
Review of Danida Funded Research in Agriculture and Natural Resources

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Executive Summary

This report is the conclusion of a participatory review of the overall development research effort in Denmark. Five crosscutting items provided a guide: the ‘cosiness’ factor; feeding the ‘voice of the poor’ into research process; monitoring and milestones; priority setting and research frames; and determination of research quality.

Since most people in poor countries are still rural, agricultural production, food security, and poverty are closely linked. The poor have few assets. They require innovations – from farming to marketing, processing and consumption – which enable them to use those assets (often mainly labour) more effectively and in a sustainable way to improve their livelihoods. The same need for fruitful interaction between academia, government, and industry, which has led to the technology explosion in the wealthy parts of the globe, is needed in the developing world.

Some two thirds of the funds provided explicitly for research by Danida are used for purposes over which the agency has little direct influence. There is an evident lack of cohesion between Danida priorities and the uses for which research funds are being used. Effectively, Danida staff provide notice of ‘no objection’ to any particular research proposal rather than a positive endorsement. Danida staff and researchers are dissatisfied with the present system.

There is a very serious communication problem between several key players in the development research process. In Denmark, farmers and consumers are well linked to the research community through an efficient network of farm advisors which has created an appropriate balance between specialised research and broader applied work. In development research, such linkages are weaker resulting in less clarity in the research focus.

The team was impressed by the enthusiasm for much of the Danish research community to become involved in new areas and to contribute to the overall knowledge base for the international agenda. Key features of successful activities included small, charismatic leadership, good linkages with the poor in developing countries, an absence of bureaucracy in programme development and implementation, and their ability to adapt quickly and effectively to new issues and problems.

Looking to the future, the developing world will require long term scientific and technical support. While every effort needs to be made to build capacity (both human and institutional) in the developing world, capacity building *on its own* will not be adequate to create the necessary change. Danish development assistance needs to recruit and retain experienced and skilled Danish scientists to make a consistent and long term contribution to problem solving in developing countries.

Monitoring and evaluation can be strengthened to the benefit of all. Danida does invest significant effort in undertaking evaluations of ongoing research projects. While these reviews are comprehensive in terms of detailing activities undertaken during the project, few are particularly analytical and provide little guidance for learning from the work undertaken.

The recommendations which follow are offered primarily to address the process of bringing policy, research, and development implementation closer together – but without stifling innovation, creativity, and the wise use of skills within the Danish resource base. Because of the central role of improving the funding mechanisms, the recommendations reach beyond the strict bounds of agriculture and natural resources.

Recommendation 1: The key role and function of research as part of the necessary operation of development aid needs to be restated and clarified. Danida from the highest management level should reiterate its commitment to research in support of development aid. Without the fulfilment of this recommendation, subsequent recommendations are unlikely to lead to the necessary reforms being implemented.

Recommendation 2: Research Administration; all stakeholders must jointly sort out the administration of research. The review team felt that there is confusion and complexity in the sources of funding, the procedures for application and the means of review. The current structure has largely grown organically as new needs have arisen or been perceived. The development research effort has grown to the point that it requires a new streamlined structure which is both efficient and open. Importantly, this requires that RUF be disbanded and its functions incorporated within the new structure proposed.

Recommendation 3: A series of thematic workshops should be convened by NETARD to agree upon priorities for development research in agriculture and natural resources within the context of Danish aid over the next decade. The goals of these workshops would be to involve all stakeholders in Danish development research in agreeing upon or adapting the recommendations in this report, to create a shared vision of research priorities for research, and to organise the publication of a comprehensive set of development research guidelines (see Recommendation 5).

Recommendation 4: Appropriate administrative and monitoring mechanisms need to be in place. In order to tie research much more closely to Danish development policy and to facilitate the process of learning from research outputs, there needs to be set in place appropriate administrative and monitoring mechanisms that guide the initial development of the research ideas and follow through to the delivery of outputs to the right clients in the right form.

Recommendation 5: A document is produced with the (illustrative) title of “Guidelines for the Preparation of Research Proposals for Danish Development Aid Funding”.

Recommendation 6: Rethinking the issue of *quality* development research. The absence of any real national consensus on what constitutes development research and how (and what) quality criteria are appropriate under varying circumstances creates an unproductive environment in which researchers and development practitioners are continually pulling in different directions.

Recommendation 7: Broadening the skill base. Opportunities need to be created to encourage late comers to the development research process to enter the field.

1. Terms of Reference & Approach to the Review

Terms of Reference

The agricultural and natural resources specialist team was requested to:

- Prepare an overview of Danida-funded development research in the fields of agriculture and natural resources. In addition to a mapping exercise, the team was expected to point out particular features which characterise the field, such as diversity of interests, continuity and stability, national and international linkages to other research environments, linkages to development agencies, the importance of interdisciplinary approaches etc.

To the extent possible, the volume and quality of the research output should be described and assessed, e.g. with reference to internationally acknowledged publications and procedures for quality assurance.

- Assess the relationship between Danish development research and the ‘mainstream’ national research agenda within the field of agriculture and natural resources. A main issue to be examined was the extent to which development-related research is seen as an integral component of the national research agenda (and, by extension, how this is reflected in organisational and financial terms).
- Assess the contribution of Danish development research to the international research effort in agriculture and natural resources with specific reference to the comparative advantages that Danish institutes may bring to the overall effort.
- Assess the ability of the overall Danish development research effort in agriculture and natural resources to adapt to new and emerging issues, and to modify the research agenda appropriately both in terms of international and developing country priorities.
- Assess the upstream administrative and institutional arrangements and structures and their influence on the quality and focus of the research into agricultural and natural resource issues.
- Assess the impact of Danish development research in agriculture and natural resources in terms of building of long term capacity in Denmark, its impact on Danida’s work and priorities and its contribution to increase the capacity of partner countries to address priority constraints in the sector.

The team was asked to prepare a report containing:

- The review and assessment of the team with respect to the quality and relevance of Danish development research in the fields of agriculture and natural resources.
- A discussion of issues arising from the review with regard to options, opportunities and priorities for future Danida support to development research in Denmark.

Approach and Methodology

Review of Written Material

The team undertook a review of written material published from development institutions and agencies in Denmark. A list of material reviewed is included as Annex 2 of this report.

An important focus of the review of written material was the various policy documents developed by the Danish government which form the basis of development assistance policy. Five central documents were used to guide the review (each document is numbered in brackets below and is referred to elsewhere in the text by that number):

- Danish Agricultural Research for Development, May 2000 (Policy Document #1)
- Strategy for Danish Environmental Assistance, July 1996, Ministry of Foreign Affairs and Ministry of Environment and Energy (Policy Document #2)
- Agriculture: Danida Sector Policies, October 1996, Ministry of Foreign Affairs, (Policy Document #3)
- Denmark's Development Policy: *Partnership 2000*. Ministry of Foreign Affairs, 2000. (Policy Document #4)
- The Role of Research in Danish Development Assistance. Ministry of Foreign Affairs, May 2000. (Policy Document #5).¹

From each document, salient policy points were extracted for each of the terms of reference. These policy points were used to guide the review of written material and the field visits and interviews. In the text which follows, the appropriate policy points are presented in relation to each term of reference. The report recommendations are consolidated in a final section to the report. Key factors which have contributed to the development of these recommendations are highlighted in bold in sections of the report.

Questionnaire

A questionnaire was sent to all major development research institutes to help the team evaluate their strategy and objectives with respect to development research. Details of the questionnaire are found in Annex 1.

Field Visits

In collaboration with the Network for Agricultural Research and Development (NETARD), a visit programme to Denmark was planned for November, 2000. This visit was intended to include in depth interviews with as many of the participants in development research (funding agencies as well as researchers). Unfortunately the resources available to the team did not allow for input from developing country partners. A meeting was arranged with researchers from developing countries that were in Denmark during the period of the field visit to solicit their views. In addition, particular note was taken of information from developing country partners included in the reviews and other written materials provided to the team.

Primary Crosscutting Issues

The field visits and interviews were not planned as formal reviews of individual projects but rather to determine the overall quality and focus of the development research focus of participating institutions. The visit programme was designed as a

1) *This document is not strictly speaking a policy document but a discussion of issues.*

participatory review in which both the team and the institutes and individuals visited expected to learn and to expand their understanding of the overall development research effort in Denmark. This report, therefore, does not comment directly on specific projects or programmes except insofar as it is helpful to illustrate general principles which form the basis of the analysis and subsequent recommendations. At each interview, five crosscutting agenda items were used to guide the discussion:

The ‘cosiness’ factor: the development research community in Denmark is, inevitably, very limited in size. The team sought to explore not only how researchers avoided even the impression that established relationships could influence research funding and priorities but, as importantly, how the research community continually challenged itself and its work. ‘Cosiness’ can be a good characteristic, but also be a little dangerous. The relatively small development research community often knows each of its members well and can keep in touch by informal meetings and communications. But this can also lead to a lack of transparency and make it difficult for those, not part of the existing informal networks, to gain access to information and to research funds. Evaluations can be superficial, lack analytical vigour and criticism, leading to deep seated and unarticulated misunderstanding between the various parties involved.

Feeding the ‘voice of the poor’ effectively into the research process: Danida policy has an explicit poverty alleviation agenda. The team sought to understand how (and how effectively) this agenda was incorporated within the research vision and policies of participating institutes and research programmes.

Monitoring and milestones: research has to communicate its results and information to the wider community. The formal process of international quality publication and external review of research is well established. The team had access to several comprehensive reviews of development research programmes in Denmark as well as many formal publications. However, the aim of the discussion under this heading was to gain an understanding of the ways in which the Danish development research community reached out to the wider world both to move research into implementation and also to learn from feedback from practitioners. Danish researchers need to be able to show clearly that they are making a difference to the lives of the poor, to demonstrate to taxpayers that their work is providing value for money, and that the individuals and institutions involved are building up their experience and capacity to become even more effective in the future.

Priority setting and research frames: the team needed to understand how the research effort was framed and how this frame was modified and developed in the light of experience. Under this heading, the evolution and strengthening of partnerships between Danish researchers and partners (not necessarily researchers) in the developing world was explored. Research by its nature is long term but needs to address immediate as well as longer term problems. The interview process was used to explore how the balance between these two needs was addressed at each institution. Emphasis was also placed on understanding how partnerships and collaborations were established between disciplines so as better to address the complex problems of development research. The team noted the very real tensions in this area between various groups – between RUF and the Danida sector programmes, between the sector programmes and researchers, between and within the various research groups. There were evident problems of setting relevant and shared priorities.

Determination of research quality: research methodologies and processes have changed considerably in the light of experience in creating change under the very difficult circumstances found in many developing countries. Some of these approaches are not well accepted within the conventional scientific community. The team sought to understand the perspectives of the development research groups and individuals with respect to innovative or unconventional research efforts. There were issues of different groups having very different quality criteria. These criteria sometimes were far from being explicit and clear.

Review of Findings

A draft report for discussion was produced and presented verbally to a meeting organised by NETARD on November 27, 2000. The meeting was planned as a participatory review of their recommendations with key Danish (and where possible, developing country) researchers. The report was then to be presented to the Commission for further review and incorporation within the overall framework.

The Context and the Problem

The Contribution of Technology to Poverty Alleviation

It is perhaps worthwhile to emphasise the vital importance of agriculture as the major sector in Danida's focus countries. While the share of agriculture may be falling in some countries, livelihoods for the great majority of these countries will be shaped by the future development of agriculture. Research which supports agricultural development and sustainable use of natural resources is of fundamental importance. While improving agricultural productivity and natural resource management cannot alleviate poverty alone, it will be an important component of any poverty related development effort:

- Firstly, where food is short, the poor usually bear the brunt in terms of nutrition. Whenever the demand for food exceeds supply, prices rise, reducing the real incomes of all, but often pushing those with the lowest incomes into starvation.
- Secondly, poorly nourished populations are unable to achieve their productive and human potentials, which compromises not just their own welfare but that of society at large.
- Thirdly, where agricultural productivity is poor and food shortages ensue, overall economic growth is held back. Resources needed for investment are diverted to emergency feeding programmes. On a national and global scale, investment in the highly attractive and high income non-agricultural sectors is predicated on a reliable and reasonably priced food supply and widespread access to food by the population.

The output of the major cereal grains (rice, wheat, and maize) has doubled on a global scale over the past 30 to 35 years. The credit for this achievement is attributed largely to the widespread adoption of 'Green Revolution' technologies – improved seeds of high-yielding varieties, irrigation, fertilisers, and other agrochemicals (Crosson and Anderson 1999) – particularly in populous Asian countries. Science has, therefore, been a significant contributor to the reduction in world poverty. But there are several important caveats:

- Nothing on the scale of the Green Revolution has been achieved before. It is a remarkable human endeavour. But, while the Green Revolution has made an evident major contribution to global food security in the past, the evidence shows that it does not provide a complete answer for the future,

- secondly, over the past decade, yield increases from the Green Revolution technologies have been decelerating, and in some cases, stagnating (Pingali et al. 1995). The levels of key Green revolution inputs such as fertiliser and irrigation water have reached or passed the point of diminishing returns in some major agricultural areas. Adverse environmental impacts also constrain the greater use of some of these inputs,
- thirdly, human population growth has adversely affected (and will continue so to do) both the quality and the quantity of the basic resources needed for agricultural production,
- and finally, important 'new' science such as biotechnology remains unproven. As the limits of some of the more widely adopted Green Revolution technologies become reached, there are worrying gaps emerging in the technology chain.

By the middle of the next century, there will be about one-third less arable land available per capita, and probably an equivalent reduction in the availability of water for agricultural purposes. Food supply needs to be doubled with less of both these key natural resources available. Poverty can be reduced through improved technologies which enhance productivity and protect natural resources. This holds true for a wide range of commodities, environments and regions. More can be done to promote and improve the best of existing technologies. But the fact remains that, for a substantial proportion of the rural poor, too much of the present technology portfolio is either unavailable or unsuitable. While efforts need to be made to get technology 'off the shelf', the reality is that much of the technology which remains 'on the shelf' is there for the very good reason that it is simply not good enough for the problem at hand.

Agricultural research and technology development is no 'silver bullet' to solve the problems of the poor, but investments in this field compare favourably with the common other options (Pachico *et al.*, 2000). The issue of long term effects of agricultural technologies, both modern and traditional, becomes increasingly important as the land and water limits described previously are reached. The term 'sustainable agriculture' is increasingly used but its definition is problematic. Few (if any) systems remain robust under any and all possible adverse conditions. But there are practices which are evidently 'unsustainable' under known conditions. Water depletion and soil erosion are problematic in the Indian Punjab, in the North China plains, and in the Great Plains of the United States. In Europe, the use of high levels of nitrogen (from both organic and inorganic sources) is being limited to reduce nitrogen contamination of water supplies.

There is a growing sense that strategic research and high quality science are incompatible with the complex demands of the development agenda. Too many developing country farmers face conditions of difficulty and stress for which *both tradition and science* have few real answers. Technically sound solutions turn out to be financially or managerially unsound. Too much research is conducted on single problems and too little effort is made to tie the results of research into the complex environment in which the farmer has to operate. Strategies to deal with this problem include widening the use of on-farm adaptive research methods and intensifying work with partners (both NGOs and national extension services) through whom research results are provided to farmers. But the practical implications are often underestimated. Farmer participatory research has a high initial cost. There is a real issue of defining how truly representative of the whole population are data from farmer participatory exercises. On-farm research is more difficult, costly and variable than on station research – which leads to problems in interpreting data.

Recent disillusion with the performance of public sector agencies has led to a sharp shift of resources to non-governmental organisations (NGOs). These are perceived as being more effective and also more representative of local needs than apparently cumbersome government agencies (Eicher, 1999). The biggest NGOs have a substantial funding base and claim an impressive track record in creating change. However, their costs are high and there is little real evidence of their performance over time. Public sector agencies, given the same resources and freedom to operate, might well perform equally well. As Eicher (1999) points out, the NGO effort typically relies heavily on previous local development activity.

Danida strategy focuses on three central themes:

1. Food security,
2. Environmental change, and,
3. Knowledge transfer and interchange.

In the view of the team (and as illustrated in the following review), the three research themes developed by Danida are congruent with current international agendas and address some of the most serious development problems facing the poor in Danida's focus countries.

1. Food Security

Over 800 million people living in developing countries are chronically hungry. Hunger remains a fundamental problem, even though the world supports two and a half times as many people as it did 50 years ago and 150 million fewer are chronically hungry than in 1970. On average, people in the developing countries are better fed, better educated and live longer. This change has been driven, in the first place, by growth in agricultural output and farm incomes. Other important contributing factors have been investments in basic education and health of women. In some places institutional changes in the management of irrigation, forests and other community-held resources have contributed, although the management of such resources remains a widespread challenge. Together with educational, health, policy, and environmental improvements, more productive farming technology has helped to generate the increased food and entitlements that enabled many of the 150 million to rise out of hunger over the past 30 years. However, much of the improvement has been concentrated in a few countries.

In a food secure world, all people would have enough food to carry on a normal life at all times. In today's world, FAO estimate there are 270 million chronically undernourished, hungry people in East and South East Asia, 260 million hungry in South Asia, and 220 million hungry in subSaharan Africa. These three regions account for 88 per cent of the hungry people of the developing world. The steps that will ensure food security are different in every place because countries, regions and communities differ.

There are, however, some essential common fundamental principles including:

- The need for effective collaboration and partnership as the efforts of many actors will be required
- Basic social stability
- Ecologically sustainable technologies for long-run progress
- Directing resources to the poor, and

- Participatory governance to increase the likelihood that many will feel ownership of changes.

Progress in any one sector will complement progress in others. For example, increased food consumption can improve health – which further can improve food security by facilitating improved productivity. With increased incomes comes greater investments in education which opens up new options for the poor. A robust, competitive, private sector can provide services, generate employment and balance government interests.

In developing countries, poor people derive their livelihoods from a variety of sources. But, since a majority of people are still rural, there is typically a direct link between agricultural production and food security. The poor have few assets. They require innovations – from farming to marketing, processing and consumption – which enable them to use those assets (often mainly labour) more effectively and in a sustainable way to improve their livelihoods.

2. Environmental Change

At the global level, there has been concerted inter-governmental action since 1987 (Brundtland) to develop conventions to direct policy actions on environmental change. The trend shows no sign of abating. **More and more ODA in the agricultural and environmental arena is being directed by the global conventions from developed country sources to developing countries. It is an area of assistance that Danida cannot ignore. The principal topics covered are climate change (along with greenhouse gas emissions), land degradation and desertification, biodiversity, pollution, and international waters.**

Denmark has signed up for all the major global environmental conventions and has made a clear commitment to providing financial and technical support for their implementation. MIFRESTA (the Environment, Peace and Stability Fund) has been set up to provide targeted environmental action in developing countries, in cooperation with the Danish Forest and Nature Agency and the Energy Agency. Efforts are targeted towards medium income countries in South East Asia and Southern Africa, aiming at promoting sustainable exploitation of natural resources and at preventing and reducing pollution and supporting the development of sustainable energy. Danida also administer some MIFRESTA money. At present, the policy is largely “to promote increased efforts to combat global environmental problems.” (#2, p. 11). There is less clarity on how this potentially substantial sum of money is to be spent. **There is a huge research agenda falling within the stated environmental policy of Danida and carefully thought out procedures for calling for research proposals are required.**

3. Knowledge Transfer and Interchange

The modern world is divided by technology (Sachs, 2000). A small part of the globe, accounting for some 15 per cent of the world’s population, is the source of most technological innovation. A second part, which involves perhaps half the earth’s population, is able to adopt these technologies in production and consumption. The remainder, some 30 per cent of the population, is what Sachs has termed ‘technologically disconnected’. This group is neither innovating at home nor adopting foreign technologies. The ‘technologically disconnected’ include southern Mexico and pockets of tropical Central America; the Andean countries; most of tropical Brazil; much of the former Soviet Union; landlocked parts of Asia such as the Ganges valley states; tropical subSaharan Africa; landlocked Laos and Cambodia; and the deep interior of China.

The technologically excluded regions, especially in the tropics, are caught in a poverty trap. Their greatest problems include tropical infectious disease, low agricultural productivity, and environmental degradation. Solutions to these problems are simply beyond the means of the countries involved. Where useful technologies are available from abroad, countries find themselves too poor to afford them. But, as often, foreign technologies are inappropriate for local conditions and poor country markets provide scant incentives for research and development.

Dealing with this problem will require innovative thinking and effective collaboration. In particular, the role of research in creating answers to problems of a scale unprecedented in human history needs to be carefully and skillfully orchestrated. Development is conventionally seen as a matter of accumulating physical and human capital. Well governed poor countries are assumed to have an advantage in accumulating capital since, where capital is scarce, returns to investments should be high. The gap between rich and poor should logically narrow in consequence – a process known as ‘convergence’.

It is evident that technology is less likely to converge than capital for a host of reasons, of which the most important include the facts that:

- regions with an existing stock of good technology are better placed to innovate further;
- the incentive to innovate is linked to the size of the market and poor countries have typically weak and small formal markets;
- successful innovation requires strong and effective supporting institutions. Market led innovation is a product both of basic scientific insight (typically from ideas in the public domain – which requires high quality universities and public laboratories) and application (backed by patents or similar controls – and involving private, profit driven firms). Such conditions are the exception in most developing countries.

To create a more favourable environment for technology adoption and development will require an adventurous new collaboration between international assistance agencies, first world universities and scientific establishments, and the private sector at both local and international levels. Innovation requires close and effective collaboration between ‘public good’ research and the market. While increasing the demand led component of the research agenda is important in the developing world, such an approach will not, on its own, act sufficiently fast to lift the technologically disconnected rural poor out of poverty. **The same need for fruitful interaction between academia, government, and industry, which has led to the technology explosion in the wealthy parts of the globe, is needed in the developing world. A balance between allowing the poor to help focus the research agenda and permitting the brightest and best to explore new and interesting opportunities is essential.**

2. TOR1: An Overview of Danida Funded Development Research

Key Policy Issues

- “Agricultural research should be included to a greater extent as an integral part of Danish development assistance.” (#1, p. 19)
- “Denmark aims, over and above the Danish development assistance, to allocate 0.5 per cent of the Danish GDP by the year 2002 towards the ERDF [Environment and Disaster Facility}....[F]unds should be allocated equally between environmental measures and disaster relief.” (#2, p. 6).
- “Danida’s agricultural support will contribute to the general development objectives of improved food security and meeting future food needs following from increased factor productivity....[S]upport is provided with a view to achieving a sustainable increase in factor productivity on the part of smallholders, particularly female farmers.....Danida gives priority to a strategy for the sustainable intensification and commercialisation of smallholder production” (#3, p1).
- “.....to ensure that the process of change benefit the poor” (#4, p. 9). Document #4 has a whole section entitled “Development through Poverty Reduction” (pps. 13-16), and another (pps. 17-18) on sustainable development (pps. 17-18).
- Document #5 devotes a section to “Poverty Reduction in Focus” (pps. 5-6). There is a strong emphasis on the knowledge sector, together with proposals for collaboration, sustainable knowledge transfer and creation through different pathways, and on better co-ordination between aid and research.

Bearing the expression of these key policy statements in mind, the team sought to establish what was the record of support for agricultural and natural resources research, and what were the plans for the future. Also, the means by which research supported the realisation of these goals was examined. Thus, the institutional landscape as presently developed and possible changes in the future was explored. In particular, the team noted the emphasis on poverty reduction in most policy documents. Key components summarised from these documents include:

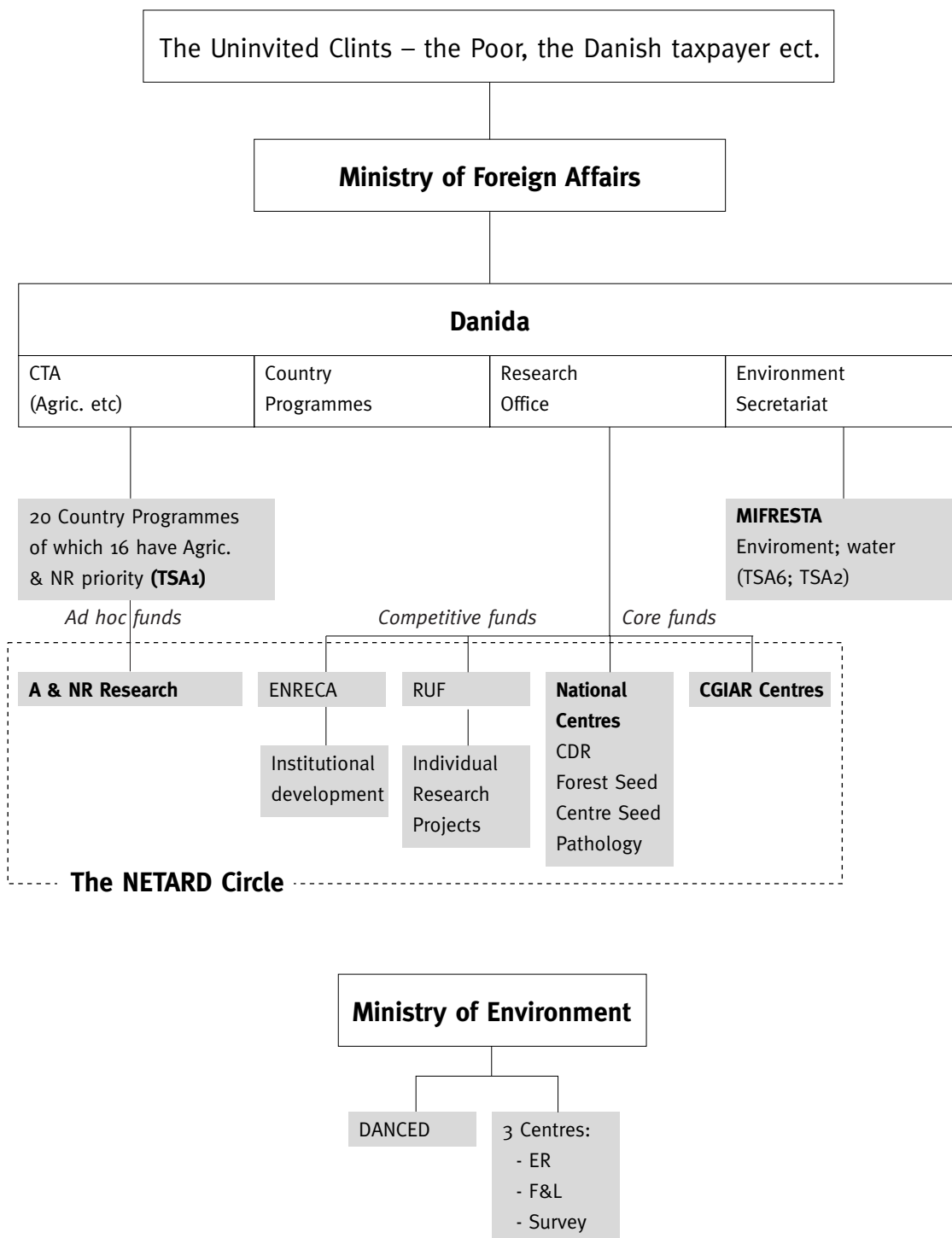
- Promoting sustainable development through capacity building in LDCs
- Careful preparation and implementation of activities supported by Denmark with due consideration for the environment, especially by preventing and combating pollution
- Enhancing LDCs’ capacity to partake in international environmental agreements
- Creating synergy between multilateral and bilateral activities, particularly (in the environmental field) MIFRESTA.

The team noted that the Daned environmental initiative was a new activity and did not have a defined research component. ‘Environmental measures’ need not be research orientated. However, the sustainable development focus of the agricultural research support programme was taken explicitly by most Danish researchers to require close attention to be paid to the environmental impacts of agricultural interventions and technologies.

Institutional Mapping

Figure 1 below provides a thematic map of the linkages between the various parts of the Danish development research system in Agriculture and Natural Resources. The linkages focus on issues of finance and of delegation and control of resources. Of particular significance are the ‘Uninvited Clients’ – an issue which will be returned to in subsequent parts of this report.

Mapping Danish Development Research in Agriculture and Natural Resources



The major channels for Danida-financed research *in agriculture and natural resources* include (DKr budget allocations for the year 2000 are indicated):

- CGIAR institutes (Consultative Group on International Agricultural Research) (DKK 70 million)
- Enhancement of Research Capacity in Developing Countries (ENRECA) (DKK 59 million)
- Danish Council for Development Research (RUF) (DKK 49.5 million).
- Danida funded research institutes: Centre for Development Research (DKK 24 million), Seed Pathology Institute (DKK 20 million), Danida Forest Seed Centre (DKK 7 million)
- Unspecified amounts for research within bilateral sector programmes and multilateral assistance.

Funds (outside the sector programmes and multilateral assistance) are managed by a small Department for Development Research (DDR) within the South Programme of the Danish Ministry of Foreign Affairs. Two persons within DDR manage, not only the CGIAR grants, but also all other international development research grants, and the Danish development research activities (RUF and the Danida funded institutes). ENRECA is managed by a separate team of two individuals.

Under these circumstances, DDR policy is that the core funded institutes (both CGIAR and Danish) are better placed to set the research agenda rather than being directed from DDR itself. Responsibility for RUF priority setting and resource allocation is also left with that body. **Some two thirds of the funds provided explicitly for research by Danida are used for purposes over which the Ministry of Foreign Affairs has little direct influence.² The outcome is a lack of cohesion between Danida priorities and the uses for which research funds are being used.**

There are three main programme categories based on the main funding mechanism used for research support:

Programmes which are Supported by a High Degree of 'Core' Funding

Such programmes receive guaranteed and sustained funding, most of which is available for activities decided within the institute or programme itself. Core funding may be restricted to certain priority areas but the level and continuity of support is usually stable. **Core funding provides the continuity and stability necessary to undertake difficult and long term research efforts. However, there is also the danger that programmes which rely heavily on unmonitored core funding (or core funding which is not routinely and carefully checked against explicit goals and targets) can slip into complacency.**

2) This comment is not intended to underestimate Denmark's position in the inner circle of the CGIAR system. Denmark has played an important role in the ongoing activities to reshape the CGIAR agenda to include increased emphases on the poor, gender issues, environment/bio-diversity and income generation. The point being made is that the absence of staff resources within DDR compromises the ability of Danida to build on this foundation, and poor linkages to other Danida programmes are unhelpful to the overall effort.

Core Funded Danida Research

The IARCs

The CGIAR system benefits from substantial unrestricted core funding from Denmark. Denmark has been a consistent and generous supporter of the CGIAR system with contributions growing from DKK 1.5 million in 1972 to DKK 70 million today. As the number of IARCs has grown, so Denmark has raised its contributions. Almost all support is for non-restricted core funding. There are some 20 Danish JPOs associated with the IARCs and 8 Danish board members. In 1998, Denmark was the sixth largest contributor (after World Bank, USA, Japan, EU, and Switzerland). It is probably the second in *per capita* contributions (after Switzerland). Recently 10 per cent of funds given to the CGIAR system have been earmarked for collaborative projects between Centres, Danish institutes, and issues of priority to the national bilateral Danida programme. Denmark is also contributing to 8 system wide projects.

National Centres

A slightly smaller total amount (DKK 54 million) is provided to the three Danish institutes (CDR, DSPL, DFSC) which undertake development research in the agriculture and natural resources sector. Thus the total of Danida funds which go essentially for institutional core funding is DKK 124 million annually as opposed to DKK 59 million which is used for competitive bidding through the RUF programme. ENRECA (which is also competitive) is allocated DKK 45.9 million annually but ENRECA is categorised as a development (as opposed to a research) programme – although there are significant research components within ENRECA.

Centres without Walls

After the UN environmental conference (UNCED) held in Rio in 1992, Denmark pledged DKK 50 million through Danida for research into environment and development issues. It was designed as an initiative

- to support research into the exploitation of basic natural resources in a sustainable way, and in such a way that the results could be used to good effect by aid interventions,
- that extended the body of Danish knowledge, and,
- that was conducted on an interdisciplinary basis, unrestrained by institutional demarcations.

The focus areas for research were to be the sustainable use of natural resources in semi-arid areas of Africa, and the sustainable exploitation and protection of biodiversity in the tropical rain forests of Latin America. Three programmes were proposed and approved in a competitive bidding process through RUF in 1994. Each effort had a different lead institute but all involved collaboration between institutes and disciplines as required under the funding rules. In each case a centre was set up – DIVA in Latin America, SASA in semi-arid Africa, and SEREIN in the Sahel. Core funding was assured for a five year period although there was some evident expectation, at least by the research groups, that a stable base of future funding would become available. The work at each Centre was subject to both a midterm and end of project review.

The evaluations were, on balance, very positive regarding the scientific quality of the work carried out and its contribution to extending the Danish body of knowledge. They were much more critical regarding the contribution to Danish aid activities, to the creation of interdisciplinary efforts, and in terms of the extent and effectiveness of

information dissemination from the work. Following the end of project evaluation in late 1999, a call for Papers of Interest was made but with greatly reduced resources in terms of funds and numbers of activities.

The SASA, SEREIN, and DIVA experience appears as the start of an interesting trend towards 'centres without walls' – the new SLUSE project represents another example. The funding of such centres has been less stable than the main national Centres. The costly research exercise in terms of time and resources, as well as investments made cross disciplinary and cross institutional links, have not been adequately exploited – either in terms of developing and disseminating current research, or in terms of building on institutional networks and expertise. This makes it significantly harder for the researchers to fulfil Danida's research brief (especially *Partnership 2000*). On the other hand, it appears that the institutes involved (which include most of the major natural resource and social science development institutes) had difficulty in absorbing effectively the substantially increased resources made available to them.

Programmes which Rely on a Competitive Bidding Process

The uncertainty associated with this kind of funding means that activities are usually planned around a fairly short time horizon (1-5 years) and longer term efforts are funded in a series of phases. However, rarely is there any guarantee that funding of one phase represents a firm commitment to continuing future funding. Competitive bidding provides a tougher environment for the research groups or individuals. Each project has to be justified in terms of the rules of the bidding process and thus subject to some kind of continuing overview. However, **unless the rules and review procedures are appropriately developed for the task at hand, competitive bidding does not per se result in high quality and problem orientated research.** Moreover, the short term nature of the funding discourages taking on intractable and long term research challenges.

Research Funded under Competitive Bidding from Danida Resources

Depending on how ENRECA is defined (as research or development) between two thirds and a half of Danida funds are used in programmes subject to competitive bidding; mainly through RUF. RUF, having received core funding, operates largely independently of Danida (particularly the sector programmes).³ Research proposals in the areas of agriculture and natural resources are sent for comment to the appropriate sector programmes within Danida. Proposals which do not receive approval from Danida are not funded. However, the relevant sector programme staff do not have adequate time or manpower to review the RUF proposals. They also do not know how individual proposals fit within the overall budget of RUF and are thus unable to prioritise between proposals. **In practice, Danida staff provide notice of 'no objection' to any particular research proposal rather than a positive endorsement. Both Danida staff and researchers are dissatisfied with the present system under which Danida provides core funding to RUF, which then allocates funds according to its own criteria and independently from Danida.**

Programmes which are Funded on an *Ad Hoc* Basis

Such activities may be exploratory in nature, may be set up to deal with an immediate crisis or issue, often of a problem solving nature in the sector programmes. Typically

3) *While DDR has some oversight of RUF, the linkage to other Danida programmes is less evident.*

they will be short term (1-3 years). They may lead to longer term efforts but these are usually supported using resources from one of the two preceding categories of programme. *Ad hoc* funding provides a high degree of flexibility. Research teams can be quickly assembled to address a particular problem or issue. Funds can be allocated to explore possible research interventions before a major effort is initiated in a particular field. But the **effective use of this kind of support requires a common understanding of the problem, and how to frame it in a researchable manner**. In the absence of this understanding of the issues from both researcher and user/beneficiary perspectives, resources may not reach the right people to undertake the task at hand, or they may be used in a manner which is unsatisfactory to one of the parties involved.

Research Funded on an *Ad Hoc* Basis from Danida Resources

The Danida Sector programmes have some resources to support research directly. The exact amount is not defined but appears to lie in the range of 5-15 per cent. Consistent with the key policy issues defined previously, an increasing proportion of research will be supported through the sector programme route. **Such contract research, properly formulated with vision by researchers and Danida staff, can provide a valuable entry point for longer term research initiatives. However, the procedures for accessing sector research funds are very unclear. Unless these are improved markedly, the contribution of research to Danida's development aims will fail to achieve its potential.**

An Overview of Danish Agricultural Research Institutions

Overall there are some 11 Danish institutions with a substantial involvement in development research in the agricultural and natural resource area. These are listed in Appendix 3. Those whose mandate is exclusively development orientated are CDR, DSPL, and DFSC. Several national laboratories and institutions undertake development research as part of their overall programme. These institutes include the Risoe National Laboratory, the Danish Pest Infestation Laboratory (DPIL), Danish Forest and Landscape Research Institute (DFLRI), several universities (Aarhus, Copenhagen, KVL, and Roskilde), and the Danish Institute for Agricultural Sciences.

CDR, DSPL, and DFSC are all producing evidently high quality work of direct relevance in the agriculture and natural resources field (the team did not review the wider research portfolio of CDR particularly) to the countries in which they are working. CDR is a social science institute with a small focused staff and programme. It is actively involved in consulting so as to bring a 'real world' orientation into its work, but not to the exclusion of longer term research. It has been working with Danida on an interesting programme to improve the monitoring and evaluation of research. DSPL balances its programme of research with an ongoing programme of training for seed pathologists from developing countries. DFSC, as will be noted later in this report, has a particularly impressive programme built from a modest base. This programme includes (recently) a social science element and incorporates the best of experience from Danish national research. Importantly, it has been highly innovative in attempting to reach the poor and to develop an inclusive focus to its work.

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

further national agricultural institution, has several research sites across Denmark and a significant programme in areas (mainly in the natural sciences) from the very applied to some important basic research.

University contribution to development research in agriculture and natural resources is dominated by KVL, with some interesting work being carried out in geographical research at the University of Copenhagen, and in social science research at Roskilde. Aarhus University also has a programme of development research but with less evident links to immediate Danida problem areas.

Both DIAS and KVL have chosen to attempt to coordinate internally their development research activities through appointing a 'research coordinator'. This is in recognition of the need to reduce fragmentation and improve focus in their development research efforts. The role of these coordinators remains somewhat unsatisfactory as neither appears to have a clear mandate for their work. What is not needed is for these posts to become simply a 'gatekeeper' through which all development proposals need pass. Rather they should be aimed at facilitating, encouraging, and supporting innovative development activities within their institutions and helping create collaborative linkages to other institutes and programmes.

The team explicitly did not treat this exercise as an evaluation of individual research projects and programmes. The range of activities/institutes covered and time available would have made this, even with the best intentions, a partial and possibly unfair exercise. But it is evident that, despite a funding environment which has been unclear with respect to its direction and policy priorities, and where, for most scientists, the uncertainty of the funding process is daunting, there is some outstanding work going on, and there is much that is good.

As will be detailed in subsequent sections of this report, the fundamental issue that needs addressing is to improve the funding mechanism. The team met an impressive group of scientists served indifferently in terms of direction and policy. In such an environment, they will do, as good scientists are expected to, the things that interest them as a priority. They have shown that where funding priorities and access mechanisms are changed, they will respond sharply. As noted previously (with the SASA, SEREIN, and DIVA programmes) scientists have tried to change the way they work and what they work on. Those programmes were flawed – again in terms of funding direction and consistency – and many of the lessons learned have been lost. The recent formation (discussed subsequently) of the Danish Network for Agricultural Research for Development (NETARD), an attempt from the research community to improve its own ability to respond to Danida's needs, is another indication of willingness to adopt new approaches.

Researchers can do much more to help themselves. Several research groups have shown themselves to be responsive, nimble, and able to relate to priority problems within the Danida effort. DFSC and the Network for Smallholder Poultry Development (discussed later in this report) provide examples of such activities. They have evidently been able to build up their funding base, and expand the range of their interventions – which indicates that Danida does respond to well formulated research proposals. This experience needs to be more widely adopted across the research community so as to facilitate the much needed linkages to Danida policy priorities.

3. TOR2: 'Mainstream' and Development Research Agenda at the National Level

Key Policy Issues

- "Research institutions and researchers should be included in the ASPS [Agriculture Sector Programme Support] planning process at the earliest possible stage" (#1, p. 19)
- "The involvement of the Danish resource base is a fundamental prerequisite for a successful programme" (#2, p. 15).
- "The formulation and design of the Danida-government cooperation programme will be based on the government's agricultural sector policy or plan" (#3, p. 13).
- "promote popular participation in development co-operation through information and open and credible dialogue with the population and by maintaining the support of the Danish public for Danish NGOs" (#4, p. 12).
- "'Stakeholder' groups of both the public and private sector and civil society are intended to be involved in the establishment of priorities and in implementation" (#5, p. 9).
- "Danish support to research is focused on development research of particular relevance to developing countries" (#5, p. 12).
- "There are several indications that the institutions need to do more to ensure the research work is in compliance with the requirements of Danish development assistance". It is also discussed to which degree the work is of relevance for practical application. (#5, p. 13).

Guided by these key policy statements, the team sought to establish, under this term of reference, three main issues

- the focus and priority setting processes, in relation to the spread of resources,
- the coordination between research and development activities,
- how far Danida support to development research reflected mainstream agricultural and environmental concerns in Denmark, as articulated by the media and political representatives, and,
- the role and function of networks.

Focus and Priority Setting

Support for individual national research projects (as opposed to institutional development activities) is provided by several national research councils and by the Danish Council for Development Research (RUF). Most of the funding for *development* research projects comes from RUF. Proposals are considered by the council twice a year following approval from Danida⁴ and after review by at least two RUF members. Proposals may be sent out for external review if a suitable RUF member cannot be found or there is need, as perceived by RUF, for wider consultation. RUF as a body takes the final decision on funding of any given proposal. Typically, some 160 project applications are made each year. In addition, RUF has also funded NETARD to improve communications with Danida.

4) As noted earlier, this amounts to little more than a statement of 'no objection' from Danida.

The funding process is competitive and RUF has considerable influence on the overall research agenda, through setting themes of its own choice and screening proposals using its own criteria. In part through RUF support, in some fields Danish researchers match the best in international research. The Danish research community has responded quickly to RUF initiatives as indicated by the range and quality of proposals which are received from calls announcing strategic research initiatives within agriculture, health and the environment. The SEREIN, SASA, and DIVA programmes discussed previously all resulted from a RUF coordinated effort. RUF should in *principle* be able to encourage research on cross-cutting issues such as the environment and livelihood strategies of the poor.

The development research community in Denmark is small but, on the evidence provided to the team, is of high quality. The institutions have a strong national funding base and are generally well up with the leaders in their particular scientific areas. The range of scientific capacity is impressive, as are laboratories, equipment, and training opportunities for scientists and support staff.

In Denmark, farmers and consumers are well linked to the research community through an efficient network of farm advisors. This has proved highly successful in creating an appropriate balance between highly focused, but narrow and specialised research and the broader applied work needed to create widespread impact. In the development research effort, however, comparable linkages have not been created and there is less clarity in the research focus overall.

RUF has recognised that there are a number of problems and that change is required. These are, according to its own analysis:

- Inadequate focus and priority setting, with resources spread too thinly
- Poor coordination between research and development activities. RUF projects do not make an adequate contribution to Danida sector programmes. Proposal screeners often do not have developing country professional experience and have little familiarity with Danida and its policies. Similarly, RUF's professional links and knowledge about ENRECA activities result in missed opportunities for exploiting the scope for capacity building and partnerships in research
- Too little research on culture and technology and on private sector and infrastructure development.

However, the team believes that a more radical effort is needed to address the problems associated with RUF. Within the recommendations which conclude this report is a restructuring proposal for the entire research process.

Coordination Between Research and Development Activities

Past communication between Danida and the research community on topics of mutual interest has left much to be desired. The involvement of developing country partners in the definition of research agendas and projects has been minimal, though the recent ENRECA evaluation shows positive examples (but ENRECA is not a RUF programme). The review process followed by RUF is too narrowly based, insufficiently linked to emerging issues in the developing world, and does not facilitate critical feedback on either donor policy issues or those of research priorities or focus.

On the other hand, on an individual institutional basis, there are examples of excellent coordination. The Network for Smallholder Poultry Development and the Danida Forest Seed Centre both provide models of well focused, pro-poor research activities which are well rooted in national competencies and which have a track record for quality.

Reflection of Mainstream National Concerns

The team could find little evidence of the need to find out what the interests of Danish taxpayers in development research are, and of efforts to help inform them about the problems facing developing countries. It is not axiomatic that the Danish taxpayer will continue to agree to pay for the Danish aid effort and for the research which supports it. **More therefore needs to be done to find out what public perceptions are and to provide effective information how taxpayers' money is making a difference to the poor in developing countries, and how research facilitates this.**

The Role and Functions of Networks

Two main networks were reviewed by the team; the Network for Smallholder Poultry Development and the Danish Network for Agricultural Research for Development (NETARD). Both are very different in function. The Network for Smallholder Poultry Development was established to facilitate a research agenda which focused on household poultry as an avenue for improving livelihoods of the poor (especially women). Its activities are built round simple but effective concepts – that poultry are ubiquitous in poor urban and rural households, that poultry products are both nutritious and have a market value, that they are often perceived as a 'woman's' commodity, and that there are real opportunities for improving the productivity of household poultry through research interventions. This focused approach has 'nicked' neatly into Danida concerns and the programme has grown impressively, building on its track record and experience. Of particular relevance is the fact that the Poultry Network was established as a result of successful practical implementation in the field. It was the people involved in the field who requested the badly needed research support. Danida could use the valuable experience from this network to 'scale-up' research in other areas. The Poultry Network's board is multidisciplinary, as is the composition of the staff. The combination of experience of *both* practical development work and research in the core group spearheads the exercise. New professionals are encouraged by supporting students from developing countries and Denmark in MSc and Ph.D. studies. The innovative use of the Internet could enable comparable core groups in other areas to meet productively at reasonable cost.

NETARD was formed in 1998 with the main purpose linking the Danish agricultural research in development research more effectively to Danish development co-operation. NETARD is funded by RUF and operates through the promotion of dialogue meetings, thematic seminars, and information gathering and exchange. Eleven research institutions, including universities, sector institutions and other institutions, constitute the core of the network. NETARD membership also includes more than 100 individuals from institutions, private companies, NGOs and donor organisations with interests and activities in development research within agriculture.

NETARD was developed by the research community with the explicit objective of linking research to sector programmes. The initiative has been well received by Danida sector programmes in agriculture and natural resources – but Danida does not explicitly endorse the NETARD strategy. The agriculture sector programme has requested that the network set up two research missions to work directly with sector programmes in Bangladesh and Eritrea to help define necessary research agenda. This exercise can be

regarded as a pilot in the implementation of the NETARD strategy and has been well received by Danida. NETARD is not simply a medium of communication between the research community and Danida, but rather acts as an important external collaborator and partner to Danida. NETARD also plays an important role in urging Danida to engage in strategy development and priority setting, developing the necessary linkages between the research community and development, and assisting in developing suitable funding and support for research collaboration.

Both networks provide opportunities for 'learning by doing' by all partners, as well as providing real world examples which can then be used (and modified where necessary) in other countries.

The team recognised the very real contribution that NETARD had made to improve communication within the development research community and between that community and Danida. But the existence of networks such as NETARD is an indication of the very serious lack of communication amongst several key players in the development research process. The experience of the Network for Smallholder Poultry Development in developing effective and long term communication between individuals and agencies needs to be incorporated fully into the overall development effort.

4. TOR3: Danish Contribution to the International Agenda

Key Policy Issues

- “Exchange of information among the various key Danish actors and key actors in the developing countries should be improved.” (#1, p. 19)
- “The overall objective of Danish environmental assistance is to promote increased efforts to combat global environmental problems.” (#2, p. 11).
- “Danida’s strong support for the IARCs will continue with an increased emphasis on research in drought prone areas, resource management in fragile areas, and intensification of research and development of rainfed areas” (#3, p. 80).
- “Denmark supports IFPRI’s 2020 Vision.” (#3, p. 19).
- “Denmark’s development co-operation will support the national policies for poverty reduction. Internationally, it has been agreed that the following major goals for poverty reduction must be achieved by the year 2015”... followed by the consensus international list of goals (#4, p. 14).
- There is an interesting discussion on the dilemma (#5, p. 13) as to whether internationally high standard work at a particular Danish research institution should be the only or major criterion for financial support, and how strongly the criterion of relevance to developing countries should balance the first criterion.

Under this term of reference, the team sought to establish:

- how the voice of ‘the poor’ influences the international research agenda,
- what structures and mechanisms are used to deliver Danish expertise to global agenda concerns,
- what were the common characteristics of successful activities, and,
- how the Danish resource base could be developed so as to bring the best of Danish expertise into the development research area.

Hearing the Voice of the Poor and Addressing Big Global and International Issues

As noted previously, Danish researchers, working on Danish agricultural and natural resource issues, have an effective mechanism for obtaining feedback on their efforts. Such feedback between development researchers and their clients (the poor in developing countries) is unfortunately not replicated at the international level.

Communications with Danida sector staff need to be improved. CBOs, NGOs, and citizens’ groups need to have an effective mechanism through which they can participate in research agenda setting and review.

Common Characteristics of Successful Activities

The overall quality and motivation of Danish development research groups encouraged the team. There was a consistent emphasis on addressing scientific quality (although less consensus on what are appropriate measures of quality in development research). Two programmes examined by the team provided some insights into important characteristics for success. These examples – the Network for Smallholder Poultry Development and the Danida Forest Seed Centre – are used for illustration and are, by no means, unique. **Key features for their success included small, charismatic leadership, good linkages**

with the poor in developing countries, an absence of bureaucracy in programme development and implementation, and their ability to adapt quickly and effectively to new issues and problems.

Importantly, these centres have a modest degree of core funding on which they can develop long term strategies. Again, a contrast with the environmental centres of SEREIN, SASA, and DIVA is instructive. These also had core funding and were able to produce excellent and valuable research, but they did not develop sustainable alternative sources of finance after core funding was withdrawn. There was a breakdown in communications between funders and research centres, which led to non-sustainability of success. The lesson for success is that institutions should start small and build up their funding base as they gain experience and establish a track record of good and relevant research.

Developing the Danish Resource base

The developing world will require into the long term continuing scientific and technical support. **While every effort needs to be made to build capacity (both human and institutional) in the developing world, the preceding review of the problems to be faced in the immediate future shows that it is unrealistic to assume that capacity building *on its own* will be adequate to create the necessary change. An important component of Danish development assistance, therefore, will be the provision of experienced and skilled Danish scientists to make a consistent and long term contribution to problem solving in developing countries.**

To achieve this aim, two important policies need to be put in place. Firstly, **opportunities need to be widened to encourage late comers to the development research process to enter the field.** There are a number of individuals and institutes which have expertise that will be needed to address the research agendas laid out in the various Danish government policy documents. The entry of these late comers needs to be facilitated so that the range of expertise and skills available is both broadened and deepened.

Secondly, **a clear effort needs to be made to encourage the best of young scientists to become actively involved in development research.** There is a very real perception (whether true or not) that access to funding for development research is too dependent upon informal and non-transparent linkages (the 'cosiness' factor again). Unless such an effort is made, the opportunities in other fields and in the developed world will draw off too many of the best young potential researchers, to the detriment of the longer term capacity of Denmark to meet its aspirations to assist creatively in solving problems overseas.

5. TOR4: Adaptation of the Danish Research Effort to Emerging Issues

Key Policy Issues

- “Danish agricultural research for development should primarily be directed towards smallholders and mixed farming systems.[and to eight specified themes including NRM of plants, soils and water; livestock, IPM; forestry and agroforestry; food security; agricultural policy]” (#1, p. 19)
- “Environmental assistance will be planned from a regional perspective in order to facilitate holistic and coherent initiatives in the prioritised regions [southern Africa and south Asia]” (#2, p. 7) and will target four areas – “cities, forests, coastal zones, and biodiversity” (#2, p. 8).
- “Danida assigns high priority to assisting governments to develop the regulatory and institutional framework for the adoption and implementation of the international environmental agreements such as the Biodiversity Convention” (#3, p. 41)
- “Danida’s primary target groupis the poorest segment of the farming community (#3, p1.)....[P]riorty subsectors are crops grown by smallholders and livestock kept by smallholders (#3, p. 5)....[A]ssistance will focus on institution building and human resource development....[with] high priority to the development and rehabilitation of national agricultural research organisation (#3, p. 6)”.
- Internationally, Denmark’s development policy links into global issues in a general way, but there follows from the international list a much more detailed set of sub-goals (#4, p. 10), including 20 programme countries to be supported through bilateral aid, in depth knowledge of these countries, assistance with their planning and by building sustainable partnerships.
- Thoughtful review on “Links between development assistance and research in historical perspective” (#5, p. 6). “There is need for further discussion of the synergies and demarcation between ENRECA and the sector programmes, and between ENRECA and RUF” (#5, p. 12). Extended discussions on the problems of capacity building in developing countries (#5, p1. 2f) and Danish support for multilateral work which lacks follow through to dissemination and sustainable knowledge transfer (#5, p. 15). Also the balance between narrow and immediate problem solving and more general knowledge enhancement (#5, p. 18).
- “There can be no doubt that academic research is needed and hence relevant in a general sense. Whether it is or should be more specifically relevant for the Danish development assistance is a question, which should be left up to the research communities themselves” (#5, p. 20).

Under this term of reference, the team sought to establish the extent to which:

- Denmark had the capacity to adapt to new issues and modify old ones, and,
- its ability to mould and implement international and global issues (in contrast to what might be termed ‘singing along’ with overall global efforts).

Ability to Adapt to New Issues and to Mould the International Agenda

The team was impressed by the enthusiasm for much of the Danish research community to become involved in new areas and to contribute to the overall

knowledge base for the international agenda. The prompt response to RUF 'themes' and to the new environmental efforts under MIFRESTA provides adequate illustrations of the interests and capacity of researchers to move into new areas.

However, the reality is that no one country can expect to set the agendas. The Scandinavian countries as a group have already made a major contribution to the international environmental agenda through the Brundtland and Stockholm 1972 efforts. **Denmark can expect to influence the international agendas, and, through its very substantial financial contribution to agriculture and natural resource research, will continue so to do.** In the recommendations which conclude this report, suggestions will be made which can help increase the overall effectiveness of the Danish efforts in the international and global arenas.

6. TOR5: Upstream Arrangements and Quality Control

Key Policy Issues

- “The institutional environment in Denmark is conducive to meeting the challenges of an intensified co-operation with Danish Development assistance. The strength of the Danish resource base is first and foremost rooted in specific scientific disciplines.” (#1, p. 5)

Documents #2, #3 and #4 have little to say on this term of reference.

- “It is important to discuss whether there may be a dilemma between research quality and relevance. There may be a tendency for basic research within narrowly defined subjects to score higher in a quality judgement than the cross-disciplinary participatory and applied research, which tend to be regarded as being more relevant from a development assistance point of view.... Also responsibility for the quality of the work may be difficult to place.” (#5, p. 20).

The team found analysing this term of reference particularly challenging. As noted earlier, there are positive as well as negative traits associated with the ‘cosiness’ of Danish research groups. But, with particular reference to this term of reference, this environment did not necessarily deliver a shared vision of development priorities between those proposing research and those funding it. Also ‘cosy’ networks and groups are, by their nature, exclusive and lead thus potentially to exclusion of new ideas and creativity.

Researchers bring ideas, innovation, and specialist skills and information. Practitioners (as represented by sector programmes) seek solutions to problems, hands-on expertise, and ‘relevance’. Researchers need to become more adept at understanding how to focus their efforts within priority areas, while Danida staff require to gain a greater understanding of how to use research and what research can do to contribute to the development process. **The absence of a well functioning two way communication between researchers and the sector programmes is problematic and frustrating for all sides. Unless this issue is addressed effectively and is supported by appropriate and mutually acceptable administrative processes, Danish development research will become increasingly marginalised within the overall development effort – to the very real detriment of the poor in developing countries.**

One immediate step that can be taken is to restructure the development research funding mechanisms so as to improve relevance and to ensure quality peer review in a timely and transparent manner. In strict scientific terms RUF does do a useful job in analysing proposed projects for quality (although the lack of field development experience amongst some RUF members is worrying). The team discussed this last point in detail with many of the individuals visited during the study and no clear consensus emerged. Views ranged from those highly critical of decisions being taken by persons without the necessary practical experience to a contrary perspective that requiring such experience would exclude some of the most talented individuals in the scientific community. On balance, the team came to the conclusion that RUF was able

to assess proposals in terms of scientific quality but was failing the development research community in terms of providing guidance on relevance.

Several major issues emerged from the various discussions:

- **What is quality and good science?** The “science versus relevance” issue in *development* research remains unresolved.
- **Are the screening/refereeing pool applying consistent and shared criteria?** It appears that RUF criteria are biased towards scientific quality and against relevance and interdisciplinarity. Differences in the criteria for research with varying objectives need to be clearly differentiated and signposted for the research community
- **What are the promotion prospects for those involved in development research?** Interdisciplinary research and applied development research is not adequately rewarded in terms of professional advancement opportunities in the scientific community in Denmark. Participating in development research to a significant number of individuals is seen as being unhelpful to career prospects.

Proposals to address these problems are included in the recommendations.

7. TOR6: Impact

Key Policy Issues

- “Means for better co-ordination between the Danish actors and instruments ...should be established to ensure optimum effectof Danish agricultural research for development.” (#1, p. 20).
- “Project implementation did not really get started until 1995, and thus the effect of the initiative so far has primarily been to create awareness and encourage political understanding of environmental problems” (#2, p. 9).
- “The responsibility for measuring both the process and impact of an ASSP [agricultural sector support programme] rests with the government...The responsibility for evaluation of Danish assistance lies with Danida....Danida will [undertake] one review per year ...to monitor progress,..,to plan and decide on activities, budgets and disbursements... [S]ome programme components may warrant a separate evaluation.” (#3, p. 147).
- Mention is made of the importance of monitoring and longer term impact work as important (#4, p. 20).
- The balance between basic and applied research is important, but the transfer of technology and its adaptation is central as learnt from “the experience of Danish development assistance”. (#5, p. 21).

Danida does invest significant effort in undertaking evaluations of ongoing research projects. The team was provided with evaluations covering many of the programmes visited during their field visit in Denmark. While these **reviews were comprehensive in terms of detailing activities undertaken during the project, few were particularly analytical and provided little guidance for learning from the work undertaken.**

There were evident problems with the structures and mechanisms currently used to assess impact and to develop new ideas. Many of these problems have already been raised under preceding terms of reference and do not need repeating here. The recommendations produced by the team focus, to no small extent, on addressing this issue.

Another obvious problem issue was in defining the responsibility for ensuring uptake of research results. One point of view offered to the team was that good research would always be taken up so that, with a strong focus on quality, the issue of uptake was largely dealt with. On the evidence provided, and from experience in development research generally, this interpretation is weak. As noted earlier in this report, the problems facing the developing world are likely to intensify markedly in the coming decades. The rate of change needed, and the impact required are such that all researchers need to take much greater cognisance of the issues of uptake. Not all research can (or should) have immediate and widespread impact. The nature of many of the problems facing the poor in developing countries is intractable – and thus a long term perspective is needed to complement more immediate problem solving activities. However, even in long term research programmes, issues of uptake pathways and responsibility for bringing the results of research into practice need explicit and early consideration, with proper responsibilities defined and thought through.

8. Recommendations

In the agriculture and natural resources field, three overarching policy directions – ‘the three Ps’ – have been mentioned repeatedly in documents:

- Partnerships
- Poverty
- Production.

‘Partnerships’ includes institutional capacity-building (both Danish and LDC), human resource development and empowerment. ‘Poverty’ includes targeting research specifically to the needs of the poor, as well as equity, gender and intergenerational aspects. ‘Production’ includes technologies, conservation, sustainability, food security and environmental change issues. The recommendations are aimed at helping bring these ‘three Ps’ centrally and explicitly into the research agenda.

The dominant conclusion reached by the team following its review was the need to address the problems in linking funding to priorities. This clearly has implications beyond the agriculture and natural resource area. Researchers are best placed to know their strengths and what best they can do. They are not consultants. Their contribution to development is their knowledge, creativity and fresh thinking. The team has outlined a structure which enables these specialists to set these assets in a context that efficiently and quickly advances the process of development. The objective is to create the needed link between policy and research.

Finally, the development research community needs to become more evidently inclusive, to invest in its own capacity, and to encourage and sustain creativity and innovation. This will require regular analytic critical reviews of progress, programmes, and priorities. The proposed structure is intended to facilitate greater inclusiveness and transparency within and amongst the various groups participating in development research in Denmark.

Guiding Principle

The recommendations are offered primarily to address the process of bringing policy, research, and development implementation closer together – but not without stifling innovation, creativity, and the wise use of skills within the Danish resource base.

If it is accepted that Danish funding for development research from Danida should be directed to supporting *development processes*, this review has found a number of worrying tendencies:

- A small amount of research has little obvious direct development benefit; a larger body of research has *assumed* development benefits but the link has never been explicitly drawn, nor indeed been requested to be drawn
- Policy statements are dispersed and muted. They do exist, but not in a form that can readily be applied to the situation of a researcher designing a project that can meet policy priorities
- The funders, Danida, have made a virtue out of a necessity occasioned by their modest staffing of research in-house. They have a ‘hands-off’ policy that the

researchers will know best what is wanted [“if it is good research, then it will be applicable”] – so the link from policy to research is weak

- The researchers complain they do not know what will be supported, that they invest effort in what they feel is good research, but their good ideas are often rejected – so *de facto* policy messages are not being received by researchers or researchers are failing to pick them up
- The review process for research proposals is largely conducted by senior researchers, who develop their own criteria, who have their own standards of what they mean by ‘quality’ and who may or may not include development policy criteria in their judgements (importantly, there is no mechanism to insist that they do). Danida has final veto but based on little knowledge of the proposals and only gut feeling to screen out the silliest – as opposed to promoting those that most closely support policy
- The research outputs themselves, while of high standard, rarely complete a circle back to policy – so research is not affecting policy.

The failure of communication between research and policy results in a general failure to exploit the undoubted strengths and skills of Danish research in support of the excellent reputation and direction of Danish development assistance.

The recommendations from this report are intended to provide guidance to six central questions:

- What can the research community do?
- What can Danida do?
- What can research administrators do?
- How can researchers help themselves?
- How can the skill base be broadened?
- How can quality be maintained and improved?

Recommendation 1:

The key role and function of research as part of the necessary operation of development aid needs to be restated and clarified

Support for a lively and relevant research programme has to be assured from the highest level of Danida management at the outset. The priority research issues in the context of Danish national policies, the international agendas and emerging issues, and the needs of developing countries need to be mapped out and agreed. **Danida from the highest management level should reiterate its commitment to research in support of development aid. Without the fulfilment of this recommendation, the subsequent recommendations are unlikely to lead to the necessary reforms being implemented.** Danida must take the first step at the highest (ministerial) level by recognising the important role of research in planning, designing, implementing, monitoring and evaluating the Danish aid effort, and committing itself explicitly to the reform process involved.

Research is only part of the agenda associated with Denmark’s development cooperation effort. The skills and background necessary to inspire and lead a creative research programme are different in substance and degree from those required in diplomacy and the top levels of administration. But commitment from those providing the overall leadership of, and direction to, Danida is an essential prerequisite to the reform process consequent upon implementation of the recommendations which follow. A common

and agreed agenda needs to be developed through the public sharing of reservations and problem areas. Such problems need to be resolved clearly and with common understanding as the core of the start of the reform process. Without such commitment from management, the recommendations which follow will lack legitimacy and consequently fail to produce much needed change.

Recommendation 2:

Research Administration; all stakeholders must jointly sort out the administration of research

The review team felt that there is confusion and complexity in the sources of funding, the procedures for application and the means of review. The current structure has largely grown organically as new needs have arisen or been perceived. The development research effort has grown to the point that it requires a new streamlined structure which is both efficient and open. Such a structure should also incorporate the following features:

- **Adequate resources should be given to review and programme development** (e.g. reviews of methods and approaches). Research systems in other countries typically devote 10 to 15 per cent of the research budget to programme development, review, administration, monitoring and evaluation. This area of research may be labelled development research methodologies.
- **There need to be explicit pump-priming funds for new ideas.** This will encourage innovation, interesting new ideas, and initiatives from the research community. Some funds should be allocated for preliminary work which is shown to be necessary for the preparation of later and more substantial proposals. The criteria used for reviewing such proposals should emphasise intellectual and scientific excellence with lower priority being given to immediate problem solving and application. Implementation will require a structure to accept such ideas and to screen them for quality as well as long-term future potential. The structure will include an appropriate administrative and management body to oversee the funding balance between generic and applied research; between topics and themes; and national and international priorities in line with development aid policy and any other stated criteria.
- **Most research funds should be devoted to problems prioritised by sectoral programmes (e.g. agriculture, environment, health, education) and sub-sectoral programmes (e.g. water, crops, conservation).** However, for these funds to be used effectively for problem solving and addressing the core issues of poverty, a proper allocation is needed. Such a mechanism will enable efficient communication of sector needs to research groups, combined with an effective project development and review process.
- **Evaluations and project reviews should be more incisive and critical.** This will need tougher and more analytic initial evaluations of proposals, mid-term reviews of larger projects and final evaluations. The result will be better monitoring of impact, which, in turn, will provide guidelines and direction to new programmes and projects. Thus both researchers and research administrators learn from previous experience and are able to use their knowledge of what has worked and what has failed into new activities and programmes.

Initially the team was reluctant to recommend a detailed structure. The feeling was that this report should outline the principles on which such a structure might be developed but that the details were best worked out by those directly affected. However, following

the presentation of the draft report, it was evident that both Danida and the research community felt that the report should attempt, at a minimum, to develop the structure required. Appendix 1 of this report includes details based on the team's assessment of the changes needed, within their understanding of what would be both acceptable and workable. **Importantly, RUF would be disbanded and its functions incorporated within the proposed new funding structure.** The structure could perhaps also extend to health, social sciences and other development-related research.

Recommendation 3:

A series of thematic workshops should be convened by NETARD to agree upon priorities for development research in agriculture and natural resources within the context of Danish aid over the next decade. The goals of these workshops would be to:

- Involve all stakeholders in Danish development research in agreeing upon or adapting the recommendations in this report with the goal of providing intellectually challenging and relevant research which supports Danida's publicly stated objectives
- Create a shared vision of priorities for research between all stakeholders in Denmark and overseas
- Raise awareness of the importance of research in this sector of Danida's programme
- Organise the publication of a comprehensive set of guidelines and manual for stakeholders who undertake, administer and apply development research for Danida. (see Recommendation 5).

Care will need to be taken to ensure the inclusion of all important stakeholders in the research process. These may include Danida directors, Chief Technical Advisors, representatives from the Research Office of Danida and from sector programmes, key individuals involved in RUF, ENRECA, National Research Centres and other institutions, and representatives from the research community in the universities.

The participants in all these workshops should be relieved of some of their administrative duties in their home institution (and funds provided for replacements where appropriate).

Recommendation 4:

Appropriate administrative and monitoring mechanisms need to be in place

In order to tie research much more closely to Danish development policy and to facilitate the process of learning from research outputs, there needs to be set in place appropriate administrative and monitoring mechanisms that guide the initial development of the research ideas and follow through to the delivery of outputs to the right clients in the right form.. These mechanisms must, above all, be transparent. They should be an essential output from the thematic Workshops. Implementation should be delegated to the subcommittees. The aim is to:

- Give a clear framework for the initial development of a research proposal – so they would be included in the *Guidelines*. (see Recommendation 5)
- Enable planning of research activities that are directed towards the achievement of higher level goals set by Danida

- Provide the means to monitor progress of the research, for the benefit of both the funder and the researcher
- Identify the means of uptake and pathways for delivery of the research findings.

A flexible Logical Framework Analysis (LFA) approach is strongly suggested with a hierarchy of objectives. Flexibility in the use and operation of LFAs is urged. Logical Frameworks have been seen (and have been used) as a straitjacket for bureaucratic monitoring purposes. This is not the intention of this recommendation. LFAs should be modified as the research progresses, although changes would need to be negotiated between the funders and research administrators on the one hand, and the researchers on the other. The specific outcomes (or Outputs) of research cannot always be predicted.

Appendix 3 provides further suggested design aspects for an LFA approach suitable for research monitoring.

Recommendation 5:

A document be produced with the (illustrative) title of “Guidelines for the Preparation of Research Proposals for Danish Development Aid Funding”

A possible outline for this document is detailed in Appendix 4. At a minimum it would be expected to include details on Danish aid policy, the role of research in addressing priority problems, monitoring and milestones, and application processes.

Recommendation 6:

Rethinking the issue of quality development research

The absence of any real national consensus on what constitutes development research and how (and what) quality criteria are appropriate under varying circumstances creates an environment in which researchers and development practitioners are continually pulling in different directions. The chasm of misunderstanding that divides Danida sector programme staff and many of the research community derives directly from this lack of consensus.

The team does not offer solutions to this issue, nor is it appropriate that they should. Consensus can only be reached through internal discussion and debate (albeit mediated or informed by outside participation if helpful); it cannot be imposed from outside. However, in order to start the discussion, the team suggests that the following items (several of which have been mentioned in preceding recommendations and are included here again for emphasis because of their importance) could form the basis of an agenda:

- Broadening the criteria for development research to give adequate weight to relevance and applicability
- Ensuring that *all* peer-reviewers have sufficient and practical development experience
- Developing robust criteria for screening research proposals
- Making sure that all reviewing is transparent and accountable.

Recommendation 7:

Broadening the skills base

Denmark has invested in the development of a strong national scientific community and the necessary institutions to support them in their work. There are several institutions (and many individuals) who have an explicit interest in becoming actively involved in development research. Presently they find themselves largely excluded for a variety of reasons – lack of the necessary field experience, promotion opportunities, and bias in research funding against applied and interdisciplinary work (making team activities difficult). All these have been detailed within the body of the report.

Opportunities need to be created to encourage late comers to the development research process to enter the field. There are a number of individuals and institutes which have expertise that will be needed to address the research agendas laid out in the various Danish government policy documents. The entry of these late comers needs to be facilitated so that the range of expertise and skills available is both broadened and deepened. The team recommends that specific attention be paid to encouraging new actors to join the development research community.

This will involve investing in creative but less experienced individuals. Opportunities can be made for such persons to become JPOs at one of the IARCs, join an ENRECA activity or participate in other attractive professional opportunities. Funding, through the CRC subcommittees, can be made available to encourage small, high quality research groups as well as inclusive networks, teamwork, and research support to ongoing development projects.

Readily accessible and user-friendly information should be provided to researchers so as to maximise the numbers of high quality and relevant proposals that get funded. The funding opportunities should be broadened so as to provide diversified research opportunities, combined with information and encouragement for new applicants. The aim is to provide an environment in which researchers do useful development research and develop national capacity for the future. Teamwork can be facilitated through continuing the trend towards ‘centres without walls’. Funding for such centres should be lean and taper to zero, moving them onto diversified and competitive funding. Pump-priming competitions, calls for concept notes, prize competitions, and other opportunities for researchers should be facilitated.

APPENDIX 1

A Revised Research Administrative Structure for Research Funding

The structure is simple and consists of a Central Research Committee (CRC) which is served by a number of subcommittees. In our estimate, six subcommittees would be sufficient. But the number can be adjusted according to need and circumstances without affecting the overall structure and its mode of operation.

Central Research Committee

The Central Research Committee implements (and periodically reviews) the research Guidelines, draws policy together to operate research funds and oversees the operation of a number of specialist subcommittees. These subcommittees call for, review, and monitor actual research proposals in priority areas defined by the CRC, as advised by the Minister and Danida senior staff.

We suggest that the CRC have a small research-dedicated membership – three persons, one each from Danida, a Danish research institution, and an independent chair – and be able to draw upon some core funds to develop new programmatic areas. *RUF would be disbanded and its functions incorporated within the proposed new funding structure.*

The CRC would receive annual reports from its subcommittees. These subcommittees are, in fact, managers of specific aspects of the overall programme. From information provided by the subcommittees, the CRC would compile an annual research report to be tabled by the relevant minister in the Danish parliament. Its key aim will be to demonstrate the impact of Danish development funding on the lives of poor people in developing countries, to advise the Minister on new and emerging research themes, and to justify the expenditure of taxpayers' money on such activities.

Nomination of membership to CRC would come from the Minister, acting on the advice of Danida, NETARD or other appropriate bodies. Appointment would be for a fixed term of 5 years. Time spent on CRC business would be remunerated either to the individual or to the seconding institution, as appropriate.

CRC Sub-committees

The CRC subcommittees would be similar in structure to the CRC – although the work of these subcommittees may require a slightly larger membership. Each subcommittee will have specific responsibility for a major and defined Programme. It will develop its own Programme Logical Framework which will be approved by the CRC. The subcommittees represent and implement defined priority activities. Subcommittees would have oversight of proposals and be the accountable body for monitoring of all aspects of project progress and completion. Each subcommittee would provide an annual report, listing current projects and showing how the research is

benefiting both Denmark and the target developing countries. The annual reports of subcommittees will detail programme targets and information on meeting these over the reporting period. New targets may set as agreed with the CRC for future periods.

To fulfil these requirements, they need adequate resources to administer the funds they are responsible for. Their members should be remunerated for time spent. Each subcommittee will require a budget for independent review of proposals, mid-term reviews and end of project and final technical reviews. A small programme advisory committee (which might meet 2-3 times annually) could help provide long term consistency but the decision on whether to establish such a committee would be left to each subcommittee. Ideally, most subcommittees (or, at a minimum, their programme advisory committees) would include experienced researchers from the developing world. The imaginative use of the Internet could ensure that the time and resource cost of overseas participation was reasonable (as much to hard pressed overseas researchers as to Danida budgets).

Each subcommittee would have agreed screening criteria for research proposals within its area of competence. The criteria to be used would be public. Each subcommittee would need to provide for internal audit if necessary, the scoring of each proposal on the criteria. In the discussion which follows, some illustrative weightings are provided – the eventual weightings need to be specifically agreed as an important outcome of the consultation process recommended in this report.

The CRC would fund the various subcommittees on a rolling three-year basis, according to policy needs, the success of existing projects, and any demands identified.

The following subcommittees are proposed:

- *Innovations*. To deal with new ideas; to provide pump priming funds; to provide funding sources for programme development, cross-sectoral, inter-disciplinary and multi-disciplinary research. It would develop a range of instruments to attract good proposals (e.g. essay competitions with prizes, the preparation of tenders for “state of the art” reviews) and liaise with other subcommittees as necessary. The weighting of criteria used might be: innovation and creative thinking 30 per cent, scientific excellence 30 per cent, practicality of follow-up proposals 20 per cent, general relevance to Danida’s development policy 20 per cent. The share of the total research budget might be around 10 per cent.
- *Research methodologies*. This subcommittee would elicit and screen research proposals which aim to improve the management, administration and implementation and impact of Danida aid. Its main clients would be Danida itself, client country institutions and poor people in client countries. Weighting of criteria might be: general relevance to Danida’s stated policies and existing practices 40 per cent, benefit to client country institutions 20 per cent, benefits to end users 20 per cent, practicality of follow-up proposals 20 per cent. The share of the total research budget might be around 5-10 per cent.
- *Centres*. To consider proposals for new Centres, the core budgets for these Centres, and monitor their progress against indicators that are agreed with Centre management. The mandate of this subcommittee would include the IARCs and associated collaborative and JPO-support programmes. Typically, all new Centres would be “Centres without Walls” and would attract core funding from the allocated budget to this subcommittee for two to three years. Funds would taper to zero thereafter. They could of course,

apply to new funding to any subcommittee in future years, but core funding for more than three years would be unusual. The size and structuring of funding for Centres would have to meet budgetary limits set for the subcommittee with roll-over provisions between one year and the next. The weighting of criteria might be: interdisciplinarity 15 per cent, benefits to client country institutions 20 per cent, quality and quantity of intermediate and final products 30 per cent, practicality of research modalities and follow-up proposals 20 per cent, relevance to country sector programme research priorities, 15 per cent. The share of the total research budget might be around 25 per cent.

- *A+NR Sector 1 – Agriculture.* To handle all project proposals in the broad area of agriculture. This subcommittee will develop a coherent Agriculture Programme Logical Framework. It will put out specific calls for projects costing up to a maximum of, say, DKK2 million per year. Above this, then the Centres subcommittee would be involved. The weighting of criteria might be: scientific excellence 30 per cent, relevance to sector country programme research priorities 30 per cent, benefits to client country institutions 20 per cent, practicality of research modalities and follow-up proposals 20 per cent.
- *A+NR Sector 2 – Environment.* This would handle projects in the same way. It may receive some funding and policy influence from Danced and one of its three members would be proposed by Danced. Both Sector 2 and Sector 3 subcommittees would have similar weighting criteria. Cross-sectoral projects would be negotiated between the appropriate subcommittees.
- *A+NR Sector 3 – Renewable Natural Resources* (including forestry, fisheries and cross-disciplinary aspects of land use and environment). This should operate as per the other sectors.

APPENDIX 2

Proposed Agendas for Development Research Workshops

A first plenary workshop would consider the following agenda items:

- A review of the structural and procedural recommendations of the Commission. These are directed at the improvement of the vehicles for research (see Recommendations 2) and have to command agreement in outline before the subsequent workshops are organised. Otherwise, the Guidelines cannot provide information on the modalities by which research is judged, funded and implemented
- The procedure to be followed to produce the Guidelines (see Recommendation 4)
- The formation of sub-committees as outlined in Recommendation 2.

This meeting would be followed by smaller workshops attended by representatives delegated by stakeholder groups to attend to the detail necessary for implementation. The proposed agendas for each workshop are:

- The needs of development research by clients (with particular emphasis on reaching the poor in Danida focus countries and addressing the concerns of the Danish taxpayer)
- Danish National Policy and its implications for its research priorities
- Current and emerging international research agendas and appropriate roles for Danida research funds
- The developing and sustaining the national skill and resource bases to deliver the necessary research (see Recommendation 7)
- Formation of a Steering Committee for the production of the Manual and Guidelines. This would retain at least one member of each stakeholder group who would liaise informally with the larger 'hinterland' group which they represent. The group should be provided funds to hire in secretarial, research and logistic support. It should not be constituted by an outside consultancy group, but from a spectrum of stakeholders in development research (see Recommendation 5).

APPENDIX 3

Preparation of a Logical Framework

In the following suggestions, research programmes and research projects are distinguished. A programme should consist of a major initiative in one or a group of crosscutting sectors – e.g. biodiversity conservation, water resources. A project is the Measurable Indicator (MI) at Programme Purpose level that the Programme Goal is being achieved.

A high level **GOAL** – set by Danida in consultation with developing country clients as well as Danish policy makers. The Goal is essentially an expression of Danish development policy.

A typical Programme Goal⁴ for research support to natural resources could be: “Benefits to poor people improved through the better management of natural resources.”

A typical Project Goal in the water resources sector of a natural resources programme could be: “Commodity production increased through improved conservation and use of water resources.”

A **PURPOSE** (or set of purposes) to which the research will make a contribution: i.e. the effect or impact of the research. It would be appropriate for researchers and policy-makers to set these purposes jointly. The outputs of the thematic workshops (see Recommendation 1) would provide Programme and Project Purposes.

A typical Programme Purpose could be worded as in the above Project Goal.

A typical Project Purpose could be: “Improved techniques of rain-water harvesting and water conservation tillage developed and promoted”.

The **OUTPUTS** are the tangible ‘deliverables’ of the research, or what the research will actually achieve. For Programme Outputs this would likely be set by research bodies and research managers. For Project Outputs this would be largely the design of the researchers. The Outputs provide a description of the methods, techniques, technologies and models that the research will achieve by the end of the planned research period. Verification of the Outputs gives the main means of monitoring research quality and relevance.

The **ACTIVITIES** are the main actions that have to be undertaken to accomplish the Outputs. Programme Activities will be the funding allocation and commissioning of research projects. Project Activities would be the set of actions needed to undertake the research: for example, “A needs assessment workshop with stakeholders to determine village-level water use and shortages.”

4) These examples are given for illustrative purposes only. Also a Project Goal would be a Programme Purpose – see subsequent discussion.

1. The logical framework aims to promote good project design by clearly stating the defined project logic and components. The logical structure linking the components takes the form: IF [activities] AND [assumptions] THEN [outputs], IF [outputs] AND [assumptions] THEN [purpose], and so on.
2. The logical framework consists of a 4 x 4 matrix, with a vertical hierarchy of objectives at the (i) goal, (ii) purpose, (iii) output, and (iv) activity levels. The horizontal components are (i) summaries of the objectives at each level, (ii) performance indicators for achievement of those objectives, (iii) the sources needed to verify the indicators, and (iv) the important assumptions for moving from one level of objectives to the next.
3. The form is thus:

| | Narrative Summary | Measurable Indicators | Means of Verification | Important Assumptions |
|------------|------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Goal | | | | |
| Purpose | | | | |
| Outputs | | | | |
| Activities | | | | |

4. The components of the matrix are defined as follows:
 - a) The *goal* is the higher level objective or longer-term impact of the project on national or development agency objectives.
 - b) The *purpose* is the measurable near-term impact of the project that is the final accomplishment of the project.
 - c) The *outputs* are the results of the project that the project manager can guarantee.
 - d) The *activities* are the key activities undertaken by the research team that summarise the action strategy to produce the outputs.
 - e) The *indicators* are measurements to verify to what extent the objectives at each level are achieved, targeted in terms of quantity, quality and time (QQT).

The *means of verification* are the specific sources of data necessary to verify the indicators at each objective level.

The *assumptions* are important events, conditions and decisions outside the control of the project that are necessary for meeting the objectives.

The *pre-conditions* are requirements that are essential to the successful implementation of the project but not under the project's direct control. They must be negotiated prior to the project in order that, to the best extent possible, they are assured. The procedure for constructing the logical frameworks for a project proposal is as follows:

Certain cells of the matrix must be filled from the relevant programme logframe as shown below. The persons preparing the project proposal should then formulate entries for the remaining cells entirely or in part.

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumptions |
|---|---|--|--|
| Goal | | | |
| Insert Programme Purpose that the project addresses | Insert OVIs corresponding to the selected purpose | Insert MoVs corresponding to the selected purpose | Insert assumptions corresponding to the selected purpose |
| Purpose | | | |
| Insert relevant Programme Outputs | Formulate OVIs to verify accomplishment of project purpose | Formulate MoVs which draw mainly on sources of information that are not under the control of the project | Describe important external factors needed in order to attain Project Goal |
| Outputs | | | |
| List the results that will be achieved (i.e. the changes that the project definitely can achieve) all of which will best enable attainment of the OVIs stated at purpose level) | Specify how attainment of this change can be monitored in terms of QQT. A process statement (i.e., less precision on QQT) may be valid for some outputs | Formulate MoVs which draw mainly on sources of information that are under the control of the project | Insert what is relevant to attainment of the purpose of the project |
| Activities | | Budget and milestones | |
| Define the activities that are required to attain each output and satisfy the defined OVIs | Insert budget List milestones that show progressive implementation and completion of each activity | Insert what is relevant to attainment of outputs of the project | |

APPENDIX 4

“Guidelines for the Preparation of Research Proposals for Danish Development Aid Funding”

The contents of this document may include the following:

- Danish aid policy. A concise (say, five page) review of key policy documents, highlighting major themes and structures and procedures for delivery
- The general implications for the major direction and roles of research to support this policy.
- Major cross-cutting themes in Danish aid:
 1. “The voice of the poor”. How does Danida listen and incorporate it into Danish aid and what roles research may have to facilitate this?
 2. The sustainability of development knowledge – collaboration, institutional development and knowledge transfer
 3. The identification of demand-led research agenda – what are the agendas of the poor in Danida focus countries, their governments and major stakeholders? What are the means by which these agenda may be negotiated and taken up by Danida?
 4. Learning by doing – a review of learning from successes *and* failures and how to benefit from cumulative learning. This is difficult to write, but, if done well, is immensely valuable to all the research stakeholders.
- Structures for delivery (see Recommendation 2)
- Monitoring and milestones. The necessary structures and procedures to be put in place by all researchers
- Research priorities. These may be divided into over-arching priorities which are expected to remain stable for five to ten years and emerging issues. These last might form a loose-leaf part of the manual and be replaced every two or three years. There should be a clear listing and description of research priorities of at least 500-2000 words in each instance
- An explanation of different types of research, the subcommittees to which they should be addressed and the criteria by which they will be judged. The manual should set down clearly the priorities and their weightings for each subcommittee. The weighting should vary between each type of research, and this must be stated. Appropriate measures for measuring impact and evaluation must be detailed. Log frame analysis might be made mandatory for larger research projects over a specified ceiling. For smaller projects clear instructions for researchers to outline descriptions of the importance of the research, identification of clients, pathways, uptake and outputs, should be given.

ANNEX 1

Questionnaire, Field Programme, and People Visited

Questionnaire

The profile included the following questions:

1. *Institutional Development Strategy*

- 1a. What are the major reasons for undertaking development research in your institution? (Focus on the period 1990 to present unless there are evident reasons for choosing a different time period – if this last is the case, please explain and justify)
- 1b. What are the principal objectives of the development research undertaken by your institution? (Please use mission statements and other concise statements of objectives to illustrate your response)
- 1c. What criteria are used for evaluating progress in meeting these objectives? These may have changed over time, if so, please provide explanations and justification. (Summaries of internal evaluations, institutional discussion papers may be used to elaborate the responses to this question)
- 1d. Danish development policy aims at the establishment of long term partnerships, with all partners showing a strong commitment to creating widespread change and poverty reduction. How are these aims and objectives met within the institutional strategy?
- 1e. How does involvement in development research contribute to enhancing institutional capacity and expertise in your institution and those partners with whom you work? Concise examples and data should be used to illustrate the response to this question.

2. *Research Agenda*

- 2a. What has been the institutional development research agenda over the period 1990-present?
- 2b. What criteria are used to develop and expand (as appropriate) this agenda?
- 2c. How are these criteria developed and applied and by whom? (Please provide detail of partner institutional involvement in this exercise as appropriate)
- 2d. What projects are in place, or planned, to address the main components of this agenda?
- 2e. What projects did your institution plan in terms of the main research agenda but failed to obtain funding for? Please provide short concept notes of these projects and your assessment of the reasons they failed to attract support.
- 2f. How has each funded project been evaluated?
- 2g. What plans are, and have been, in place for continuing evaluation of each new or ongoing project?
- 2h. In terms of the main research agenda, what are the most important skills and experience needed?
- 2i. Where are such skills available either in your institution or contracted in? Please provide listings under each research agenda item together with a short paragraph to illustrate each individual's appropriate experience.

3. Research Support

- 3a. What are the main sources of support for development research at your institution?
- 3b. What mechanisms are used to review possible research proposals both within the institution and by the main funding body/bodies?
- 3c. What changes should or could be made to these mechanisms to improve the quality and focus of individual research proposals? (Please refer back to question 2e)

4. Research Outputs

- 4a. Detail those research outputs that have most successfully met the institutional objectives in undertaking development research.
- 4b. What were the main factors which contributed to success in each case?
- 4c. In each case, how have successful outputs been used to strengthen partnerships and enhance quality in the overall research agenda?(Please provide summary information and data to support each example)

5. Are We Missing the Point?

- 5a. Are there major constraints against, or opportunities for, your institution's effective participation in, and fulfilling the objectives of, the national development research effort? (Examples might include suitable 'pump-priming' funds, bureaucratic obstacles to development of proper partnerships, innovative use of the Internet to promote and extend partnerships etc.)
- 5b. Are we asking the right questions? If not, what additional issues should be explored?

Field Visit Programme

Programme for Specialist Review Team (Agriculture and Natural Resources)

| Date | Activity | Time | Venue |
|-------------------|---|-----------|------------------------|
| Monday, Nov 06 | MB and PB meet with AS to review programme | Morning | Development Associates |
| Monday, Nov 06 | Association of young researchers (FORYNG) | Afternoon | Development Associates |
| Tuesday, Nov 07 | MB and PB meet with researchers involved in ENRECA programmes in agriculture | Morning | KVL |
| Tuesday, Nov 07 | MB/PB visit to Danida Forest Seed Centre MB/PB visit to Danish Forest and Landscape Research Institute (director, int. coordinator) | Afternoon | DFSC DFLRI |
| Wednesday, Nov 08 | MB/PB meet with director and researchers at CDR | Morning | CDR |
| Wednesday, Nov 08 | Meeting with researchers/institutes on development-oriented cross-disciplinary research within ARD (past experience, on-going and planned projects – e.g. SASA, SEREIN, DIVA, ENRECA, RUF etc.) | Afternoon | CDR |
| Thursday, Nov 09 | MB/PB meet with researchers at Universities of Copenhagen (Geography) and Roskilde (IDS) | Morning | CU |
| Thursday, Nov 09 | MB/PB discussion meeting on gaps, and new research areas/presently not Danida supported Evening: Meet with Director and NETARD Board | Afternoon | CU |

| Date | Activity | Time | Venue |
|------------------|---|-----------|--------------------------------|
| Friday, Nov 10 | MB/PB meet Danida – TSA 6 + water, Multilateral office, Environmental Secretariat Jorgen Henriksen – head of TSA 1 | Morning | Danida |
| Friday, Nov 10 | MB/PB meet with StS. 4 (CGIAR/ENRECA) MB/PB meet with RUF representatives | Afternoon | Danida |
| Monday, Nov 13 | MB and MS visit to KVL (meetings with institutes, vice-chancellor, “ulandsrådet”, int. coordinator) | All day | KVL |
| Tuesday Nov 14 | MB meets researchers from Danish Pest Infestation Laboratory (DPIL) and Institute of Seed Pathology | Morning | DGISP or DPIL |
| Tuesday Nov 14 | MB travel to Risoe, then to airport to meet Alex Percy-Smith. Fly to Jutland and spend night at Viborg | Afternoon | Dr. Jahoor, Dr. Percy-Smith |
| Wednesday Nov 15 | MB visits DIAS HQ in morning MB visits AAU pm (University of Aarhus, Department of Biology) and is driven by Alex Percy-Smith to Flakkeberg in the evening | All day | DIAS Foulum and AAU |
| Thursday, Nov 16 | Visit DIAS Flakkeberg in morning | Morning | Dr. Alex Percy-Smith |
| Friday, Nov 17 | Torben Brylle, Danida, and Janie Eriksen, Danida | Morning | |

MB = Malcolm Blackie (consultant, East Anglia) – full time consultant on agriculture and NRM

MS = Michael Stocking (consultant, East Anglia)

PB = Piers Blaikie (consultant, School of Development Studies, University of East Anglia)

AS = Anne Sørensen (co-ordinator NETARD) – part time assistance to MB

People Visited

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| Ms. Margrethe Holm Andersen Professor Christian Bach | TSA6, Royal Danish Ministry of Foreign Affairs The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Torben Birch-Thomsen Dr. Jannik Boesen Professor Ole K. Borggaard | Institute of Geography, University of Copenhagen Centre for Development Research The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Kirsten Brandt | Department of Fruit, Vegetable, and Food Science, Research Centre, Aarslev, DIAS |
| Professor Leon Brimer | The Royal Veterinary and Agricultural University, Copenhagen |
| Mr. Torben Brylle Professor Tomas Cedhagen Dr. Svend Christensen | Head of Multilateral Assistance, Danida University of Aarhus Department of Agricultural Engineering, Research Centre Bygholm, DIAS |
| Professor Anders Dalsgaard | The Royal Veterinary and Agricultural University, Copenhagen |
| Professor Vibeke Dantzer | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Bjerne Ditlevesen Ms. Janie Eriksen Professor Peter Esberg | Director, Tree Improvement Station Environmental Secretariat, Danida Department of Ecology, The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Flemming Frandsen | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Lars Graudal Professor Finn Helles | Deputy Director, Danida Forest Seed Centre The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Arne Helweg | Department of Crop Protection, Research Centre Flakkebjerg, DIAS |
| Mr. Jørgen Henriksen | Chief Technical Advisor, Agriculture, Forestry and Fisheries, Royal Danish Ministry of Foreign Affairs |
| Dr. Preben Holm | Department of Plant Biology, Research Centre Flakkebjerg, DIAS |
| Dr. Bente Ilsøe Dr. Ahmed Jahoor Dr. Jørgen Jakobsen | Department for Development Research, Danida Risø National Laboratory Department of Crop Protection, Research Centre Flakkebjerg, DIAS |
| Professor Mogens Jakobsen | The Royal Veterinary and Agricultural University, Copenhagen |
| Ms. Dorrit Jensen | Coordinator of Development Activities, The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Hoegh Jensen Professor Jens Raunsø Jensen | KVL (FORYNG) The Royal Veterinary and Agricultural University, Copenhagen |
| Professor Lene Jespersen | The Royal Veterinary and Agricultural University, Copenhagen |

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| Dr. Erik Kjær Professor Niels Ellers Koch | Danida Forest Seed Centre Director, Danish Centre for Forest, Landscape, and Planning |
| Dr. Lars Krogh Dr. Carl Larsen Professor Laurids Lauridsen | Institute of Geography, University of Copenhagen KVL (FORYNG) Department of Geography and International Development Studies, Roskilde University |
| Professor Henrik Lehn-Jensen | The Royal Veterinary and Agricultural University, Copenhagen |
| Professor Christian Lund | Department of Geography and International Development Studies, Roskilde University |
| Professor Jørgen Madsen | The Royal Veterinary and Agricultural University, Copenhagen |
| Professor Jakob Magid | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Henrik Marcussen | Department of Geography and International Development Studies, Roskilde University |
| Dr. S. B. Mathur | Danish Government Institute of Seed Pathology for Developing Countries |
| Dr. Ole Mertz Professor Kim Michaelsen | Institute of Geography, University of Copenhagen The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Søren A. Mikkelsen Professor Birger Lindberg Møller | Deputy Director, Research Centre Foulum, DIAS The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Carmen Mortensen | Danish Government Institute of Seed Pathology for Developing Countries |
| Professor Lisa Munk | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Gunnar Nielsen Dr. Ivan Nielsen Professor Peter Oksen | Risø National Laboratory University of Aarhus Department of Geography and International Development Studies, Roskilde University |
| Dr. Hanne Østergård | Plant Biology and Biogeochemistry Department, Risø National Laboratory, Roskilde |
| Dr. Carl-Otto Ottosen | Department of Ornamentals, Research Centre, Aarslev, DIAS |
| Mr. Gorm Pedersen | Network for Smallholder Poultry Development, The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Alex Percy-Smith Dr. Anders Permin | Research Centre Flakkeberg, DIAS Network for Smallholder Poultry Development, The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Jans Nytoft Rasmussen | Coordinator for International Relations, Danish Centre for Forest, Landscape, and Planning |
| Dr. Michael Rasmussen Dr. Søren Rasmussen Dr. Helle Ravnborg Professor Annette Reenberg Dr. Inge Sandholt | Institute of Geography, University of Copenhagen Risø National Laboratory Centre for Development Research, Copenhagen Institute of Geography, University of Copenhagen Institute of Geography, University of Copenhagen |

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|------------------------------|---|
| Rector Bent Schmidt-Nielsen | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Henrik Skovgård | Danish Pest Infestation Laboratory |
| Dr. Anne Sørensen | Coordinator, NETARD |
| Dr. Jan Sørensen | Research Centre Foulum, DIAS |
| Professor N. Sriskandarajah | The Royal Veterinary and Agricultural University, Copenhagen |
| Professor Jens Streibig | The Royal Veterinary and Agricultural University, Copenhagen |
| Dr. Hans Thordal-Christensen | Risø National Laboratory |
| Dr. Jesper Waagepetersen | Department of Crop Physiology and Soil Science, Research Centre Foulum, DIAS |
| Mr. Klaus Winkel | Department for Development Research, Danida |

ANNEX 2

Literature and Other Major Material Reviewed

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- 1993, *Evaluation report: Danida Forest Seed Centre*, Copenhagen: Ministry of Foreign Affairs.
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- Graudal L. and Kjær E., 1999, "Priorities and strategies for tree improvement", paper presented at the SAFORGEN Regional Training Workshop on the Conservation and Sustainable use of Forest Genetic Resources in Eastern and Southern Africa, Nairobi, Kenya, 6-11 December, 1999.
- Graudal L., *et al*, 1997, "Planning national programmes for conservation of forest genetic resources", *Technical Note 48*, Humlebaek: DFSC.

- Ilsøe B., 2000, "The Danish approach to supporting national research capacity building", paper presented at an international seminar on Capacity development – different approaches, Umeå University, June 6-7, 2000.
- Ilsøe B., 2000, "Is Small Beautiful? Danida's 10 years of experience with ENhancing REsearch CApacity", paper presented at the International Workshop "Enhancing research capacity in developing and transition countries", Berne, Switzerland, 21-22 September, 2000.
- Jensen A. *et al*, 1999, *Plant Biology and Biogeochemistry Department Annual Report*, Risø: Risø National Laboratory.
- Miløforsskning, 1998, "Theme: sustainable use of natural resources in developing countries", 35, 1-43.
- Nathan I., 2000, "Decentralisation, small farmers and sustainability: the case of the National Tree Seed Programme in Tanzania", paper presented at the 16th Symposium of the International Farming Systems Association, Santiago, Chile, 27-29 November, 2000.
- NETARD, 2000, "Proposed Strategy and Action Plan for Agricultural Research for Development", May, 2000 (mimeo).
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- Schmidt L., 2000, *Guide to handling of tropical and subtropical forest seed*, Humlebaek: DFSC.

ANNEX 3

Major Danish Institutions Involved in Development Research in Agriculture and Natural Resources

Centre for Development Research (CDR)
Gl.Kongevej 5
DK-1610 Copenhagen V

Danida Forest Seed Centre (DFSC)
Krogerupvej 21
DK-3050 Humlebæk

Danish Institute of
Agricultural Sciences (DIAS)
Research Centre Foulum
Postboks 50
DK-8830 Tjele

Risoe National Laboratory
Postboks 49
DK-4000 Roskilde

Danish Forest and
Landscape Research Institute (DFLRI)
Hørsholm Kongevej 11
DK-2970 Hørsholm

Institute of Seed Pathology
for Development Countries (DSPL)
Thorvaldsensvej 57
DK-1871 Frederiksberg

The Royal Veterinary and
Agricultural University (KVL)
Bülowsvej 17
DK-1870 Frederiksberg C

University of Copenhagen (UC)
Institute of Geography
Øster Voldgade 10
DK-1350 Copenhagen K

University of Roskilde (RUC)
Institute of Geography and
International Development Studies
Postboks 260
DK-4000 Roskilde

Danish Pest Infestation Laboratory (DPIL)
Ministry of Food,
Agriculture and Fisheries
Skovbrynet 14
DK-2800 Lyngby

University of Aarhus (AU)
The Institute of Biological Sciences
Ole Worms Allé
The University Campus
Building 135
DK-8000 Aarhus C