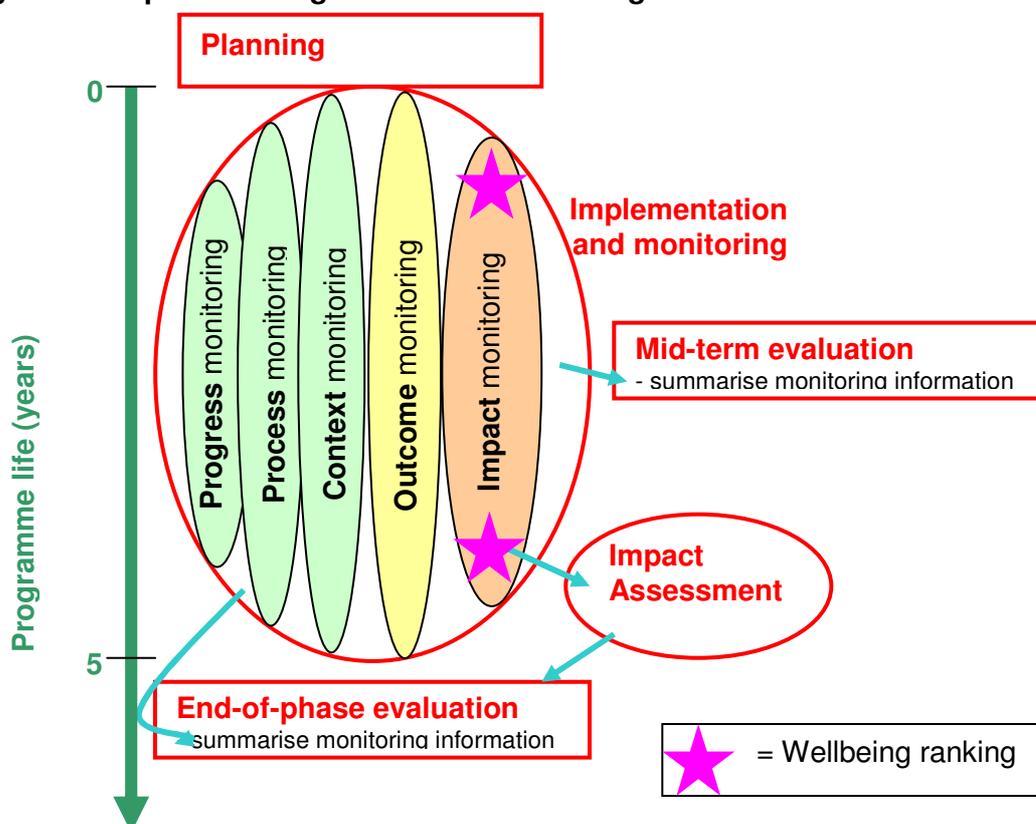
achieving the MDGs, especially reducing poverty and hunger, ensuring environmental sustainability, and building a global partnership for development.

- b) Impact orientation: ARD activities should be orientated towards impact; planning for impact and impact assessment will be crucial.
- c) Gender equity: Understanding gender differences in agriculture is crucial for developing relevant technology solutions; results of ARD should help foster gender equity.
- d) Sustainability: ARD should develop technologies and strategies that improve all three dimensions of sustainability (ecological, economic and social) at the farm level and in a wider context.
- e) Supporting innovation: ARD activities should be designed to stimulate and take advantage of knowledge and innovation systems in low-income countries to sustain development in the long run.
- f) Capacity development: In ARD it is not only the research output that counts, but also how it was achieved: Enhancement of individual, institutional and system-level capacity development for all participants should be an integrated part of the research process.
- g) Research partnerships: ARD should be carried out in partnership between the North and low-income countries. All partners will be involved in all PCM phases.
- h) Multi-disciplinarity: ARD should be carried out in multi-disciplinary teams including both the agricultural and the social sciences (thus conflicts with disciplinary requirements, e.g. regarding publications, have to be addressed).
- i) Involvement of target groups in all steps: ARD should involve, for instance, farmers from planning to implementation to analysis to evaluation and impact assessment.
- j) Empowerment of farmers: Empowered farmers (farmers who continue to experiment on their own and who try out new things more often and more systematically than before) are an important impact of a research project.
- k) Support national policy: ARD should support national policy in low-income countries, i.e. provide policy makers with good information, analyses, insights and decision-making tools and help to develop technologies and strategies compatible with the national policy context.
- l) Good governance: Priority should be given to work where there are partners committed to improving governance in a way that enhances the influence of local communities on decisions affecting agricultural production.
- m) Sharing of information: ARD activities should include mechanisms for systematic sharing of information within Europe, between low and high-income countries and among low-income countries.
- n) Efficient use of scarce resources: The ERA-ARD project and the programmes and projects developed in its context should help to make more efficient use of scarce resources for ARD.

1.4 Links between management activities and their timing

The different management activities need to build on each other. Timing, as proposed in Figure 3, allows for this.

Figure 3: Proposed timing of the different management activities



In this scheme, a programme life of five years was assumed. The basis for impact monitoring will be well-being rankings (see 5.3) at the start of the programme. Similar studies at the end will inform the impact assessment process. A mid-term evaluation of the programme will draw on the monitoring information obtained so far. Similarly, monitoring information and conclusions from impact assessment will feed into the end-of-phase evaluation. The programme will carry out a well-being ranking early on as an integrated part of the impact monitoring system (see Box 3, section 5.3). This will provide useful data for the midterm-evaluation and for comparison with a second well-being ranking in the context of the end-of phase impact assessment and evaluation.

While the proposed scheme refers to the programme level, it is clear that activities like impact assessment will have to concentrate on selected geographical areas. A few such areas can be defined, preferably where two or more projects of one programme are operating. Management activities at project level can be scheduled in a similar way (adapted to the time horizon of each project), but mid-term evaluations may not be needed for each project and impact assessment may be done in rather qualitative terms.

Depending on the indicators and sources of verification defined during the planning process, baseline studies may be needed at the beginning of the programme (the first well-being ranking actually will provide baseline information, but there may be further aspects for which the baseline needs to be established).



2 Planning

Research has its own requirements as compared to planning of development projects. Research deals with innovation, a process that is more difficult to plan and predict than other undertakings. There are different approaches to the planning of a research programme. The Task Force proposes a pragmatic way, which will help to structure the planning process, ensure that the process meets the requirements of a participative and partnership approach, and help to build into the planning product the flexibility that is required for research projects.

The programme cycle has already been presented in Chapter 1. This chapter looks at some important issues of the planning phase in greater detail.

2.1 Research partnerships

There are compelling reasons to support research partnerships between European research institutions and partners in low-income countries. Research is often a medium or long-term endeavour and capacity development is a very important element. Research partnerships have proved to be good tools for capacity development in research. Partnerships between complementary partners from the EU and low-income countries make it possible to exploit the comparative advantages of the respective research institutions. Research organisations in low-income countries can offer unique combinations of strengths (research experience and excellence, knowledge and experience of local conditions, contacts with beneficiaries and stakeholders and local networks). But European partners also have important advantages to offer such as access to centres of scientific excellence related to ARD as well as to many other, complementary disciplines. European partners also have access to good infrastructure, large scientific networks, and accumulated knowledge such as databases, libraries, non-documented experience and expertise.

It is envisaged that new ERA-ARD programmes will put emphasis on agenda setting through demand-driven approaches in the partner countries. If such approaches are combined with time-honoured partnership principles, this can enhance the quality of the results, especially regarding capacity development. Partnerships can contribute to capacity development by aiming at long-term involvement. More and more experience is being garnered with such approaches. Efforts have been made to develop guidelines and instruments for such partnerships.

Principles for research partnerships have been elaborated by the Swiss "Commission for Research Partnerships with Developing Countries", KFPE (KFPE, 1998). These principles have been well received by the Task Force and are, therefore, suggested for adoption in the ERA-ARD project. A specificity of Agricultural Research for Development is that social and ecological issues have a very important role to play. The problem of poverty and close links to and dependence on the natural resource base of agricultural production do not allow for approaching these issues only in a disciplinary way. Therefore, the need for multidisciplinary¹ and transdisciplinary² approaches has been added as an additional principle to the 11 principles formulated by KFPE (KFPE, 1998) (Box 1).

¹(Transdisciplinarity): A new form of learning and problem-solving involving cooperation among different parts of society and academia in order to meet complex social challenges. (Swiss National Centre of Competence in Research (NCCR) North-South. 2005: Glossary).

²(Multidisciplinary Research): Research based on a combination of several scientific disciplines, without implying that continual interaction and negotiation between these disciplines is necessary (as opposed to interdisciplinary research). (Swiss National Centre of Competence in Research (NCCR) North-South. 2005: Glossary).



Box 1: Principles of Research Partnership

1. Agree on the problems and objectives together

The theme should be decided upon and the project developed in discussion between all the partners, including the people who will eventually use the results, to the extent that is feasible for them. This can be done through special meetings and, if necessary, information must be prepared in a form that can be understood by the concerned, non-scientific actors.

2. Need for multidisciplinary and transdisciplinary approaches

The specific nature of ARD (i.e. the importance of social and environmental objectives in addition to productivity goals) creates a need to involve different disciplines as well as a wider array of concerned stakeholders in problem definition and research itself.

3. Build up mutual trust

Without mutual trust, it is hard to imagine cooperation. The creation of trust requires time and personal ability. Trust can be built, for instance, on previous, positive experience in research. Exchange visits with new partners will also be beneficial to this purpose.

4. Share information; develop networks

A well-functioning communication system is decisive for satisfactory collaboration between partners who are often far apart geographically. Communication is therefore a key element. If necessary, partners' access to modern communication systems needs to be strengthened. Clear agreement about exchange of information should be reached.

5. Share responsibility

Both the scientific and the technical leadership and management responsibility for the project should be carried as far as possible by all the partners, taking into consideration the competence and the resources of each. This division of responsibility should be clarified early and if possible in face-to-face meetings, and recorded in writing.

6. Create transparency

If all the partners contribute to the resources needed for the planned project, their commitment to the common enterprise will be strengthened. To satisfy the need for transparency, the source and amount of all resources, especially money, and the way they have been used, must be declared openly to all partners. It is advisable to prepare a binding "memorandum of understanding".

7. Monitor and evaluate collaboration

Both the progress of the research and the development and functioning of the partnership should be continuously monitored. Furthermore, there should be regular internal or external evaluations.

8. Disseminate the results

It is a basic principle that there should be unlimited access to the results of research. Since research projects in partnership between industrialised and developing countries are very often directed towards concrete problems, care should be taken that the results of the research are also communicated adequately to the people who will finally use them.

9. Apply the results

It is not enough to disseminate the results, however good the format is. As far as it can, the research team has an obligation to ensure that the results are really used to benefit the target group. Concrete plans should be made to communicate and discuss the possible use of the research results with concerned stakeholders (decision-makers, extension systems, NGOs, beneficiaries etc.)

10. Share benefits equitably

It is recommended that the right to publish results be discussed beforehand and laid down in writing. Any conditions laid down by the funding agency will also have to be taken into consideration. The legal rights of all partners to the expected results should be discussed, and preferably recorded in writing, as far as possible before the research is done. International law (e.g. concerning patent rights) and the national regulations of the host country must be considered.

11. Increase research capacity

In addition to the hoped-for results of the research activities, the chief concern when research partnerships are formed is to strengthen the total capacity of all those involved for doing effective research, on the individual and the institutional level as well as on the level of an enabling environment for research.

12. Build on achievements

The after-project situation should be kept in mind from the beginning. Above all, partners and their institutions must not simply be left to themselves after the joint project has been completed, but as far as possible there should be frequent personal contacts and a lively exchange of information (e.g. with joint seminars, lectures etc.).

Note to Box 1: The principles and the corresponding explanations (in adapted form) are taken from the 11 Principles of KFPE (1998). The Task Force for ERA-ARD 3.2 added Principle No. 2.

2.2 Identification

Identification is a first stage in the planning of a programme or project. There are different elements from which identification can start. In practice, a combination of these approaches is often applied. These elements are introduced in this chapter.



Needs assessment

The starting point for programme development is usually a needs assessment. A lot of work has already been done on which ERA-ARD can build. A number of existing assessments can be used, including needs assessment and priority setting by regional ARD fora, the CGIAR system and individual CGIAR centres, reports from political initiatives such as NEPAD, studies about the future of agriculture and ARD such as those by the World Bank, IAC, IFAD, and IAASTD, the draft paper for the World Bank Development Report 2008, etc.. Also results of national or sub-national needs assessments may be used. These assessments can provide insights that are highly relevant and need to be reviewed during the identification phase. In this step, the involvement of partners from low-income countries (NARS, research networks, regional ARD fora) will be limited to a few key individuals with an extensive first-hand knowledge regarding needs assessments in low-income countries.

Mapping thematic and geographical foci of European ARD

Looking at results of the mapping of European ARD, it will be possible to identify clusters of thematic strengths shared by different European partners. A more refined analysis should also reveal possible synergies and complementarities between European partners. It should further help to identify areas where no country by itself has enough critical mass to achieve research results within a useful time-span. Besides the thematic aspects, the geographic focus of European research activities also needs to be analysed, and overlaps or complementarities identified.

Working the other way around, emerging programme ideas can be tested against the ERA-ARD database resulting from the mapping exercise of tasks 1.2 and 1.3, and potentially concerned European countries, with their research programmes and research institutions, can be identified.

Identification of programme focus and scope

The identification of programme focus and scope is a process involving both the policy makers and programme management of the ERA-ARD partners. It can be partly based on the mapping exercise, but also on needs assessments by the ERA-ARD and partners from low-income countries. It can also include the results of prospective thinking on new and up-coming trends related to ARD.

Possible steps can involve workshops bringing together researchers and policy makers from the ERA-ARD countries as well as from the partner countries.

For the selection of the first two or three sub-programmes in the on-going ERA-ARD project, a process needs to be chosen that respects the time limitations of the present project. Thus a less ideal process is used. (So far, three drivers of the consortium's investment in ARD have been identified in the management meeting on 28 September, 2006 in Zurich. They are: 1) knowledge generation 2) EU policy concerns, and 3) support to activities identified in priority setting in low-income countries themselves. Based on this, nine potential sub-programmes were preliminarily identified. After also considering the policy dimensions, the SC took a decision on 24 October 2006 in favour of the first two test cases of "joint activities", i.e. Coordinating Programmes, and a Transnational Programme.)

Departing from the mapping exercise, initial programme ideas can be proposed and possible partners on the European side identified. Incentives for taking initiatives could include the prospect of bringing in additional expertise from European partners and the potential to get additional funds from other European countries or the EU itself. The process of identification is probably an iterative one, involving researchers and policy makers, but will lead gradually to a clear programme focus. It is important that concrete proposals be formulated very soon



and the test programmes be started. More certainty on the nature of the up-coming programmes will allow greater precision in formulation of the present PCM guidelines.

The Task Force is of the opinion that the final decision on the proposed programme focus and scope will be taken by the ERA-ARD steering committee.

2.3 Formulation of programs and projects

After the identification of programme focus and scope, the process of formulating a possible programme in greater detail will follow. The Task Force looked into possible planning approaches and proposes a planning procedure adapted to the needs of ARD.

The Logical Framework Approach applied to planning of research projects and programmes

General introduction to the LFA

The EC has required the use of the Logical Framework Approach (LFA) as part of its Project Cycle Management system since 1993 and it provides a core set of tools with which to undertake assessments of projects. The method was originally developed in the late 1960s, and has in the meantime been taken over and adapted in different forms by many international agencies. "The LFA should be thought of as an 'aid to thinking'. It allows information to be analysed and organised in a structured way, so that important questions can be asked, weaknesses identified, allowing decision makers to make informed decisions based on their improved understanding of the project rationale, its intended objectives and the means by which objectives will be achieved." (EC, 2004).

It is beyond the scope of this document to explain all the elements of the LFA. It is assumed that many actors already have experience with this approach. The EC guidelines (EC, 2004) can be recommended as an easily accessible and good source of additional information for the interested reader.

Pros and cons

The LFA is not universally accepted. There is reluctance in certain research communities to use it for planning research activities. The LFA requires that clear cause-effect relationships can be determined, i.e. that the undertaking can be planned well in advance and the problem structure can be analysed sufficiently during the planning process. In research, this is admittedly difficult, because research is about innovation, and thus the result of the research cannot always be predicted accurately enough.

The LFA is not a systemic approach. It is not easy to apply if the root causes of a problem are difficult to determine, and the problem is more a nexus of different factors that interfere in unknown ways.

However, the LFA also has a lot of strengths (Table 3): It builds logic into the structure of proposals. For instance, it clearly separates project results (which are under the control of the management) and effects, outcomes and impacts that are influenced to a variable degree by the management, but not fully under its control. LFA can be of great help in organizing the work to be done and explaining why it needs to be done. It is relatively easy to communicate and to understand.

A widespread, common challenge in project planning is achieving consensus on priority problems and objectives. While the LFA does not automatically solve this problem (Table 3), it seeks to explicitly address and discuss these issues. This allows transparency when consensus is reached and when conflicting opinions persist.

The Task Force is of the opinion that if this framework is flexibly applied, it can be useful in the ERA-ARD project. Some adaptations will be necessary to make it applicable to research projects, however. In particular, the LFA needs to be complemented by indicators to assess the relationships between different actors (for process monitoring) and to observe the wider context (for context monitoring, see 3.3, 3.4 and 3.5).

Table 3: Strengths and common problems in the application of the LFA

Element	Strengths	Common problems, difficulties
Problem analysis and objective setting	<ul style="list-style-type: none"> Requires systematic analysis of problems, including cause and effect relationships Provides logical link between means & ends Places the project within a broader development context (overall objective and purpose) Encourages examination of risks and management accountability for results 	<ul style="list-style-type: none"> Getting consensus on priority problems Getting consensus on project objectives Reducing objectives to a simplistic linear chain Inappropriate level of detail (too much/too little)
Indicators and source of verification	<ul style="list-style-type: none"> Requires analysis of how to measure the achievement of objectives, in terms of both quantity and quality Helps improve clarity and specificity of objectives Helps establish the monitoring and evaluation framework 	<ul style="list-style-type: none"> Finding measurable and practical indicators for higher-level objectives and for projects with 'capacity building' and 'process' objectives Establishing unrealistic targets too early in the planning process Relying on 'project reports' as the main 'source of verification', and not detailing where the required information actually comes from, who should collect it, and how frequently
Format and application	<ul style="list-style-type: none"> Links problem analysis to objective setting Emphasises importance of stakeholder analysis to determine 'whose problems' and 'who benefits' Visually accessible and relatively easy to understand 	<ul style="list-style-type: none"> Prepared mechanistically as a bureaucratic 'box-filling' requirement, not linked to problem analysis, objective setting or strategy selection Used as a means of top-down control – too rigidly applied Can alienate staff not familiar with the key concepts Becomes a 'fetish' rather than a help

Source: EC (2004), Figure 15

Main elements

In generic terms, the LFA can be presented as a process undertaken in two phases: the analytical and the planning phase (Table 4). It is useful to also mention the definitions given in the EU manual regarding stakeholders, beneficiaries and partners (Table 5).

Proposal for participatory programme planning of ARD projects

The Task Force proposes the following steps for the planning of *new*, Transnational Programmes. These steps build on the LFA and propose a number of concrete steps for adapting this process to the requirements of ERA-ARD (Table 6).

However, the ERA-ARD project also aims at better coordination of the existing national programmes of different European partners. Figure 4 illustrates the risks with present (uncoordinated) national programmes in a given thematic area: duplication and insufficient linkages between the different initiatives and hence lack of mutual awareness regarding each

other's work. Coordination has the potential to reduce duplication, enhance complementarity (move programmes closer together), and establish effective links between the different national programmes.

Table 4: Two main phases of the Logical Framework Approach

The Logical Framework Approach	
Analysis phase	Planning phase
<ul style="list-style-type: none"> ❖ Stakeholder analysis - identifying & characterising potential major stakeholders; assessing their capacity ❖ Problem analysis - identifying key problems, constraints & opportunities; determining cause & effect relationships ❖ Objective analysis - developing solutions from the identified problems; identifying means to end relationships ❖ Strategy analysis - identifying different strategies to achieve solutions; selecting most appropriate strategy. 	<ul style="list-style-type: none"> ❖ Developing Logical Framework matrix - defining project structure, testing its internal logic & risks, formulating measurable indicators of success ❖ Activity scheduling - determining the sequence and dependency of activities; estimating their duration, and assigning responsibility ❖ Resource scheduling - developing input schedules and a budget from the activity schedule

Source: EC (2004), Figure 16

Table 5: Stakeholders, beneficiaries and partners: some definitions

<ol style="list-style-type: none"> 1. Stakeholders: Individuals or institutions that may – directly or indirectly, positively or negatively – affect or be affected by a project or programme. 2. Beneficiaries: Those who benefit in whatever way from the implementation of the project. Distinctions may be made between: <ol style="list-style-type: none"> a. Target group(s): The group/entity who will be directly, positively affected by the project at the project purpose level. This may include the staff from partner organisations; b. Final beneficiaries: Those who benefit from the project in the long term at the level of the society or sector at large, e.g. “children” due to increased spending on health and education, “consumers” due to improved agricultural production and marketing. 3. Project partners: Those who implement the projects in-country (who are also stakeholders, and may be a ‘target group’).
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Source: EC (2004)

In the case of Coordinating Programmes, a similar exercise may be useful to establish a common framework. Indeed, the exercise of trying to build a common logical framework would in itself be a major tool for increasing effective cooperation between programmes of individual EU countries. However, the possibility and the concrete implementation of such an approach would require a lot of flexibility.

It may be possible to focus on just some of the steps in the planning process in such a case. For instance establishing a joint framework for impact monitoring and assessment, a joint needs assessment or a strategy analysis can also be done as a single exercise without going through all the other steps. Each of these elements could contribute towards greater coordination of joint activities.

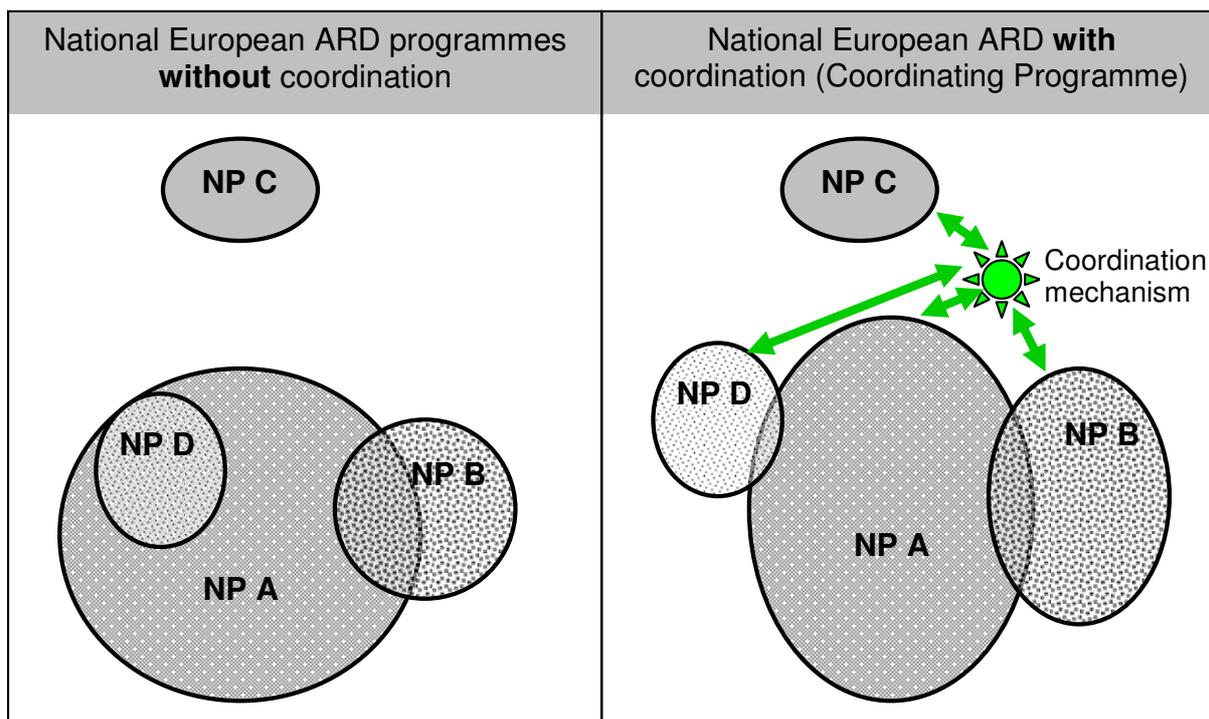


Figure 4: Expected effect of coordination between ARD programmes within a given thematic area (e.g. food quality) in the different European countries (NP = National Programme)

Table 6: Proposed steps in planning ERA-ARD sub-programmes (identification and formulation)

Steps	Comments
Needs and strengths assessment	<ul style="list-style-type: none"> • Mapping of European ARD (themes, partners, budgets, geographical scope etc) • Needs assessments • Prospective thinking
Preliminary Identification	<ul style="list-style-type: none"> • Decide on the focus • Prepare an issue paper to raise everybody's level of knowledge on the issue. • Selection of workshops participants (research and stakeholders, also from low-income countries). This is of course a key element, which, if not done properly, can bias the whole process.
Workshop 1:	<ul style="list-style-type: none"> • Stakeholder analysis • Problem Analysis • Objective Analysis • Strategy analysis: Identify knowledge gaps/research issues /state of the art / methods/ alternatives) • Alternative Analysis: Select objectives, which can realistically be achieved and are contributions to the overall objective.
Electronic consultation:	<ul style="list-style-type: none"> • Complement with desk studies to close knowledge gaps and verify assumptions forwarded in the workshop 1 • Consult with additional people
Electronic scoring	<ul style="list-style-type: none"> • Decide on the alternatives to be chosen
Logframe Matrix	<ul style="list-style-type: none"> • Develop the Logframe Matrix (can be done by an individual) and electronic discussion (also by phone, skype)
Workshop 2:	<ul style="list-style-type: none"> • Finalise the Logframe matrix • Plan the activities (different groups) • Developing Impact Hypotheses and Indicators
Reporting	<ul style="list-style-type: none"> • Prepare a workshop report • Prepare a documented adapted for wider dissemination



Comments

The Task Force 3.2 considers the LFA not simply as an option, but as a “must” required by several important stakeholders (funding mechanisms) in ERA-ARD.

- The Logframe can be elaborated in a participatory workshop with stakeholders at the project and programme levels. Flexibility and proper workshop facilitation is needed to allow for genuinely participatory processes. This flexibility must be built into an ERA-ARD approach.
- It should be a requirement to revise the Logframe regularly based on results of monitoring (especially at project level)
- As for communication, a possible weakness of the proposed participatory approach could be that even good reports from workshops are often understandable only by those who participated in the event. It is, therefore, necessary to translate the workshop document into a document for wider dissemination.

Developing impact hypotheses and impact indicators

The planning process should ultimately help to design research projects that have a positive impact on people and their environment. The logical framework approach includes the formulation of project results, direct project objectives, and project development goals. Impact hypotheses are a way of explicitly stating how the project’s expected results (outputs) are meant to lead to positive, intended impacts (Figure 5). At the same time, the impact hypothesis approach constitutes risk analysis by asking, for each link along the impact chain, what could go wrong and could thus lead to negative or no impacts. Because project’s impacts are difficult to attribute clearly in a changing world, an element of uncertainty is involved in this exercise. Thus, the term “hypothesis” is used. In order to understand the impacts of a project, it is possible to structure possible “stages” in impact chains. This means clearly stating expected ways of achieving the desired ultimate impact.

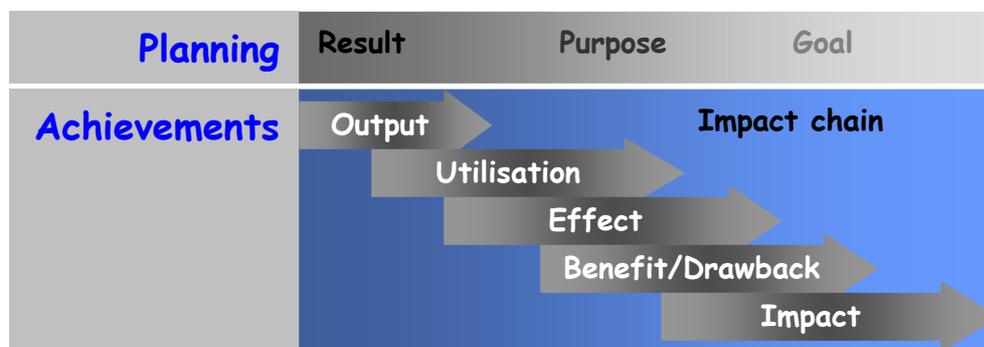


Figure 5: Impact chain (Source: Herweg and Steiner, 2002)

The term "impact" thus covers a wide range of implications, which can be seen as an impact chain of overlapping links (Figure 5). The utilisation of project outputs already implies the idea of broad effects (e.g. adoption of a new crop production system with greater area coverage). As a consequence of utilisation, initial effects (outcomes, direct impacts) can be observed (e.g. crop yield increases, soil erosion decreases). These effects may imply both benefits and drawbacks (e.g. increased crop yield must be marketable to increase household income). In the end, at least some of the impacts should relate to the overall goals of development (e.g. empowerment of local people, poverty alleviation).

The further to the right (in Figure 5) the effects of a project are in the impact chain, the more uncertainty about the role of the project exists. This is why the term “attribution gap” has been coined (Figure 6). In the chapter related to impact evaluation we will propose methodologies to deal with this problem.

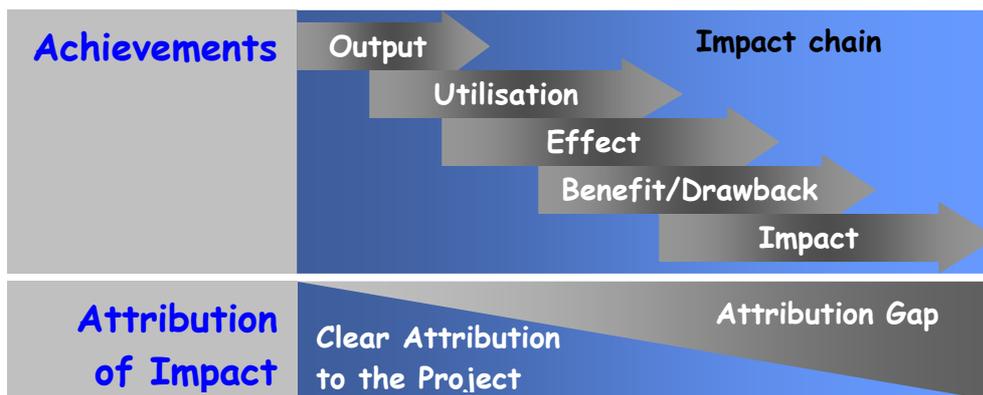


Figure 6: Attribution gap (Source: Herweg and Steiner, 2002)

When defining an impact hypothesis and the corresponding indicators, it may be advisable to concentrate mainly on more direct outcomes of the project (i.e. utilisation of research results and their effects, benefits and drawbacks). Since most research projects rely on other bodies (extension services, mass media) to disseminate their findings, the attribution gap is especially large. But it is all the more important to outline - in the form of impact hypotheses - how collaboration with these dissemination bodies is expected to work.

The process of defining impact hypotheses starts with establishing the hierarchy of the Logframe Matrix, which is based on hypotheses regarding expected effects and impacts. Impact hypotheses should also be formulated in view of unexpected or possible negative impacts. In well-formulated Logframes, such possible negative hypotheses are included in assumptions (as possible negative trends which are assumed to be under control).

It is clear that it will never be possible to outline all possible scenarios and “impact hypotheses”. However a discussion among project stakeholders can be highly beneficial to clarify the project logic and inherent risks. This can provide a basis for periodic review of these hypotheses as a measure to mitigate risks in order to learn and reorient project activities.

2.4 Implications of different cooperation models for project planning

Different cooperation models will have different effects on the way and the extent to which planning procedures can be harmonised within ERA-ARD.

In Coordinating Programmes, a better coordination of existing programmes can be achieved through a harmonization of criteria (target countries, climatic zones, research themes, using jointly defined ERA-ARD criteria). The planning methods and procedures applied will follow national regulations and practices. A coordination mechanism will help to build bridges between the different programmes, narrow the existing gaps, and reduce overlaps. Increased exchange of information will speed up and intensify links between programmes.

In the case of Transnational Programmes (new programmes with joint management, joint evaluation and possibly a common pool) common planning mechanisms will be applied.



2.5 Call for proposals and managing the selection process for research projects

This section applies only to the case of a Transnational Programme. Defining and agreeing on common standards for selection processes will be a crucial element in programme planning.

It is envisaged by the Task Force that once the research programmes have been identified, the research agenda will be broken down into a number of smaller projects. A call for proposals will be launched, under which research organisations can apply through joint proposals if they meet certain pre-defined criteria. One criterion should be that joint proposals must bring together at least a few low-income country and European institutions. The challenge will be to apply commonly accepted standards for such calls and the subsequent selection process. This is of immediate importance for Transnational Programmes, but Coordinating Programmes (better coordination of existing programmes) may also benefit from meeting the same standards.

The main challenge is to guarantee a process that is transparent, reliable and accountable. We refer to the EU model for managing calls (EC, 2003). It mentions, as the main principles of the selection process:

- (i) **Quality.** Projects selected for funding must demonstrate high scientific, technical and managerial quality in the context of the objectives of the (..) programme in question.
- (ii) **Transparency.** In order to provide a clear framework for researchers preparing proposals for funding and for evaluators evaluating proposals, the process of reaching funding decisions must be clearly described and available to any interested party. In addition, adequate feedback must be provided to those making proposals on the outcome of the evaluation of their proposals.
- (iii) **Equality of treatment.** A fundamental principle of EU research and technology development programme support is that all proposals should be treated alike, irrespective of where they originate or the identity of those making proposals.
- (iv) **Impartiality.** All proposals are treated impartially on their merits.
- (v) **Efficiency and speed.** The procedures have been designed to be as rapid as possible, commensurate with maintaining the quality of the evaluation, appropriate use of public money, and respect for the legal framework within which the programme is managed.
- (vi) **Ethical considerations.** Any proposal that contravenes fundamental principles may be excluded from evaluation or selection at any time.

These principles will also have to be applied in an ERA-ARD programme. The EU guidelines are a good reference guide for structuring the process. Another reference is the guidelines produced by the Swiss "Commission for Research Partnerships with Developing Countries", (KFPE) on the design of selection processes for North-South Partnership Programmes (Sieber and Braunschweig, 2005). The two documents are quite similar. The KFPE guidelines have, as an important additional element, the provision of funds for joint elaboration of proposals as a way of fostering real partnerships. The specificity of ARD will be more pronounced when the selection criteria are defined (i.e. besides scientific criteria development objectives will also carry weight).

Comparing these two documents, common elements emerge, which must be defined in any selection process. These elements are highlighted in Tables 7 and 8. We propose to apply them to ERA-ARD programmes. The interested reader should refer to the two documents mentioned, which explain these points in greater detail.

Table 7: Preliminary work for proposal evaluation and selection (adapted from Sieber and Braunschweig, 2005 and EC, 2003)

Modules	Main points
Involving the actors	Defining roles and appointing: <ul style="list-style-type: none"> • Evaluators • Independent observer (EC only) • Selection committee • Decision committee
Defining selection criteria	Deriving criteria from the programme objectives
Deciding on a methodology	Defining weights and thresholds for criteria Checklist and scoring methods
Organizing proposals	Providing guidance to make sure that the proposals submitted contain the necessary information

Table 8: Proposal evaluation and selection process (adapted from EC, 2003 and Sieber and Braunschweig, 2005)

Modules	Main points
Before the evaluation of the proposals	Call for expression of interests (optional) Call for proposals Pre-proposal checks Provision of funds for joint development of proposals Submission of full proposals Acknowledgement of Receipt Eligibility check
Evaluation by independent expert	Briefing of independent experts Individual evaluation of proposals (by several experts) Consensus Panel evaluation (to examine and compare consensus, optional) Feedback to proposers
Finalisation of the evaluation	Establishing a commission ranking list (include budgets) Reserve list Decision Reporting on the evaluation process
Negotiation and selection of proposals	Negotiation (check against regulations etc.) Final selection of financing

2.6 Delivery strategy

Dissemination of results must be planned from the beginning and be based on a delivery strategy. This is necessary even when stakeholders and partners are involved in the formulation of the programme.

- An example of such a strategy is the one formulated by the Generation Challenge Programme (GCP, 2005). The programme requires that a product delivery plan must be included in the project proposal. According to the GCP the principles of such a delivery plan should be:
- The programme holds itself accountable for developing and delivering appropriate products that contribute to improved livelihoods among resource-poor farmers and consumers; thus partners, users, and appropriate actors in the value chain should be identified and engaged early on in the development of research projects.
 - As an integral part of project proposals, a product delivery plan should be prepared for the delivery of products to the primary users and their further stages of development as far as possible.
 - Products should be developed in cooperation with appropriate partners and in coordination with users to ensure that the products meet the demand for innovation.

The ERA-ARD project will follow this example and aim to formulate product delivery plans in the early stages of programme development.



3 Implementation and monitoring

3.1 Programme and project implementation

Programme level

A first step in implementation is the setting-up of effective leadership and an efficient administration for each programme. As a minimum requirement, the leadership has to comply with EU rules and regulations.

Programme management will consist of the following bodies, forming the programme management unit:

- A board of trustees (or steering committee) elected democratically
- An executive manager
- A small administrative unit based in the same institution as the executive manager

Terms of reference for the programme management will specify the following:

- Responsibilities of each of the bodies
- Purpose and election principles for the board of trustees
- Recruitment of the executive manager
- Principles for recruitment or secondment of administrative and support staff.

In broad terms, the programme management unit will be responsible for the following tasks:

- Definition of the programme's strategy, based on the focus and scope as identified jointly with the stakeholders during programme planning
- Organisation of the calls for project proposals and selection of proposed projects
- Development of a model for management of these projects

For the one or two Transnational Programmes, a full-fledged management unit will be needed. For Coordinating Programmes, on the other hand, management can probably be assumed by one of the researchers involved in the joint activities on a part-time basis, who would then organise staff for administrative support.

Project level

For project implementation, a project leader is selected among the researchers participating in a given project (as stipulated in the project proposals). Projects will be implemented basically by the research organizations participating in a given project, using their existing procedures, logistics and staff as far as possible. Budgeting should allow for yearly revision of allocations, yet provide limited security for participating organizations for their own planning. Decisions on budget allocation will be taken on the basis of revisions of the logical framework and of output monitoring and progress assessment. Management decisions will be taken at the lowest appropriate level, often within the participating organisations (recruitment and staff allocation, budget execution and work planning etc.). The project leader will have a say in staff allocation to the project and other important decisions taken at the level of participating organizations. In case the project leader and the management of a participating institution do not come to an agreement on issues crucial to the progress of the project, the case is referred to the board of trustees of the respective programme. Normally, the programme level management and Board of Trustees will also assume the role of Steering Committee for its different projects, unless the Board decides differently and installs a specific Steering Committee for certain projects.



Knowledge management and review processes are crucial, both at project and programme level. It is proposed to organise annual programme meetings with several purposes:

- Share the results (e.g. through presentations and facilitated discussions)
- Review progress of work in the past year
- Based on progress and other monitoring information, review the logical framework
- Derive an annual workplan thereof

If feasible, similar annual meetings should be organised at project level (e.g. centralised in parallel sessions immediately after the programme meeting or decentralised in strategic hot-spots of each project).

Other mechanisms to enhance exchange of information and experience consist in planning for overlaps in field activities and field training events of several projects or project components. An electronic workspace or platform can greatly facilitate working together and joint administration. Professionally facilitated, time-limited electronic fora can allow for thematic discussion at minimum cost.

3.2 Multiparty agreements and contracts

Multiparty agreements (MPAs) or multiparty contracts define collaboration between several project partners. Their purpose is to facilitate smooth implementation of the project. In ARD projects discussed here, multi-party contracts are a useful tool, as such projects usually will include several partners from the North and several from low-income countries.

MPAs are especially efficient in programme management, i.e. where several similar projects are implemented in the same framework, since careful elaboration of MPAs is time-consuming. The same prototype MPA may then serve for all the projects within one programme.

Typically, MPAs define the following aspects:

- Contents of the project
- Project governance and responsibilities of the different partners
- Rules and responsibilities for implementation
- Deliverables (reports) and deadlines
- Monitoring and evaluation
- *Publication policy and free flow of information*
- *Intellectual property and benefit sharing*
- *Material transfer and use of genetic resources*
- *Ethical clearance and biosafety guidelines*

Most of these aspects will already be described in the project proposal and can be copy-pasted or derived from there. The last four bullet points, however, are specifically delicate. They are, therefore, often not discussed during the initial stages of project planning. A conscious effort needs to be made to address these issues at least in the MPAs.

Models for MPAs exist and can provide ideas for ARD programmes. Depending on the focus and scope of an ARD programme, several of the delicate issues may play a major role and should, therefore, be included in an MPA.

3.3 Monitoring

Monitoring involves the collection, analysis, communication and use of information about the project's or programme's progress (EC 2004). It also includes the use of this information for steering the project or programme (called "review" in EC 2004):

- Sharing this information with implementers and key stakeholders
- Making informed decisions about necessary re-planning and adjustments in implementation

The main purpose of monitoring is to create the basis for reacting to unexpected situations, for adapting project implementation, and for fine-tuning activities in response to such situations in order to remain on track.

Monitoring: More than just comparing results with the plan

Progress monitoring: Narrow sense monitoring (result monitoring) examines to what degree the indicators, as stipulated in the logical framework, have been achieved. However, many indicators refer to the end of the phase and, hence, are difficult to verify before this date. Therefore, monitoring should also answer the following questions (of more intermediate nature):

- Are activities implemented on schedule?
- Are they being implemented in the most efficient way?
- Are expenditures within budget?
- Are substantial contributions being made towards achieving the expected results?

Process monitoring is also based on indicators formulated during planning (process indicators). The question to be addressed here is whether the processes initiated or supported by the project or programme:

- Are participatory and democratic
- Enhance ownership of the results
- Are congruent with the project's objective

Context monitoring in turn observes changes and trends in the context of the programme or project. Especially, it should observe whether the "important assumptions" as stipulated in the logical framework materialise and, if not, propose adjustments to the project's logic.

Outcome monitoring (Earl et al., 2001) is concerned with the question: How do so-called "boundary partners" (the partners with whom the project or programme team interacts directly) change their behaviour. It is a step towards impact monitoring.

Impact monitoring properly speaking is discussed separately in Chapter 5, as it is an integral part of impact assessment.

Organization of monitoring

Monitoring is a task of the project or programme management. It is an internal assessment to see if the project or programme is on track and, if not, to initiate the necessary corrective measures. The outcome of monitoring should be management decisions and (if the management cannot initiate the necessary changes itself) proposals to the steering committee aimed at corrective measures. Monitoring in this sense is action-oriented and it should avoid collecting a lot of data that are never used. Especially management-driven progress monitoring should be limited to an absolute minimum.

In turn, participatory monitoring should be favoured: Periodically, participating researchers from low and high-income countries should give their (predominantly qualitative) assessment of progress, processes, context evolution and outcome. Feedback from other stakeholders may be obtained in the process, if it is needed for steering. The management should show how monitoring has influenced management decisions, and not simply distribute monitoring information.



3.4 Monitoring and its relation to planning

As outlined above, the result, process and outcome indicators are defined during the planning phase and lay the basis for monitoring. Similarly, risk analysis during planning, leading to the “important assumptions”, provides the framework for context monitoring. Equally during planning, for each indicator a source of verification is defined. Ideally these are databases, documents or statistics that are elaborated anyway, for other purposes. If a source of verification requires a study to be done specifically for monitoring purposes, it should be carefully determined whether it is worthwhile to commit the resources needed for this study.

As it is sometimes difficult to come up with good indicators during the planning phase, they should be revised annually, based on experience. A decision to change indicators has to be conscious, well justified, and communicated to all concerned.

Monitoring activities have to be planned and appropriate resources allocated. This includes accessing the data in existing sources of verification (or, if absolutely necessary, collecting primary data), processing and interpreting these data, as well as sharing and targeted dissemination of the information and decision-making.

3.5 Monitoring strategies and tools

As outlined above, monitoring is a classical management task. At programme level, the management unit will have to designate administrative capacity for data collection and analysis. At project level, the participating researchers will provide relevant monitoring information to the project leader. Monitoring should not cause additional work for either the management or for researchers.

As for monitoring tools, the PCM manual of EC (2004) lists a series of possible tools and approaches, which will be used in the following ways in ARD:

Risk management matrix: Can be initially derived from the logframe matrix, but then needs to be up-dated, as new risks may emerge. Will be useful for the management to keep track of responsibilities.

Performance data analysis: Several ways of processing progress monitoring data into performance information are listed (from simple planned *versus* actual comparisons to stratified performance presentation). Of limited use in ARD activities; done by administrative unit on request (by the management)

Monitoring visits: Short visits to sites where activities take place. In ARD, it will be difficult to imagine a field visit by the management for the sole purpose of monitoring, but when field visits are scheduled for other purposes, it may be useful to include monitoring issues in the interview guide.

Periodically reviewing administrative and management records: Since the collection of such information will be kept to a minimum, its review and valorisation will follow quite naturally.

Regular review meetings: Is very useful for information exchange, annual planning, team-building and motivation. This will be integral part of the annual meetings foreseen for programmes and projects (see section 3.1)

Progress reports: Technical reports, depicting main results, will be presented at the annual meetings and discussed. This will create a picture of the overall progress of the projects and programmes. However, activity reports are not required.



A wider array of tools for monitoring is presented in the IFAD manual on Monitoring and Evaluation (IFAD 2002). Some participatory tools, such as simple, periodic SWOT analyses done by participating researchers, can complement the above tools at low cost. A concise participatory monitoring system (where different stakeholder groups are involved in the design of monitoring and in defining meaningful indicators, IFAD 2002) can make sense in selected projects or project components, but should be optional: Important stakeholders in ARD programmes are researchers in low-income countries and in the North. Involving just this group in designing the monitoring system would be appropriate for certain aspects (like capacity development), while for others (e.g. impact at grassroots level) it might provide a biased picture.

The above scheme is valid especially for Transnational Programmes at programme and project level. For Coordinating Programmes, monitoring at component level will be pre-defined in most cases to satisfy the requirements of the different countries implementing them. Monitoring at programme level should restrict itself to a synthesis of the monitoring information at component level and an annual review meeting of the stakeholders.



4 Evaluation

4.1 Purpose of evaluation

Activities during the evaluation phase aim to determine “the relevance and fulfilment of objectives, developmental efficiency, effectiveness, impact and sustainability” (EC, 2004) of both ARD programmes and projects. The evaluation activity is carried out at specific stages of implementation. It is recommended that for programmes, at least a mid-term evaluation and a final evaluation be carried out. For projects, a final evaluation should normally be enough (especially if their duration is three years or less). Many of the statements in this chapter address the project level. For programmes, with their higher level of aggregation, similar principles are usually applicable, but with less detail. For instance, the team evaluating an ARD programme will be able to visit field teams and talk to farmers only in a few selected sites among all those where the programme has activities.

The programme or - in certain cases (see section 3.1) – the project Steering Committee (SC) is the main beneficiary of the evaluation activity, but should also be responsible for its preparation. In particular, the SC should ask the Programme management to provide for a preliminary internal evaluation. On the basis of the results of the preliminary evaluation the SC should prepare appropriate Terms of Reference for the Evaluation.

The implementation of the evaluation should be totally independent of the project or programme and entrusted to an independent expert team.

The expected results of the evaluation activity can be summarised as follows:

- It helps the SC to orient the ARD activity and adjust the planning tools to changing circumstances
- It enables the SC to assess the scientific quality and relevance of the results achieved
- It supports all the ARD partners involved in capitalising on the lessons learned
- The SC and the Management can better identify training and dissemination needs
- Policy makers are supported in defining research, dissemination and training policy
- All parties involved receive inputs for planning new ARD programmes or projects

4.2 The different aspects of an evaluation

The results of the evaluation are achieved by implementing specific activities aimed at analysing the following aspects: relevance, efficiency, effectiveness, impact and sustainability.

Relevance

Relevance refers to the appropriateness of the objectives of the ARD initiative to the problems that it is supposed to address, and to the physical and policy environment within which it operates. It includes the assessment of the quality of project preparation and design.

The relevance of the ARD initiative design can be usefully assessed answering the following questions:

- To what extent were the local communities, the beneficiaries and the recipient institutions involved in the identification of the problems to be addressed by the ARD initiative?
- To what extent are the planning tools, the design and the strategy coherent with the problems identified?
- To what extent is the design of the ARD project based on a complete appreciation (documentation) of the existing knowledge on the subject addresses and the state of the art of the scientific research?



- What preliminary research has been carried out for avoiding duplication of efforts, repetition of mistakes or overlapping with similar research programmes already under implementation?
- What measures have been foreseen for promoting the exchange of information and networking with similar research projects?
- How accurate, logical and complete are the planning documents?
- The Logical Framework in particular should always include, per each expected result, a complete list of activities and a set of appropriate verifiable indicators, in order to facilitate both the monitoring activity and the evaluation. The accountancy system should also be coherent with the planning documents and with the Logframe in particular. If the accountancy structure clearly reflects the planned activities and allocation of funds, the auditing activity will also be facilitated and the entire management will appear more transparent.
- To what extent does the design of the ARD project address crucial cross-cutting issues such as: gender equality, environment, ownership, poverty reduction?
- If the Logframe explicitly details the activities expected to be carried out, the appreciation of the extent to which the cross cutting issues are considered in the Programme/project implementation is immediate and only a limited number of specific investigations are requested during the evaluation exercise.
- Is the project coherent with the political priorities of both the EU and beneficiary countries?

Input for the Steering Committee. Depending on the result of a “relevance evaluation,” the Steering Committee can decide to revise the design of the entire project or programme, to adjust the Logical Framework or reorient the implementation strategy.

Revising planning tools is not necessarily a dramatic decision, but an almost normal practice during the implementation phase for adjusting implementation to changing circumstances.

Efficiency

Efficiency refers to the question of the extent to which the use of the resources available is optimised by the project management.

An efficiency evaluation is aimed at assessing the way all the resources involved in the implementation are actually allocated and managed, in particular:

- *Funds* (financial resources): “efficiency evaluation” must not be confused with auditing³. The purpose of assessing the financial efficiency of a Programme/project is to determine whether the cost of each activity implemented in a due period of time (as detailed in the Logframe and reflected in the Programme/project budget) is consistent with the budget and if the expenditure is justified by the value and quality of each activity output. The latter exercise can be particularly difficult when assessing the output of scientific activities. The concept of financial efficiency in business development plans is based on the assessment of the discounted present value of a flow of net benefits deriving from the difference between an expected flow of outputs and a predictable flow of costs in a pre-determined period of time. In business planning all the factors involved (investment costs, running costs, benefits, discount rate and time) are generally predictable within a reasonable range of hypotheses or scenarios. This is not the same in scientific research (including applied research). Budgeting scientific research can easily be based on a defined amount of funds available but this

³ Auditing: “Assessment of (i) the legality and regularity of project expenditure and income i.e. compliance with laws and regulations and with applicable contractual rules and criteria; (ii) whether project funds have been used efficiently and economically i.e. in accordance with sound financial management;; and (iii) whether project funds have been used effectively i.e. for purposes intended”.



can hardly account for an optimum ratio between the expected quality (value) of a scientific activity output, expenditure and time factor.

Assessing the real value of scientific results can be almost impossible before these are applied in a reasonable number of cases and measurable effects are available and comparable to costs. Therefore it is not wrong to say that the financial “efficiency” of an ARD Programme/project can be definitively appreciated only after its impact evaluation.

The same consideration can be valid with reference to each ARD activity output.

In order to avoid any premature and subjective evaluation of ARD management efficiency, it is recommended to limit the financial efficiency evaluation to the consistency between the planned activities and the corresponding financing available. For example: if one of the planned activities was the implementation of a number of experimental plots at a pre-determined cost, the “efficiency evaluation” should be focused on the consistency of the technical realisation of the plots (number of plots, size, ...) with the planned resources and not on the results obtained.

- *Staff (human resources) allocation and management.* Human resource recruitment and allocation is a crucial issue in ARD management. A regular screening of staff academic/professional expertise is recommended with reference to the planned and actual requirements.
- *Use of physical resources* (technical and environmental resources, including water, land, machinery, scientific instruments, etc.). Underuse or misuse of physical resources reflects inefficient management. Waste or underutilisation of natural resources is not compatible with the basic ethic principles of ARD. Technical means exceeding the research requirements can be replaced with occasional hired services according to need.
- *Respect of time schedule.* Due to the unpredictability of scientific results, assessing efficiency in time management can be difficult and subject to personal opinions (see also effectiveness evaluation). This exercise should be mainly focused on non-strictly-scientific activities such as procurement, contracting, logistics arrangements, internal operational planning, etc.

During the efficiency evaluation, the evaluators should also answer the following questions:

- To what extent does the management provide for regular internal communication between the different components of the ARD programme or project?
- To what extent has ARD management established a regular flow of information with all the external partners involved?

The above questions are strictly related to “efficiency” and represent an indirect way to evaluate the kinds of measures ARD management has taken for preventing poor use, misuse or underuse of the resources available.

Input for the Steering Committee. On the basis of the efficiency evaluation the Steering Committee may decide to recommend the necessary managerial and administrative improvements or even a change in managerial staff.

In some case an adjustment of the Logical Framework could be necessary. If, for example, the efficiency evaluation highlights that one or more activities are not suitable for achieving the expected results, it is advisable that the SC ask for a revision of the Logframe.

Effectiveness

Effectiveness addresses the question of the extent to which the expected results are being achieved and to what extent these are contributing to the achievement of the project purpose.

The detailed definition of the “expected results” must be contained in the Logical Framework of the ARD project along with an appropriate set of indicators (see above, this section).



The definition of the expected results can be a delicate exercise in ARD planning. Unpredictability and uncertainty of results is almost normal in scientific research and their on-going re-definition may often be necessary due to unexpected findings or the adjustment of the working method.

Sometimes “no results” or unexpected results can be excellent results, but, if they are not consistent with what the Logframe sets out, they could be wrongly evaluated. Defining too detailed, ambitious or pre-determined results can mislead the entire planning process as well as the evaluation activity.

The way the results are formulated is consequently crucial to permit sound monitoring and evaluation activity. In principle, ARD results should be formulated as “research processes activated in a defined period of time” or “alternative options for agricultural production identified and tested in a defined period of time”. On the contrary, definitions such as “highly productive and profitable farming technique identified” should be strictly avoided.

The main questions that an “effectiveness evaluation” should answer can be summarised as follows:

- Are the results achieved consistent with planned results?
- What are the relevance and the effectiveness of the scientific results with respect to the problems addressed by the ARD project?
- What side effects or unexpected results (if any) were found during the experimental activity? If any were found, how were they addressed?
- Was there any research method reorientation in the period under evaluation due to unexpected findings or rethinking of planned investigation strategy?
- Have the results achieved been validated by any external (independent) scientific assessment?
- Have the local community and/or the beneficiaries been involved in the validation of results?
- Are the results achieved a suitable basis for further investigations?

Input for the Steering Committee. The output of the effectiveness evaluation enables the Steering Committee to take decisions for:

- (In case of a mid-term evaluation) adjusting the Logical Framework of the ARD programme. In this case the adjustments may concern the (i) definition of results, (ii) results indicators, (iii) identification and description of the activities related to the changed results
- Identifying mitigation measures, in case undesired effects are produced along with the results;
- Identifying possible needs for extra allocation of funds, in case the effectiveness evaluation demonstrates that poor results have been achieved, due to unsuitable budget allocation.
- Stimulating the involvement of the beneficiaries and the main partners involved in validating the results. Mid-term results (if not consolidated) should be validated by a very restricted number of partners and not necessarily be divulged.

Impact

Impact refers to the question of the extent to which the output - i.e. all the results contributing to the achievement of the specific objective - actually contributes to the fulfilment of the overall objectives.

The term “impact” identifies the consequences of the ARD project’s or programme’s output on the beneficiaries (or target group if any), the institutions involved and all the stakeholders in general. Evaluating the impact of an ARD programme or project can be almost impossible



during the implementation phase and can hardly be assessed at the end. The real impact of an ARD programme can be reasonably assessed only through an ex-post evaluation.

Nevertheless, both during the mid-term and the final evaluation, a preliminary assessment of possible impacts produced by the ARD activity can be carried out. This preliminary assessment will examine changes in relation to the situation at the time of the baseline survey (section 5.3)

At the mid-term stage, the following questions can help evaluate preliminary impacts (*Mid-term impact evaluation*):

- Did systematic involvement of beneficiaries in research activity produce any verifiable increase in their consciousness and willingness to participate and share experiences?
- Are the institutions concerned increasing their capability by participating in the project?
- To what extent are local or national policy makers aware of the project and its cause? Did they ever give tangible evidence of their willingness to incorporate the issues addressed by the project into the local or national political agenda?
- Did undesired or unexpected side-effects produce any delay in the project agenda due to negative reactions from any of the partners involved?
- If any preliminary result of the research activity was divulged by the media, what were the reactions (feedback) from both the scientific *milieu* and other groups concerned?

The mid-term evaluation can thereby draw on information generated by the participatory impact monitoring (outlined in section 5.3).

At the end of the ARD project or programme, the list of questions above should be complemented by the following (*Final impact evaluation*):

- Is there a general consensus among all the partners concerned about the value, the utility and the sustainability of the results?
- Are the public or private extension service institutions aware of the results achieved and ready to incorporate them into their agenda?
- Did the final results stimulate the development of new research project proposals?
- If any preliminary on-farm application of the research output already exists, is there any measurable impact at beneficiary level? If yes, what kind of impact?
- Is the output expected to produce any kind of environmental impact? If yes, what kind of impact and which mitigation measures have been identified for negative impact?
- To what extent have the research partners been giving policy advice at national or international level?
- What outputs (contributions in conferences, publications) did the research partners targeted with capacity development by the programme (equipment, training, networking etc.) produce and how was capacity development essential for these outputs?
- Which findings or results have found their way to the wider public through the mass media (press, radio, television, fairs, exhibitions etc.)?

The evaluation team will have access at this time to the end-of-project impact assessment (section 5.5).

Input for the Steering Committee. The impact evaluation can yield crucial information about the future of the research activity. The ARD programming activity should be based on the lessons learnt from previous experience and the impact evaluation is the main source of information.

On the basis of the mid-term impact evaluation, the SC can decide to ask for a reorientation of the planning documents or for the promotion of complementary actions, e.g. in communication, information campaign, promotion of institutional partnerships, etc.

The final impact evaluation is the main input for the SC for:

- Outlining the guidelines for the dissemination of the results



- Recommending mitigation measures to deal with possible side-effects
- Preparing medium and long-term planning documents concerning ARD activity (ARD programming)

Sustainability

The concept of “sustainability” has been developed with reference to the results of a development project, i.e. to what extent the initiatives implemented by a Development Project can be economically, socially, and institutionally self-sustainable in the long run.

The concept is not applicable as such to agricultural research because its expected outcome is (in a very broad sense) that of providing new alternative farming options without being necessarily involved in the widespread dissemination of new production techniques or organisational patterns.

Therefore, evaluating the sustainability of results of ARD programmes and projects should mainly focus on appreciating to what extent the existing institutional, social and economic context is conducive to the dissemination and application of the achieved results.

The following questions can be taken as an indicative checklist:

- To what extent can the output of the ARD project be made available to beneficiaries at viable conditions and affordable price?
- Is the transfer of know-how managed by self-sustainable (independent) institutions?
- Are beneficiaries’ associations involved in the dissemination of results?
- Are there appropriate initiatives for promoting the beneficiaries’ ownership of the ARD results?
- Are the ARD results subject to any Intellectual Property Right (WTO Trip Agreement) or any other legal constraint that may limit free access to its use/application?
- Did the research and management procedures or practices of the research partners improve?
- How did research partners in low-income countries upgrade their formal academic education in the course of the programme?
- Did research partners improve their networking at national, regional and international level?

Input for the Steering Committee. In many circumstances the SC has little role in improving the sustainability of ARD results and the major role is played by the public institutions and private organizations responsible for dissemination. The SC can put pressure on policy makers for promoting the most appropriate legal framework and creating a conducive, political environment for making new technology and organisational options available to farmers.

4.3 Evaluation and its relation to planning and monitoring

Identification of efficiency, effectiveness and impact indicators

Identification of the most appropriate efficiency, effectiveness and impact indicators is made at planning level. Throughout the evaluation phase a revision of the matrix of indicators or a reorientation of the planning documents can be made according to proved needs and monitoring results.



The indicators must be (**SMART**):

- **S**pecific to the objective they are supposed to measure
- **M**easurable (either quantitatively or qualitatively)
- **A**vailable at an acceptable cost
- **R**elevant to the information needs of managers
- **T**ime-bound – so we know when we can expect the objective/target to be achieved

The efficiency indicators are related to the implementation of the project activities. The main sources of information are the project accountants, internal progress reports, and other administrative and managerial records. The selection of the indicators must be coherent with the activities programmed in the Logical Framework and easily expressed in quantitative terms.

The effectiveness indicators are related to the tangible results achieved by the project, (verifiable progress in scientific investigations, on-farm demonstration/pilot actions, dissemination of results, if foreseen in the initial planning documents). As already mentioned with respect to the effectiveness evaluation, the intrinsic uncertainty of ARD activities suggests avoiding detailed, ambitious or pre-determined results. The indicators must be coherent with the expected results and strictly related to quantitative values.

The “effectiveness indicators” as a whole measure the achievement of the specific objective of the ARD project. The specific objective focuses on addressing the main problems identified during the identification phase of the Management Cycle. Thus, all the effectiveness indicators should be related to the problems identified and compared to a matrix of indicators expressing the existing situation before the project’s start. The problems identified during the analysis of the existing situation should be clearly described and organised in a **baseline**⁴.

The impact indicators should be related to the *overall problems* that the project intends to help solve.

It is important to consider that an ARD project must be responsible for disseminating its results to the scientific community, the main national and international institutions concerned, and the local partners.

Nevertheless, the responsibility of spreading innovative farming options (i.e.: farming techniques, varieties, organisational patterns, etc.) relays on the extension services, the agricultural development projects, or the beneficiaries’ organisations. So, the basic goal in selecting the impact indicators of an ARD project should be to ascertain to what extent the innovations developed by the ARD project are being incorporated into the agenda of the dissemination agencies.

Aside from having impacts on poor people’s livelihood, ARD also produces scientific outputs. ARD research is interdisciplinary by nature and some scientists have in the past been discouraged from becoming involved in ARD by the obstacles to peer-reviewed publishing, as most scientific journals are disciplinary within either the social science or natural sciences sphere. However, a number of international peer-reviewed journals that cater for interdisciplinary research activities on ARD exist, including:

- Agricultural Systems
- Agriculture and Human Values
- Experimental Agriculture
- European Journal of Agricultural Education and Extension
- Journal of the Science of Food and Agriculture

⁴ Not only scientific issues should be described in the identification phase, but also the environmental, social, economic and institutional problems related to the focal problem identified.



4.4 Selecting the appropriate type and time of the evaluation

The evaluation activities can be distinguished according to the “type” and the “time” they are carried out.

The following *types* of evaluation are commonly recognised:

- The monitoring activity (see sections 3.2, 3.3, 3.4) is carried out by the ARD staff, and is based on the data collected by the internal staff. It is generally aimed at supporting the management in determining whether the project is “on-track” or “off-track” with reference to the planning documents. The internal monitoring activity should feed the management with enough information for orienting day-by-day decisions and - when necessary - ask for support from the Steering Committee.
- The external review is an independent evaluation carried out by experts not belonging to the staff and possibly not involved in the initial identification and formulation activity. The terms of reference of the evaluation mission should be prepared by the Steering Committee on the basis of a preliminary identification of the most critical points carried out by the same SC. An example of such TORs is the EC’s TOR for the monitoring of its CGIAR projects (EC, 2005)
- The peer review is a particular type of “crossed” evaluation. The staff of an ARD project is asked to evaluate a similar project in order to compare experience and share solutions to common problems. According to experience, the “peer review” can give positive results only on the basis of reciprocity.
- Self-evaluation: each staff member of an ARD project should be regularly asked to evaluate if she/he feels that the working environment (in a broad sense) is the most appropriate for accomplishing the tasks assigned and if her/his professional/scientific profile is fully consistent with the assignment. A personal evaluation of both training and logistic needs should also be included in the self-evaluation. The opportunity to involve the staff in the on-going evaluation of the ARD project as a whole should be considered very carefully.

On-going and final evaluations:

- A mid-term independent evaluation is strongly recommended, at least at programme level. It is necessary to adjust the work plan and draw the attention of the Steering Committee to possible needs for extra funds, changes in management staff, or any other re-orientation requirement.
- The final evaluation is mainly aimed at identifying the lessons learnt and elaborating concepts for new ARD initiatives. The final evaluation should be carried out by both the internal staff (at the end of the monitoring activity) and by an independent mission prepared by the Steering Committee and performed by an external interdisciplinary team.
- Ex-post evaluation should be carried out after the ARD programme arrived at its end and tangible effects are evident and measurable. If the time elapsed after the programme’s end is too short, the ex post evaluation will be too close to the final evaluation. If too long, a lot of factors not directly depending on the ARD programme could influence the evaluation and result in analysis coming to the wrong conclusions. Determination of the right time for an ex-post evaluation is consequently a delicate exercise, varying from case to case.



5 Impact assessment

5.1 Introduction to impact monitoring and assessment methodology

Within the past two decades, impact monitoring and assessment of development assistance have been improved and systematised. While inputs, outputs and immediate outcomes have become standard elements in monitoring and evaluation of aid programs, there has been relatively little focus on impact. Impact monitoring and assessment of ARD has a two-fold objective:

- (i) to document the impact of research (thereby improving accountability to national governments and taxpayers); and
- (ii) to influence the on-going and future research agenda through accelerated feedback loops and mutual learning. A recent concise definition of impact assessment is: 'Impact assessment is the systematic analysis of the lasting or significant changes – positive or negative, intended or unintended – in people's lives brought about by a given action or series of actions' (Roche 1999:21).

Hulme (2000) refers to these two objectives as “**Proving** impacts” (measuring as accurately as possible the impact of an intervention) and “**Improving** practices” (understanding the processes of intervention and their impacts so as to improve those processes).

The majority of impact assessments of ARD have in the past been carried out within the CGIAR (EIARD 2000a; 2000b). The agenda for such impact assessments has gradually expanded, as illustrated in Table 9. Impact assessments in the early days were narrowly focused on adoption rates and technological development in the field. Over the past two decades additional elements have gradually been added to the impact assessment agenda, with an increasing focus on the well-being impact for beneficiaries. The evaluation of impacts of research partnerships only recently became the focus of specific studies (Maselli et al, 2004).

Table 9: Expanding agenda of impact assessment in agricultural research for development

1970 ->	Germplasm adoption
1975 ->	Effects of crop management research
1980 ->	Returns to research
1980 ->	Equity consequences
1985 ->	Spill-over effects
1985 ->	Sectorial linkages
1990 ->	Gender
1990 ->	Environment
2000 ->	Empowerment

Source: Adapted from Pingali 2001.

One may distinguish between three types of impact assessments (Box 2). These can partly be viewed as historical phases, but all three types are practiced today in various combinations.

Box 2: Three approaches to impact assessment of agricultural research for development

(Adapted from Folke and Nielsen 2006, and papers presented at 2nd CGIAR workshop on impact assessment at CIMMYT October 2005)

Effect evaluations. This approach was the dominant approach in the past. Its point of departure is positivist and its techniques inspired by natural science. It aims to establish objective explanations of the relationship between intervention and effect. To do this, effect evaluations make use of *ceteris paribus* assumptions to isolate the effects of studied interventions. The advantage of this approach is its rigorous methodological framework, which allows the evaluator to carry out what is seen as an



objective assessment using measurable indicators. The inherent problem of effect evaluations is that *ceteris paribus* assumptions have repeatedly been shown not to hold. This has increasingly led donor agencies and research organisations to search for more comprehensive and credible approaches.

Participatory impact assessment studies have gradually gained popularity over the past 15 years as an alternative to effect evaluations. This approach involves the target group in all the phases of impact monitoring and assessment: Designing targets and indicators, collecting data, analysing them and drawing conclusions. Participatory impact monitoring and assessments vary in design, but have in common that the intended beneficiaries are a decisive voice and their views are highly valued. All stakeholders are directly involved in participatory impact monitoring and assessments, often facilitated by an external consultant. The strength of this methodology lies in its focus on the views of intended beneficiaries, who are supposed to know best how an intervention affects them. It is an evolving methodology that has yet to find its final format. One weakness is that subjective views are inherently difficult to aggregate and give rise to problems of scale, e.g. difficulties in generalizing impact assessment results. Social scientists have criticised the participatory impact assessment approach as being weak when it comes to assessment of conflicts (within local communities), as local people refrain from discussing contested issues openly with external evaluators. Economists have recently argued that participatory impact monitoring and assessment approaches are more costly than effect evaluations and have questioned their cost effectiveness – prompting proponents to search for more cost-effectiveness ways of stakeholder involvement.

Contextual impact assessment studies is a heterogeneous category of social science research-based studies involving extensive fieldwork. These studies emphasise analysis of the socio-economic and political context and view intervention as one among several factors resulting in a particular development impact. Contextual impact assessment studies aim to reveal intended as well as unintended consequences of an intervention. These studies have shown how to uncover relationships between context, intervention, development process and impact. This approach can be characterised as a successful way of using social science research methods in a pragmatic and cost-effective way to assess impact of development and research interventions. Their weakness is that they still tend to be expensive, as they require 3-4 months of fieldwork for major project. Such impact assessments are often carried out post-ante by a highly qualified external social scientist.

The impact monitoring and assessment methodology for the ARD programmes to be developed has to be tailor-made to match the chosen research focus and socioeconomic context of beneficiaries. It is, however, clear that a combination of quantitative and qualitative methods will be relevant. Benefits from ARD will have the combined effects of a range of outputs and outcomes, many of which are likely to involve various forms of capacity building.

Section 2.2 identified the attribution gap as a major methodological problem for impact monitoring and assessment. Other methodological challenges that have been highlighted are the lack of counterfactual conditions, long-time lags, and indirect effects (Henderson, 2001; Späth, 2004). Many impact assessments (in particular effect evaluations) have in the past 'solved' the attribution gap by using assumptions as a way of isolating the effect of the studied intervention. However, experience has shown that these assumptions seldom hold true.

Monitoring systems can register that certain inputs are provided and outputs produced, and we can observe that changes occur. However, the extent to which the registered changes are a result of the interventions will always be a matter of interpretation. Development and change are driven by both, external project intervention/research, and a host of other social dynamics and activities in any given area. Further, impact will depend on how the beneficiaries respond to the new opportunities provided by the intervention.

Two main approaches are used in impact assessment of development interventions and ARD: (i) before/after studies; and (ii) counter-factual analysis. The before/after study is the preferable approach, in which a baseline study is carried out at the onset of an ARD programme and then compared with the situation at project completion or later. The changes that have occurred in relation to the project objectives form the basis for an assessment of the effects. The counter-factual analysis is carried out in situations where no baseline study was carried out. In this case, a with/without study serves as an alternative. In a counter-



factual study, the project's target group is compared with a control group, which is as similar as possible to the target group, whereby the difference between the two is that only one has been influenced by the project.

Conventional agricultural research often takes considerable time to mature in the form of released technologies, and even longer before such technologies are offered by service providers and adopted by farmers. Possible impacts of agricultural research have therefore tended to occur with a considerable time lag. Cumbersome impact methodologies have further increased the time gap between research implementation and the documentation of its development impact. It is, however, a myth that this has to be so. Participatory ARD and newer impact assessment methodologies that are an integral part of the research process have dramatically reduced this time gap (EIARD 2003b; SPIA 2006; CGIAR 2006; Sutherland et al. 2001).

5.2 Impact monitoring and assessment methodology for ARD programmes

There are compelling reasons to make impact monitoring and assessment an important and integral element in an ARD programme (EIARD, 2003a). The most obvious reason for a strong impact monitoring and assessment system is that initiating development among poor farmers is a very difficult task. Access to relevant information of high quality, and dynamic research management that is able to analyse and use such information, are required to adjust research activities and mitigate unexpected obstacles.

Impact monitoring serves as the mechanism through which project management, staff and the wider group of stakeholders and beneficiaries can keep informed about the extent to which the project conforms to the impact chain perceived during the planning phase. Impact monitoring also provides essential information for end-of-programme impact assessment, as well as for mid-term evaluation, end-of-project, and *ex-post* evaluation.

The end-of-project impact assessment is the methodology by which the actual impact of the ARD programme will be measured. This serves the dual purpose of documenting the impact of the ARD project to its external donors and understanding the effectiveness of the research methodology for the benefit of future ARD programs.

The proposed impact monitoring and assessment methodology for ARD draws on existing cutting edge methodologies that have already proven successful (Herweg and Steiner 2002, Ravnborg, et al. 2004, Folke and Nielsen, 2006) and comprise three tasks/groups of activities: (i) baseline survey; (ii) impact monitoring; and (iii) end-of project impact assessment. In the following three sections, these methodologies are described in more detail and the organisational roles and responsibilities for implementing them as part of an ARD project are discussed.

5.3 Baseline survey

The proposed baseline survey serves the dual purpose of

- (i) providing ARD project management, research staff and stakeholders with relevant information about the context under which the rural producers operate and social characteristics of the intended beneficiaries, and
- (ii) providing a starting point in relation to which a later impact assessment can measure changes. The baseline survey has two components: a qualitative well-being ranking exercise and a quantitative household questionnaire survey.

Well-being ranking will be done on the basis of inquiry into local perceptions of poverty (and well-being, its antithesis) within the ARD project area. It is proposed to use a methodology



first developed by CIAT in 1999 and later refined by the Danish Institute for International Studies in collaboration with Makerere University in Uganda (Box 3).

Box 3: Well-being ranking methodology (Source: Ravnborg et al 2004)

Well-being ranking comprises a four-step process. Multidimensional poverty and gender well-being indicators are identified by farmers through a qualitative inquiry carried out among key informants in stratified selected communities. The indicators are thereafter extrapolated within the project area and tested statistically for representativeness and expressed in the form of a quantitative poverty index. This poverty index is made up of a number of well-being indicators, which together comprise an expression of poverty. On the basis of the well-being indicators, a questionnaire is developed and administered among households using random sampling. The result from the household questionnaire is analysed using SPSS statistical software.

This approach enables the ARD project to differentiate between the 'better off', the 'less poor' and the 'poorest' households in a given area according to a number of dimensions that local people themselves identify as important when describing poverty and well-being in their communities. In addition, it reveals aspects of equality and inequality in gender relations within the household. Based on women's own perceptions of their well-being, three levels of equality in gender relations can be distinguished and related to household poverty.

Baseline questionnaire surveys have in the past tended to generate large volumes of information that has only been partially useful for the project. To avoid such a situation, the design of the baseline questionnaire will be guided by (i) impact monitoring indicators developed by stakeholder workshops during the project start-up (as outlined in section 2.4), and (ii) well-being indicators developed during the well-being ranking exercise. A European social science institute, in collaboration with a local university, will carry out the baseline household questionnaire survey.

The proposed baseline survey methodology provides a basis for analysing the outcomes, including behavioural changes, achieved through various development interventions. It can be related to poverty levels, gender relations and differences between different geographical units.

5.4 Participatory impact monitoring

Impact monitoring serves as the mechanism through which the ARD programmes and projects collect and exchange information among their staff and use this information in a collective learning process among all stakeholders involved in the programme.

Two forms of information will periodically be recorded as part of impact monitoring: (i) data required by the impact monitoring indicators; and (ii) information that relates to capacity building within the collaborating developing country institutions.

The roles and responsibilities in data collection and processing will depend on the concrete content and composition of the ARD programme. The principle of subsidiarity will apply as a general rule, e.g. data should be collected at the lowest appropriate level. Pragmatic solutions will be sought with the aim of minimising the costs in terms of financial and human resources, e.g. researchers, research assistants or stakeholders, including the intended beneficiaries as appropriate, will collect data periodically. This will be done as an add-on activity in connection with on-going research activities.

The management of the ARD programme will facilitate compilation and timely analysis of the collected data and its presentation at the annual research workshops. The workshop participants will discuss the annual impact monitoring reports and review progress in comparison with the impact chain as it was perceived during the planning phase.



Impact monitoring also provides essential information for end-of-programme impact assessment, as well as for mid-term evaluation and ex-post evaluation.

5.5 ARD end-of-programme impact assessment

During the last six months of the ARD programme, an end-of-programme impact assessment will be implemented. The impact assessment will be carried out using methodologies developed within the tradition of contextual impact studies (see Figure 3).

A European social science research institute will carry out qualitative fieldwork in cooperation with social scientists from a collaborating developing country university. The focus will be on identifying changes within the social, cultural, economic and political context of the beneficiaries. This study will aim to achieve an understanding of the causes and effects of identified changes, not necessarily brought about by the ARD programme, but by the efforts of beneficiaries interacting with the international, national and local contexts and various external development interventions.

The qualitative inquiry will be combined with a quantitative household questionnaire survey. Applying the before/after approach, this survey will re-interview the households that took part in the baseline survey, using an adapted version of the original questionnaire.

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42, rue Scheffer • F 75016 PARIS

tel: +33.(0)1.53.70.20.03

fax: +33.(0)1.53.70.21.56

email: info@era-ard.org



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