

**ROLE OF RESEARCH  
IN DANISH DEVELOPMENT ASSISTANCE**

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## **ABBREVIATIONS**

CGIAR	The Consultative Group on International Agricultural Research
Dfid	Department for International Development, UK
DKK	Danish Kroner
ENRECA	The Bilateral Program for Enhancement of Research Capacity in Developing Countries
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
IARC	International Agricultural Research Centres
IDRC	International Development Research Center
JPO	Junior Professional Officer
MIFRESTA	Miljø-, freds- og stabilitetsrammen
NARS	National Agricultural Research Systems
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Co-operation
RTD	Research and Technology Development
SAREC	SIDA's Research Department
SIDA	Swedish International Development Cooperation Agency
SPS	Sector Programme Support
UNESCO	United Nations Education, Scientific and Cultural Organisation

# **ROLE OF RESEARCH IN DANISH DEVELOPMENT ASSISTANCE**

## **1. INTRODUCTION**

In the series of Working Papers for the revision of "Strategy 2000", the present paper is on the role of research in Danish development assistance. The paper is not a strategy paper, but a paper on issues and options. It does not provide answers and makes no recommendations as to strategic choices. It is meant as a discussion paper on such choices. The paper outlines a number of issues and strategic options, based on past experience of Danish support to research and the utilisation of research in the development process.

Research plays a central role in development and hence in development co-operation between the developing and the developed countries. Research is part of the development co-operation in different ways: Supporting research, research capacity building and education in the developing countries is an aid instrument like similar assistance to other sectors in these countries. The other type is the research taking place in developed countries and in international institutions related to subjects and issues of relevance for the development of the third world countries. Thus research is a specific aid instrument, as well as the knowledge base for problem solving and for the identification and design and implementation of other aid instruments and development policies.

The role of research is to be seen in the larger context of knowledge enhancement, which comprises knowledge management (generation, adaptation, application and dissemination of knowledge). This concept will be further explored, in particular in section 4.

Section 2 is a sketch of international trends, based on a limited selection of literature. The aim is to indicate the most recent thinking of other donors, multilateral as well as bilateral, on the role of research for development.

Section 3 is a brief overview of present Danish support to research. It describes the support programmes and points out issues related to this use of development funds for financing of research activities.

Section 4 presents issues and options pertaining to knowledge enhancement as a key to development and the involvement of the Danish resource base in development co-operation.

Section 5 summarises this analysis in some concluding remarks.

The paper is inter alia based on interviews with selected persons from the Danish resource base, the internal as well as the external and on evaluation studies (see literature list in enclosure.)

## **2. INTERNATIONAL PERSPECTIVES**

### **2.1 Poverty reduction in focus**

Poverty has increasingly come into focus again in the international development debate during the last decade. Poverty alleviation or reduction has become the explicitly stated basic objective for development assistance from most international as well as bilateral donors. General development strategies have also changed from the traditional project approach to a programme- and sector-

programme approach. Such changes in the development thinking, combined with other changes during the decade, such as, e.g. privatisation and globalisation, provide new challenges for research, for the national research communities of the developing countries, for the international research institutes and for the research communities of the donor countries.

Support to research, research capacity building and knowledge management may contribute to poverty alleviation by addressing and proposing solutions to problems, which contribute to the poverty circle. Variations in the patterns of poverty as well as the dynamics of poverty, as they have developed over the last decade, are not well understood. The economic and political changes, which have taken place during this period, seem to have been to the benefit of some poor people in some countries, but not to other groups or countries and some may even have lost or have been further marginalised. The increased play of the market forces, e.g., have been to the advantage of some groups of poor or relatively poor people, but to the detriment of others. In some countries growth seems to have been to the benefit of the poorest of the poor, but inequalities have increased in some cases. In some countries growth has not had the positive effects expected or increased growth has not materialised at all. What are the reasons for these differences, what are the policy implications and how should development assistance be designed to take these differences and changes in the international as well as the national contexts into account?

Therefore research has an important role to play in poverty alleviation, not only by contributing to understanding poverty dynamics and to provide immediate solutions, but also by producing knowledge, that will lead to poverty alleviation in a long-term perspective. The ultimate objective of research development assistance is to enhance the developing countries' own research and development capacity, thereby breaking the poverty circle.

- **The role of science and technology**

In June 1997, the Commission of the European Union declared its support for science and technology to become a key instrument for development. The underlying analysis, presented at a European Conference in Leyden in the Netherlands in March 1997, can be summarised as follows:

The developing countries, particularly the least developed, lag so far behind the developed countries in terms of science and technology investments, that they are unable to gain access to the scientific and technological information crucial for their development. They are therefore at risk of being further marginalised in a world characterised by globalisation and increasing international competition.

Major weaknesses are found both with respect to economic and social disciplines and with respect to natural and technical sciences. In the former area there is a lack of capacity for analyses of development perspectives and constraints and for planning and policy-making. The lack of capacity for planning and policy analysis also puts a severe limitation on public debate and participation in the decision-making process. Such participation is in itself needed as part of a democratic process, but it is also needed for successful implementation of the development assistance, as mentioned above. Lack of capacity in the natural sciences and technical fields in particular, leads to a lack of scientists and technicians and to a limited technological culture with continued dependence on technical assistance from developed countries as a consequence.

In the past, the European Union's contributions to science and technology development in developing countries has mainly been in areas of common importance for all developing countries: natural resources management, agriculture and health. Lack of a strategic framework has however limited the dialogue with the partner countries and this has led to low priority given to this type of co-operation by the local political leaders. It has also meant that there has been little synergetic

effects between research and development aid projects and a tendency to focus on science and technology transfer rather than on building up partner countries' research capacities for technology absorption and local capacity to create research-based innovations.

- **Research as a public good**

Research creates results, which often have the nature of public goods. Global health research or research on global environmental problems generate knowledge, the benefits of which cross borders. As the prevalence of international problems is increasing, there is a case for increasing attention to international public goods. Such goods tend to be under-financed, and particularly the developing countries cannot afford their share and may not have the incentive to participate unless supported by the developed countries for research activities focused on international problems.

## **2.2 Past Experience of Research Co-operation**

Support to research in developing countries and North-South research co-operation has taken many forms over the last 30 years.

- **Links between development assistance and research in a historical perspective**

Jacques F. Gaillard (1994) describes the historical background for research support to developing countries as having evolved over the last three decades from technical assistance, overseas training, institution building, and institutional twinning arrangements to collaborative research partnerships. He furthermore identifies a development over time through partly overlapping phases parallel to the evolution in development assistance: From a problem-solving focus over capacity building to collaborative North-South research partnerships, and he assesses the lessons learnt.

Developed countries with a long colonial history have centres, which are today “centres of excellence” within areas such as tropical agriculture and medicine. Support to science continued as support to the scientific institutions already built, which were staffed mostly by scientists from the North. It was widely believed that development problems could be solved by means of scientific and technical resources from the northern countries. Countries with little or no background as colonial powers have not been tied to the same traditions for research support and co-operation with the developing countries. Some of these, like Canada and Sweden, did create new models for research support under their development assistance back in the 1970s. Other countries, including Denmark, took up research co-operation under separate research programmes somewhat later. Lessons from the Danish experience are discussed in section 3 below.

- **North-South Collaborative Research Partnerships**

Collaborative partnerships are the most recent form of research co-operation, but has been a main form long enough for some lessons to be extracted. According to Gaillard, there is a tendency by the developed country institution to dominate the collaboration. It is therefore important that new programmes are demand-driven and requested by the developing country or jointly by the involved partners. The experience with partnerships, which have originated solely from the North, is not encouraging and different priority setting is visible. Joint interests of the collaborating researchers are very important. It is thus pointed out that, e.g., partnership co-operation on mathematics subjects often are unattractive to researchers of the North, but such subjects are essential for natural, medical and technical disciplines. Furthermore, the unequal partnership is sometimes visible in the division of labour as researchers from the North tend to be more involved in the conceptual work and in

planning and dissemination, whereas the researchers from the South are more involved in the implementation tasks, such as data collection and field experiments.

Carol Priestley (2000) summarises the experience of the bilateral programmes of the development agencies of the Netherlands, Norway and Sweden: They have all moved towards a sectoral approach. The Dutch and the Swedish programmes have encountered problems in the implementation of institution-wide support. Greater involvement of Southern partners is required in policy making, scrutiny and appraisal of proposals with emphasis in particular on sustainability. SAREC has made a determined effort to transfer ownership and responsibility to their partner countries. The Swedish experience also shows that a minimum capacity in the developing country in the field of collaboration is necessary. The Norwegian research support emphasises the research needs of the South, but the equality in partnership is hampered, because funds are allocated to and controlled by the Norwegian partner.

- **The experience on capacity building**

Multilateral institutions, such as the World Bank, have provided project support to research and higher education in developing countries over a long period of time, even though this type of support has had low priority in some periods. A considerable amount of experience is available from this type of assistance. Erik Thulstrup (1999) has summarised this experience, particularly in relation to capacity building. The following builds on this summary.

It is important to distinguish between three different levels of research capacity: partial research capacity, complete research capacity and national research capacity. The first type is established when a researcher or research group is able to perform research at acceptable international standards in the particular field, with the necessary physical facilities at home and with access to international co-operation with competent partners abroad. Complete research capacity correspondingly implies capacity in a particular field to independently perform good research at international standards, to manage, handle and disseminate research results, maintain the particular research environment and train young researchers. National research capacity in addition requires capacities to prioritise research fields, to support effectively selected research activities, to monitor and evaluate research activities, to maintain a conducive research environment and training, but also to apply research results to the benefit of national development.

Thulstrup finds that past projects and programmes have typically been supply driven and have been aiming mostly at the first level. It is recognised that it is difficult to reach the third level, but there should be an emphasis on long-term national strategies for developing the national research capacity. Without such a national strategy, efforts at establishing capacities at the first and second levels may be wasted. Furthermore, the establishment of second level capacities in the fields which are the key areas for national development might be essential for the sustainability of the overall development efforts. A minimum capacity is generally needed in order for a country to reap the benefits from international research. If the emphasis is on the first level capacity only, the result may also be a brain drain, which will maintain the dependence of the developing countries on the human resource base in developed countries rather than becoming independent.

Two other findings are considered important. Research trained manpower is the cornerstone of research capacity in developing countries and establishing research-oriented postgraduate programmes should therefore have high priority. Furthermore, research capacity should for the same reason be built at the universities rather than at separate research institutions, because the education is attached to these and generally not to specialised research institutions. The point is, that it is the best assurance for the research to be disseminated and utilised and for research-trained

manpower to be produced, if research is taking place at universities where it provides the opportunity for higher education based on research.

Thulstrup (op.cit.) emphasises two key questions in relation to the possibility for research to make sustainable contributions to development. Firstly, how can the capacity created provide real as well as practical contributions to the development process? Secondly, how can the capacity created be sustained without continued donor support? An essential suggestion in relation to these questions is, that universities should exploit their possibilities for “marketing” their services to outside firms, organisations and institutions. It is argued, that there is an increasing global market for “knowledge based services”. This implies a revision of “traditional academic patterns” and a support strategy, which includes educational strategies, support to the development of “research based marketable products” and even support to establish a marketing strategy towards private firms as well as public enterprises and institutions.

### **2.3 New Strategies**

Research and higher education is an area, which is receiving increasing attention among bilateral as well as multilateral donors. New strategies have been introduced or are under consideration. A brief sketch of some selected new strategic approaches is presented below.

- **Better co-ordination between aid and research**

In the above-mentioned reference, the European Union indicates a new co-operation policy. The background was an acknowledgement of a need to improve the co-ordination between development aid and research policy. This new policy would build on general principles of reciprocal partnerships, taking into account the diversity of needs in different countries and an integrated approach to specific problem solving. It entails interdisciplinary collaboration and a close liaison between civil society and various socio-economic groups. Support should focus on three main areas: Formulation of research and technology development (RTD) policies, capacity building to replace scientific and technical assistance, and scientific and technical co-operation to ensure access to external knowledge bases as well as for strengthening scientific excellence. “Stakeholder” groups of both the public and the private sector and civil society are intended to be involved in the establishment of priorities and in implementation.

The new research strategy would imply a much more important role for RTD in the overall co-operation between the developing countries and the European Union. Substantial financial support is foreseen for institution building and research capacity strengthening, including university rehabilitation. Research shall also be “mainstreamed” by the inclusion of RTD components in the focal sectors of programming.

- **A holistic approach to the education sector?**

For many years support to primary education has had the highest priority among donors. This attitude seems to be changing, among multilateral as well as bilateral donors. A recent UNESCO conference has emphasised higher education as essential for development, and the World Bank’s World Development Report 1998/99 emphasised the need for narrowing the knowledge gap between developed and developing countries and suggests a holistic approach to education and development.

The World Bank has launched a "Millennium Science Initiative Project" aiming at improving scientific literacy and quality of research in developing countries. The project is a competitive fund

for research support and is based on the perception, that "knowledge is the most important factor in economic development" (Holm-Nielsen and Crawford, 1999).

- **Other donors' approach to knowledge-based strategies for development**

Bilateral donors with a long experience in supporting research for development are today considering research in a broad sense as the key to development.

The Canadian research programme, the International Development Research Center (IDRC), maintains that "Sustainable improvements in human well-being depend as never before on knowledge, its production, distribution, ownership and wise application. Research done in and by a country is vitally important for the production of knowledge that it can use for development". The IDRC corporate strategy builds on the assertion that the widening of the knowledge gap means, that the development efforts today have to be seen in a new context.

Similarly, SIDA in its recent "Programme for Global Development" is stating that "knowledge is the key to development". It is emphasised, that the "central issue of all development co-operation is to contribute to developing knowledge – in the partner country, in Sweden and internationally." The strategy for research development stresses some major points: Firstly, to concentrate the efforts on a few institutions in order not to spread resources too thinly. Secondly, to give top priority to universities for research capacity building, because of the importance of research trained manpower. Thirdly, to strengthen the institutional basis for research, qualified academic staff, administration, research facilities, libraries, etc., and fourthly, the importance of research-oriented postgraduate programmes.

Also, the guidelines for research programmes of the Department for International Development, UK (Dfid), emphasise knowledge as the key to development. Dfid's approach to knowledge and research is described as "Dfid assigns an important role to the generation, dissemination and use of good quality, relevant knowledge that can be used by practitioners and policy makers in development to have a positive impact on poor people's lives."

### **3. THE DANISH SITUATION**

The Strategy for Danish Development Policy Towards the Year 2000, "A Developing World" (Danish Ministry of Foreign Affairs, 1994), stated that the co-operation with the Danish resource base should be intensified and that universities and research institutions are part of that resource base. Increased co-operation with, and use of, the resource base was encouraged in sector-, cross-sector and policy related tasks as well as on crosscutting and country specific issues. Research was anticipated to play a greater role within the sector programmes and in the building of research capacity through partnership initiatives.

The incorporation of research and capacity building activities in the sector programmes was a new challenge, which was only included from the beginning in a few programmes, but which seems now to be gaining momentum. Major constraints in the fulfilment of the former strategy's intentions seem to point in the direction of a need for increased communication and co-ordination between research and aid, and the identification of specific mechanisms for securing an effective communication and information flow. Another constraint has been the lack of a strategic framework for the support to research activities.

### **3.1 Towards "Partnership 2000"**

The Synopsis for the analytical document emphasises that the objectives for Danish development assistance will continue to be poverty reduction, taking into account the cross-cutting concerns for gender equality, environmental protection, good governance and human rights. It raises the general questions of whether the contexts in which these objectives are to be achieved have changed and whether the objectives are sufficiently integrated in all activities of Danish development assistance.

Research can play a major role in these respects. Research is both an intervention area and a means to create knowledge. The Synopsis stresses the need to rethink the role of research and raises the question of whether the past Danish support to research has had sufficient impact on the overall objectives for Danish development assistance. It is stated that research "should be more closely attached to the policy development in the Ministry of Foreign Affairs".

It is further noted that production and application of knowledge is becoming increasingly important in order for sustainable growth to be achieved, cf. also the international trends, as indicated in section 2. There is a need for "the build up of the capacity of developing countries for the production and administration of knowledge". In the past, support to research has contributed to create new knowledge through the research results obtained and to enhance the knowledge base of Danish as well as international researchers on development issues. In the future, the challenges for research will be to actively contribute to fulfilling the overall development objectives. Research can also be utilised for the understanding of development perspectives and constraints, for solving development problems, and to integrate research activities into the sector support for the sectors selected for Danish development assistance.

### **3.2 Danish Support to Research**

Parts of the Danish development assistance funds are allocated to support research, which is relevant for the developing countries. There is obviously a considerable amount of research, which is undertaken in the interest of the developed countries, but which is nevertheless highly relevant to the developing countries, such as basic medical and technical research. Also, there is research which is relevant to both industrialised and developing countries, but of particular relevance to the latter (like malaria research). Danish support to research is focused on development research and research of particular relevance to developing countries.

The present support consists of three types: (a) general budgetary support to selected research institutions (Danish as well as international), (b) support to "twinning arrangements" and (c) support to specific research projects or programmes. The first support type includes funding of permanent researcher positions in four Danish research institutes, whereas the second type is focused on supporting institutional research capacity building in a developing country, with a Danish institution as the "twinning" partner". The third group consists of specific research projects or larger programmes undertaken at Danish universities and research institutes.

- **Capacity building in developing countries**

The "twinning arrangements" are supported mainly through the Bilateral Programme for Enhancement of Research Capacity in Development Countries (ENRECA), launched in 1989, with the primary objective of supporting research capacity building in developing countries. A spin-off is the enhancement of the competence of Danish research institutions and researchers to be involved in development work. The funds allocated to the programme amounted to DKK 56.5 million in 1999, and 44 projects were ongoing by the end of 1999. Institutions being supported in the

developing countries are typically departments or institutes of a university. Training of host country researchers is an essential part of the projects. In general, the research undertaken is “team” research and the projects include, in addition to research training (PhD) support to capacity building in terms of equipment, literature and communication facilities.

The programme is intended geared towards concrete development problems and many of the projects focus on specific problem-solving. Dissemination of results is also considered important in the programme, but the projects are generally relatively small, supporting only one of a number of relevant institutions within a sector. With the introduction of the sector programme support approach, existing and coming ENRECA projects, in countries and sectors selected for Danish development assistance, according to a new set of criteria, should be co-ordinated with the sector support. It seems likely, that this will change the scope of the programme in relation to both of the above-mentioned objectives. Institutional capacity building is a main principle of the sector approach itself and its design and implementation require human resources, which are to some extent different from the types of resources required by the traditional project approach. There is a need for further discussion of the synergies and demarcation between ENRECA and the sector programmes, and between ENRECA and RUF.

A health research network has been established as part of the programme and is successful in broadening the disciplinary focus and facilitating the dialogue between aid and research. The programme was favourably evaluated in 1992, and a second evaluation is presently ongoing.

- **Supporting sector research**

Part of the support to Danish research institutions is concentrated on the general budgetary support to the four sector research institutes, Centre for Development Research, Danish Bilharziasis Laboratory, Danish Government Institute for Seed Pathology and Danish Forest Seed Centre. All four institutes are dependent on this budgetary support, but supplement funds with income-generating activities, such as consultancy work. Some of this work is related to the planning, implementation and evaluation of Danish development assistance programmes. This “double financing” situation brings these institutes in a rather awkward position, which raises issues of modalities for the co-operation with the Ministry of Foreign Affairs.

All four institutes have existed for quite some time and they have been evaluated several times over the years. The latest evaluations are from the 1990s for all four institutes. It is not the purpose of the present paper to make judgements on the conclusions or the recommendations of these evaluations. The evaluation reports do, however, highlight points for strategic considerations:

One issue concerns the extent to which the research of these institutes is relevant to the work of the Ministry of Foreign Affairs in formulating policies and design and administration of development assistance. Though the evaluation reports do not in all cases give explicit and unambiguous answers to this question, they do generally point to this as an important issue, which needs to be considered. There are several indications that the institutions need to do more to ensure that 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. To the extent that such judgements are valid, the issue is whether development funds should be used for financing activities, which are of limited or no use in Danish practical development work, or whether long-term and indirect effects are sufficient justification.

In the latter case, there is an additional issue: Is the research undertaken at these institutes of good quality by international standards? There are in the evaluation reports indications, that there are cores within this group of institutes, which constitute “centres of excellence” and comprise unique

resource bases in certain areas. This raises the issue of whether an existing comparative advantage for high-standard research in a certain area in itself is a sufficient justification for using development funds for its financing. It must be assumed, however, that relevance for the developing countries is a requirement.

Traditionally, Danish focal intervention areas have been chosen to correspond to an already existing Danish resource base, cf. livestock and dairy support in the early days. Today, it is much more a dynamic process in which the perceived needs of the developing countries, which are constantly changing, influence the assistance, which again influence the resource base in Denmark, and vice-versa. Most importantly, the dynamics and interactions of this process must be kept in mind when formulating strategies for interventions and for the development of the Danish resource base for such interventions.

A further issue concerns the institutional location of the research activities of these institutes. Are these best located as at present in separate, specialised research institutes or could they just as well, or even better, be placed as part of a university? The evaluations do indicate this as an issue as well and observe in some cases a lack of interaction with researchers in the same or related research areas in other institutions in Denmark (and internationally).

A final point of the evaluations is that taking the work of all four institutes, their basic activities span rather widely. From work which seems excellent in traditional academic terms to work, which would not qualify as research in that sense, but which might nevertheless be useful or necessary for formulation of policies and for administration of development assistance to the developing countries. Policy analysis, evaluation studies or other "commissioned" work indicate types of activities undertaken to some extent in this group of institutes.

- **University support**

Support to research at Danish universities and research institutions is provided through financing of specific projects and programmes through the Council for Development Research (RUF), which sponsors research within a wide range of disciplines pertaining to development. Emphasis has been mainly on research on the management of natural resources, social conditions and health.

Besides funding individual projects, since 1996 RUF has awarded grants for the implementation of more comprehensive programmes. Grants are also provided for research professorships in health and environment (co-funded by the respective national research councils). Previously, three programmes under the Danish government's strategic environmental research programme were supported. Furthermore, RUF sponsors field work within agriculture and health, carried out in developing countries by a limited number of students in connection with the writing of their theses; work which looks likely to encourage the recruitment of qualified young people to development research. A broad network for agricultural research is also supported.

No evaluation has yet been carried out, but is planned to take place this year.

- **Support to international research institutions**

The support to international research institutions is represented by the Consultative Group on International Agricultural Research (CGIAR) system, which was established in 1971, with four centres to support productivity-oriented research in response to the needs for food in developing countries. Today, integrated natural resource management and productivity improvements are the fundamental subjects of the 16 CGIAR centres. Their mission is to contribute, through research, to

promoting sustainable agriculture for food security and by that alleviate poverty and protect the natural resources. A review of the programme was carried out in 1999.

All 16 centres receive unearmarked core funding. In addition, Danish Junior Professional Officers (JPO's) are stationed at CGIAR centres.

The CGIAR co-operate to a certain degree with Danish research institutions in agricultural and social sciences.

- **Other research support**

There are also significant contributions to research under the bilateral and multilateral aid allocations, outside the above-mentioned direct support to research. For example, Denmark contributes both directly and indirectly to the financing of research, carried out by international organisations such as UNDP, EU and WHO, WB et al.

Some funds allocated under the bilateral aid, mostly within the sector programmes, are indirectly used for applied or adaptive research and research capacity building and institutional support. Several of the Agricultural Sector Support Programmes (ASPS) include such elements. Several agricultural projects from recent years are trying out numbers of different agricultural production methods in practice. They are experiments, though they are not always implemented strictly as such, which means that lessons learned are often not extracted and analysed. Another example is collaboration with Danish researchers in regards to the policy on violent conflicts. Under the Fellowship Programme, training of researchers from the programme countries is supported.

#### **4. STRATEGIC CONSIDERATIONS**

Research has a very important role to play in development, as it contributes to our understanding of development problems, constraints and possible solutions. It has been suggested to consider research in the broader perspective of "knowledge enhancement", a concept, which comprises the creation, handling, dissemination and application of knowledge in a broad sense. In such a framework, research is the ultimate basis for knowledge enhancement and a research strategy would be an integral part of a development strategy in which knowledge enhancement is a major strategic element.

Knowledge enhancement is, however, a very broad concept, and a knowledge based development approach could a priori mean a number of different things. It is therefore necessary to consider more specifically the possible content of such an approach and to consider the role of research in this more specific context. Initially, a major challenge will be to develop a strategy to incorporate research into the bilateral assistance in the programme countries. The strategy should, however, also be reflected in the multilateral assistance, as the strategy develops over time. A research strategy should also include research which is not related to a sector or a country.

The aim of a knowledge-based approach would be to enhance knowledge in and about the developing countries. What that implies, will basically have to be determined in relation to the programming of the assistance to the countries. These are different and the specific content of a strategy would therefore vary among the countries. It will also have to be developed over time. Some general issues can, however, be pointed out, as outlined in section 4.1.

In the strategic considerations, it is necessary to consider the content of the research concept itself. Research can be understood in a narrow sense, as the academically merit-earning activities

undertaken at universities and at specialised research institutions. This concept tends not to include strategic research, applied research and technology adaptation and transfer of technology. Also other knowledge-creating activities, which may or may not be considered research, should be taken into account. Section 4.2 considers the options and issues related to the concepts of research and knowledge enhancement.

Section 4.3 outlines issues and options from an institutional point of view. Capacity building for research in developing countries, financed by Danish development assistance, takes place through co-operation between institutions in developing countries and Danish institutions. A strategy, which is focused on knowledge enhancement must consider issues and options stemming from the experience of such institutional co-operation.

Finally, section 4.4 outlines issues and options related to the financing of research.

#### **4.1 Knowledge Enhancement in Bilateral Aid**

Programming of Danish bilateral development assistance takes place through the country programming, based on the country strategies and through the design of sector programme support, SPS.

- **understanding development perspectives and constraints**

A solid understanding of the development perspectives and constraints is essential for the provision of an effective development assistance. In the SPS approach, “ownership” is a key strategic principle, which assumes that such an understanding exists as a national knowledge. The knowledge has to be available to the politicians and civil servants involved with policy-making and public administration, but it is, as indicated earlier, equally important that such knowledge becomes a “common understanding” across the different levels and sections of societies.

This requires not only research, creating new knowledge, but also policy-oriented analytical work and, above all, dissemination, education and information and communication facilitation. The building up of such a national common understanding is a process over time. A national capacity for that type of work should be assimilated. Supporting this would be an important contribution to knowledge enhancement in the programme countries.

Three observations are important in this connection: Firstly, that such support to knowledge enhancement will imply support to capacity building in both the partner countries and in Denmark. Generally, there is not at present in Denmark an institutional framework adapted to this kind of co-operation with partner country institutions and similar institutional set-ups are also typically weak in most partner countries. Secondly, the relevant institutions in the partner countries are not necessarily only those, which can be said to be part of the particular sectors selected for Danish sector support. The knowledge in question is to a large extent cross-cutting and it should be useful for Danish support across sectors. Thirdly, the sectors selected for Danish support are generally key sectors for the development of the respective countries, such as agriculture, health and environment. This means that the policy-oriented work needed for the planning and implementation of Danish sector support to these sectors is essentially national development policy work.

It is therefore also obvious to consider such knowledge enhancing work in relation to the Country Strategies revised every five years for each of the Danish programme countries. These strategy papers, perhaps if revised more often, could be one of the outputs from this type of work. They might be co-ordinated with similar work and support of other donors to become nationally

analytical and more generally knowledge-enhancing instruments for the benefit of the country at large as well as for the more specific needs of the donors. Taking knowledge enhancement in its broadest sense, it is also natural to relate this to Danish support to e.g. de-centralisation, good governance or human rights. Some of this support will be knowledge enhancing support, as the concept is used in this paper. Similar considerations would probably apply to some of the support provided to or through NGOs, Danish and local. There could be a scope for combining some of this and for designing new instruments for knowledge enhancement.

- **Sector programming**

Regarding sector programming, there are two general issues to be highlighted. One is the balance between support to physical infrastructure and support to capacity building for knowledge enhancement. The second is the extent to which support shall be designed as support to research in a narrow sense as opposed to knowledge enhancement more broadly, which also relates to the dialogue with the partner countries. Higher priority to knowledge enhancement will, however, imply more focus on institution building (in a broad sense for knowledge creation and dissemination) and less on physical outputs. This makes it pertinent to develop methods and objectives for institution building and corresponding monitoring indicators and procedures.

A few further observations should be made. First, it should be emphasised, that part of the Danish support in the past (multilateral as well as bilateral) has in reality been support to research, both in a narrow and a broader sense. Thus, support has been provided to projects designed to increase the research capacity of specific departments of universities and implemented as specific research supporting projects. Support has also been provided to projects, which have not been called research supporting projects, but which were in reality just that, at least when research is taken to include adaptive research. There is thus experience to build upon, when considering the future design of knowledge enhancing support. Secondly, the Danish support for research may be considered small in terms of the percentage of total funds provided by donors for development. This could point towards support to innovative or pilot activities, intending to try out new approaches. Actually, past support has been of that type to some extent. Such activities could be essential in a knowledge enhancing approach and they therefore illustrate what this could imply in practice in the sector support programmes. Thirdly, there seems to be scope for establishing a fruitful interaction between the multilateral and bilateral Danish development assistance.

- **New instruments and approaches?**

Though a knowledge-based approach in presentation would appear as a new concept, it does not necessarily imply immediate, radical changes in intervention areas and instruments. Rather, it is a change of direction and emphasis and is envisaged as a development over time.

The sector programme support approach is, as mentioned, assumed maintained as the main strategic element in the Partnership 2000 strategy. This is a relatively new approach and it may not yet have found its final form. There is therefore scope for considering, over time, how a knowledge-based approach would be designed within the SPS programmes. Two of the main principles in this approach are very closely related to knowledge enhancement. The first is the “ownership” principle, which assumes the existence of a solid basis for informed decision-making in the developing countries. This was discussed previously in relation to the Country Strategies. Another main principle of the SPS approach is the emphasis on support for institutional capacity building. At a general level, there is considerable overlap between knowledge enhancement and institutional capacity building. The latter should be taken as sector-wide capacity building and include much more than just strengthening of a department of a central ministry. Emphasis should be put on strengthening institutions in a broad sense and through all levels. This would appear to imply much

the same as knowledge enhancement across all levels of society for participation in decision-making. It is suggested, that a knowledge based approach could bring much substance to the capacity building concept in the SPS approach.

In this connection, it is important to mention strengthening of information and communication as central to a knowledge-based approach to development. New methods and technologies are today available, which open up for linking different areas and population groups through the sharing of information. Also, the scope for the developing countries to access the international pool of knowledge is substantially improved. This is an area, which could be a new intervention area as well as provide new instruments in other intervention areas.

However, without the ability to handle the vast amount of information made available, the developing countries will be left even further behind, and the technological developments would thus create even larger knowledge gaps. If the development process is to gain, it requires an ability to engage in scientific thinking, applying scientific methods as well as a management and adaptation capacity to transform these developments into applicable solutions. Thus, supporting capacity building within knowledge management in the developing countries goes much further than disseminating research results, as it should also comprise a long term enhancement of the capacity to handle the flow of information, and to transform research results into policies and political and operational action.

A somewhat different line of thinking could also be mentioned to illustrate the possible scope of the knowledge-based approach. "Learning-through-doing" is an important way of achieving knowledge enhancement and this principle could be used and exploited to a much greater extent. To take one example, at present considerable resources are used for planning, monitoring and evaluation work. This type of work tends to be considered as "administrative" work and the costs correspondingly as "administrative costs" rather than as aid. Why not organise and implement this type of work differently and make it an aid instrument instead of an administrative cost? To a larger degree, the work could be undertaken together with the resource bases of the partner countries. This could in itself enhance knowledge of the partner country resource base, particularly if this work to a greater extent could be combined with the implementation work. This type of co-operation could also include other activities (e.g. training), which would complement these activities and through the synergetic effects increase the knowledge enhancing impact.

## **4.2 Research for Knowledge Enhancement**

As indicated in section 3, past experience of Danish research support reveals a number of issues, which appear important for a future research strategy.

- **Relevance**

The question of whether the research supported under the Danish development assistance is relevant or not in achieving its objectives has been a major issue for quite some time. It is put forward in the discussions on the role of research for Danish development assistance, e.g. often in the discussions following evaluations of Danish research support, cf. section 3 above.

This discussion would benefit from a clarification of the research concepts and corresponding types of work related to the formulation of Danish development policies and to the administration of the development assistance. Research in the narrow sense, the academically merit-earning, is one category. Then there is the more applied type of research, adaptive research, experiments or even broader pilot projects, which are clearly also activities of relevance for the development work. Such

work may or may not qualify as academic research, depending on the more specific nature. But there are also types of work, which everybody would most likely agree is not research in any interpretation, such as commissioned studies on specific subjects or policy analysis. Most, if not all, consultant reports are of this type. These reports are necessary outputs in the planning, implementation and evaluation work, related to the administration of the development assistance, but they do not count as research. Thus, even though clear general demarcations between these various concepts cannot be given, there are different types of work.

In a knowledge-based development approach, all these types of work are recognised as equally important although not all qualify as research. They are different, and there are “grey zones” between them, they play different roles, are undertaken by different parts of the resource base and hence are also financed differently. All types are relevant within their respective roles.

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. In academic research, subjects are chosen by the researchers themselves and the quality of the work is decided by the research communities. These are the characteristics of academic research and this needs to be taken as a given by development administrators. Politicians do, however, have to make judgements as to what and how much to finance from public funds and must therefore make judgements as to the general relevance. Development administrators in the developing countries are involved in this decision-making process, i.e. in defining research priorities. Thus, there is an overall relevance issue in this sense, which the development administration has to face. But whether the specific research projects are more or less specifically relevant might best be left to the researchers themselves, and the quality of the work should clearly be judged on the basis of current academic principles and scientific criteria, not on relevance criteria.

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.

Consultancy work, related to the “project cycle”, may be taken to represent the other end of the spectrum. This work is also relevant in the general sense, but has to be relevant in a specific sense as well. It has to be relevant to the very specific operational context for which it is commissioned. This specificity makes such reports very unique and of little value outside that specific context. This also means that it is difficult to establish general criteria for quality. In the end, both relevance and quality are to be judged by the impact of the development assistance to which the consultancy work is attached. Also, responsibility for the quality of the work is difficult to place. Many players are usually involved in determining the specific context and the usefulness can only really be judged long after the work has taken place, if at all. More coherence in the planning and implementation work, continuity over a longer time horizon for the consultant input, and quality control based on monitoring of impact, could be a way to go. This would increase the quality of the input of the Danish resource base and it could be a major contribution also to the enhancement of the knowledge of the resource bases of the programme countries.

In between there are other types of work, which should be mentioned. Adaptive research, pilot activities and policy studies may be concepts, which could be used to characterise other parts of the spectrum of work, which are highly relevant in the general sense. Adaptive research is, as mentioned in section 3, an activity, which has in the past been supported in projects, but without always being called that or designed and implemented as that. The same is to some extent true of

pilot activities. Such activities can be extremely important in the creation and dissemination of knowledge, and a knowledge-based development approach must therefore cover such activities.

- **Basic or applied research?**

Basic or applied research is, of course, not an either/or issue, but an issue of finding the optimal balance. It has been argued, cf. section 2, that the main need is for technology transfer and adaptation. This seems supported by the experience from Danish development assistance, as illustrated in the agricultural development assistance.

The delimitation between basic and applied research is not necessarily sharp, as it can be a matter of time before basic research can deliver applicable results. However, in some disciplines, the applicability can only be envisaged in such a far future that it is difficult to justify the spending of aid allocations. It must be taken into consideration that the solving of some of the most immediate problems of the developing country relies on solutions to be delivered through basic research, to which Denmark has an international obligation to take part. With regard to support to research capacity building, the question of local priority setting must be considered, as it has implications for the future sustainability. Researchers in partner countries often underline their need to be updated on the newest scientific advances and not only to cover the most applied research.

In agriculture, many results of basic research of potential use in developing countries are available, but whether these results are applicable in a specific country, region or farmers' fields, particularly smallholders, is often not known. This points towards adaptive research and trial activities in farmers' fields. It is on the other hand also argued that some minimum basic research capacity is needed, nevertheless, to provide incentives and scientific environment for the research-trained personnel, which is needed for undertaking the adaptive research. Balance is therefore the issue.

The agricultural sector also shows several examples that knowledge enhancement through applied or adaptive research and corresponding dissemination is an area that has a high priority in many developing countries.

As an illustrative example, it should be emphasised, that support to these types of activities is in no way new to Danish development assistance. In fact, a number of past and some present projects are actually projects supporting adaptive research (e.g. water and soil conservation projects), even if they are not called research supporting projects. In many cases, they are also "trials" in more than a technical sense. They are testing technical solutions under different cultural and social conditions; they are "pilot"-projects, which could provide a basis for informed policy-making, but they are generally neither designed nor implemented for this purpose.

Such projects can be used to illustrate what knowledge enhancement could mean in practice. In a knowledge-centred approach, such support would be designed explicitly as knowledge-enhancing support. This would mean that the variables being "tried" are well identified, i.e. the technical as well as the social, economic or cultural variables, and that trial- or pilot-results are being recorded, analysed and "stored". Equally important, that policy implications are analysed and institutionalised at the policy-making level. Part of the multilateral support in the past (e.g. to FAO) should be seen in this context. There would appear to be scope for actively utilising multilateral support in a knowledge-based approach.

These examples illustrate that there is considerable complementarity between aid implementation and research, if the latter is taken in its broad sense. Also, synergy effects can be realised by relating the multilateral aid to the focus areas of the bilateral support.

### 4.3 Other issues

- **Natural or social sciences?**

Again, this is a question of striking the right balance. At present, both these categories are supported and the issue is actually not so much whether the existing balance is right, when the support in terms of funds is compared. The issues are rather whether the funds are used optimally for both categories of research.

Health, agriculture and related institutional support in the developing countries concerned are the main priority areas for part of the present research support. The issue here is whether the research is sufficiently relevant for the development assistance in these areas. With the sector programme support being the overall approach to the provision of development assistance, and with the importance of institution building support in this strategy, the research support in such areas would to a large extent be part of the sector assistance in the future. This should increase the scope for ensuring that the research being financed is of relevance for the development of the sector.

An equally important part of the present research funds is allocated to economic and social development research. For this part, the main issue is the relevance of the research in relation to policy formulations and aid administration for the developing countries. Without making a general judgement of past research in this respect, it seems clear that too little “societal” knowledge is generally brought to bear on the development assistance. Two areas, where substantially increased knowledge is required, are, firstly, analysis underpinning the poverty reduction objective and the cross-cutting concerns, the more specific operationalisation of these objectives and the development of methodologies for impact assessments in relation to them. Secondly, general country knowledge of the partner countries should be considerably increased. The present Country Strategies are generally not based on prior research work [on/in](#) the country concerned.

In discussing the balance between the natural and the social sciences, it should be emphasised that both are needed, and often on the same subject. Research on the adaptation of a given technology is of very little use, if the adaptation is not considered in the economic, social and cultural context in which the adapted technology is intended to be applied. Similarly, social research is useless, if it is not based on a solid knowledge of the technical potentials and constraints involved. It is multi- or inter-disciplinary research, which is required, and it should be problem and policy-oriented.

- **New research areas?**

There is clearly a need for Danish development assistance to understand the development potentials and constraints of the specific programme countries in more details. Analysis of what the poverty-orientation and cross-cutting concerns of Danish development assistance mean in the specific country context is required. There is a need for a better understanding of what the poverty reduction objective implies, and it is suggested that more attention be given to investigating the mechanisms for generating inequality in the partner countries. Such analysis should be undertaken by co-operating institutions in the country in question and the Danish resource base, and it would imply support to capacity building for the co-operating institution in the partner country. Monitoring, evaluation methodologies and development of indicators should be seen in this perspective.

The sector programme support approach is in itself a major challenge for research, in its narrow as well as broad interpretations. Two types of areas need to be considered. Firstly, a solid understanding of the development potentials and constraints of the particular sector is required. Putting together, analysing and expanding knowledge on sectors and sub-sectors across countries will be an important knowledge base for future sector assistance in the sectors selected for Danish

assistance in the different partner countries. Secondly, the importance and the role of the particular sector in the overall development of the respective partner countries will also be required.

There is also a need for more research concerning the framework for the development of the productive sectors. What is an “enabling environment” and what are the binding constraints on the development of the business sectors? In this regard, there is also a need for research into the new role assigned to the public sector in the light of the experience in recent years of privatisation and the play of free market forces. The role of the public sector in facilitating as well as providing the frame and conditions for the markets to play an essential role needs further analysis.

New areas for bilateral development assistance also require continued research underpinnings. This pertains to areas such as support to urban development or to conflict prevention, which are being considered for support in the future. Furthermore, an approach based on knowledge enhancement would in itself require research concerning means for knowledge handling, facilitation of access to information and dissemination of research results and should include new information and communication approaches and technologies.

#### **4.4 Institutional Aspects**

Danish development assistance is implemented through partner country institutions. The sole purpose of establishing co-operating arrangements with partner country institutions is not only the implementation of Danish development policies and assistance. It is also, and particularly, to strengthen these institutions in order for them to “take ownership” of the development process.

To achieve this, also Danish institutions may need strengthening in order for them to contribute to institutional strengthening of the partner country institutions. The competence and experience of the Danish resource base in this respect is essential for the quality of Danish assistance and these resources therefore have to be available. It must, however, be kept firmly in mind, that the purpose of supporting Danish institutions is to achieve institutional strengthening in the partner countries. Supporting Danish institutions is a means, not an end in itself, but it is considered necessary to have an institutional, professional back-up in the Danish resource base.

- **Co-operation with Danish universities**

Danish universities and other higher education institutions have extensive relationships with universities and research institutions abroad, including to some extent relationships with “sister” institutions in developing countries. They also have an extensive and varied expertise in a number of areas of relevance for developing countries. On that background, it seems reasonable to assume that they also have a main responsibility for contributing to promotion of development. The extent to which this also justifies that university research activities are financed over the development funds is a key issue in the co-operation between the Ministry of Foreign Affairs and the universities.

Taking research in its narrow sense, i.e. as academically merit-earning research, two types might be distinguished. One type is the research on development problems, which is a part or a sub-discipline of an academic discipline. Such research is not necessarily tailored to or directly relevant to the current development policies and assistance, but is needed nevertheless. It is necessary to have an independent basic research activity at the frontiers of development. The other type is research, which is of direct relevance for specific problems, policies or assistance implementation issues. It might be argued that the first type, being academically merit-earning, should be the responsibility of the universities, whereas the second type should be commissioned by the Ministry of Foreign Affairs and financed from the development assistance funds.

The universities have a knowledge base, which is relevant for an institution-to-institution co-operation aiming at strengthening the research and teaching capacity in developing countries. This resource base is not always utilised as much as it could be in this respect. The extent to which this should change in the future should depend, however, on the answers to two questions. Firstly, to what extent shall Danish research support be concentrated on the countries and sectors selected for Danish development assistance? Secondly, to what extent does the design of future sector programme support identify support to research and higher education institutions as efficient in relation to the Danish development objectives for the particular sector in the particular programme country? To the extent that such support is identified as eligible for Danish development assistance, the universities would appear relevant professional back-up institutions for this kind of assistance.

Researchers and teachers of the university and research institutions constitute a resource base, which is also used for the consulting work required for the planning, implementation and evaluation of development assistance. This resource base is also in this respect used only to a limited extent. This reduces the input of available expertise into the work, and of practical experience into the research. A better utilisation of researchers for this type of work could have important impact on increasing the quality of Danish development assistance in the long run. The required expertise for this type of work is, however, mostly of a “generalist” nature, whereas researchers naturally tend to be “specialists”. There is no simple solution to this dilemma, but more interaction within the resource base as a whole would be beneficial. There is a need for researchers to have a broader and more general knowledge of the developing countries and there is a corresponding need for increasing the competence level of the development work through more research input.

Use of students as “trainees” is also a possibility, which might be used more, but the “absorption capacity” in the partner countries is far too small to make this a general rule open to all students.

- **The Sector Research Institutes**

There are sector research institutes in Denmark of relevance for problem solving and for development policies and assistance. It could be argued that financing of such institutes from Danish official development assistance funds needs to be justified in terms of knowledge contributions, which are essential for problem solving in developing countries and for policy formulations and development assistance administration. It is beyond the scope of this paper to assess the extent to which such justifications can be made.

In this connection, it should also be considered, whether the research undertaken by such institutions might more efficiently be attached to or become part of the corresponding research communities at the universities in Denmark. Part of the research appears to be basic research, which would fall in naturally with research at these institutions. For the more “applied” part, the issue is, whether this work is actually relevant for the policy formulations and the aid delivery responsibilities of the Ministry of Foreign Affairs.

It should also be considered whether some specialised relevant expertise might be lost in the absence of such research environments, or whether there are specific comparative advantages for undertaking such research in Denmark, compared to the research, which is undertaken in other countries and in international research institutions.

- **International research institutions**

These international institutions are basically financed from development assistance funds from a number of donors. They undertake research of common interest (“global public goods”) and have

comparative advantages in certain respects compared to Danish institutions. It therefore seems reasonable that Denmark makes its contribution on an equal footing with like-minded donors. The Danish financing is also to some extent used for financing of Danish researchers, who in this way are exposed to high level research in an international environment.

The issue in relation to these institutions is, whether their work and results are relevant and could be utilised to a larger extent in the Danish development assistance. This relates primarily to the CGIAR institutions and concerns the use in relation to the sector programme support within the agricultural sectors in those partner countries, in which agriculture is selected for Danish assistance. Some of the funds, allocated for the institutions, could be visualised as being earmarked for thematic research undertaken by a “triangular” co-operation, as has been established in some recent cases between the institute, a corresponding institution in the partner country and a Danish institution. Such arrangements might also be considered in relation to the multilateral aid in general.

- **Institutional partnerships for knowledge enhancement?**

If a knowledge-based approach for development is decided upon, it would seem a good opportunity also to review the co-operation between the Ministry of Foreign Affairs and the external resource base at large. Instead of being a place to buy goods and services to be delivered to the developing countries as aid, the Danish resource base could be considered a partner to the resource bases of the programme countries for enhancement of knowledge in these countries. Partnerships between institutions across borders, but also within Denmark and within the partner countries, could be visualised established for joint development work. Such arrangements could be supported by the Ministry of Foreign Affairs, through financial support as well as through other means, and they could develop to become the main mechanisms for “aid delivery”.

Compared to the existing aid delivery system, an institutional partnership approach differs in three respects. Firstly, the approach would pre-suppose co-operation partnerships within the Danish resource base and similar arrangements in the partner country, e.g. between a line ministry, a regional Government unit, a private industry association and a national research institute. Secondly, it is a long-term arrangement, which makes it possible to establish institutional as well as personal links across borders. Such a long-term co-operation arrangement would give much more coherence in the support and continuity and would appear extremely important for the sector programme support approach. Thirdly, the partnerships should include institutions, so that the different types of expertise required are available. This could mean combinations consisting of a research institution, a private organisation and a consulting firm. It is envisaged, that such institutional partnerships would be conducive to joint knowledge enhancement and utilise possibilities for synergetic effects.

Different modalities could be worked out for different types of partnerships. Such modalities would include rules for (full or partial) financing, for the rights and responsibilities of the various parties involved, etc. Also, different financing modalities should be considered.

#### **4.5 Supporting Knowledge Enhancement**

In section 3, the present Danish support to research under the special research programmes is described. Several issues concerning the justification for using development funds for this were brought up there. It might be visualised, that the adoption of a knowledge-based development approach would imply an increased funding for research, making these issues even more pertinent. Knowledge enhancement is, however, a much broader concept, than research in the narrow sense and the issue concerning research financing therefore becomes a much broader issue.

When discussing the future direction for the support to research and research capacity building, there are several issues to be considered: How can the research support be demand- rather than supply-driven? How can high relevance to the developing countries as well as to Danish aid be ensured? How can research of both high quality and applicability be selected, and how can the dissemination of results and the sustainability of the local research capacity building be reached?

It is suggested, that this discussion would benefit from a clarification of the knowledge and capacity building needs related to the formulation of Danish development policies. The discussion would also be more focused, if the comparative advantages and needs of the Danish knowledge base were understood more clearly. This points towards a need for a better communication between the external and the internal resource base.

- **Why research funding?**

It is useful to ask the general question: Why should any research be financed from the development assistance funds? Research is a public good and should therefore in general be financed by public funds, but does development assistance require research of such a specific character, that separate funding is justified? Is it the aim of the development assistance funds that they should be used to finance research taking place in Denmark or in international institutions, rather than funding activities in the developing countries?

The research need for the purpose of providing development assistance with the specific purposes entailed in the Danish development objectives is not likely to be met through general research. For that, the development assistance needs are most likely too applied or purpose-specific to be an incentive to researchers aiming at an academic career. If so, this type of research would not be undertaken without the specific financing. On the other hand, this means that it is up to the administration of the development assistance to specify what is required and commission it out to interested researchers. The research needs to be demand- rather than supply-driven.

An argument against such an approach is that there would be no capacity for the undertaking of the specific research on request, unless resource groups competent for this type of work are sustained through other means, when not used for the development assistance research. Thus, some financing to sustain the resource base would seem necessary, though it may not necessarily have to be in the form of permanent researcher positions. Private consulting companies sustain permanent staff from their overhead earnings.

- **Core or targeted funding?**

Targeted funding (or project-funding) has the advantage of being designed to specific needs in relation to either specific problems, policy formulations or to the administration of development assistance. Thus, the funding could in principle become more relevant in these respects. It also allows more flexible institutional arrangements, which can change from assignment to assignment. The disadvantage is that it is impossible to build up and sustain research communities on the basis of such short-term, project-type funding alone. The strategy of targeted funding therefore assumes that “core” research communities are established and sustained through means other than development assistance funding. This may be considered a limitation on the possibilities for implementing such a strategy.

On the other hand, it could possibly be argued that the “established” resource base is now large enough for such a strategy to be possible, at least partially. Using such a financing modality one hundred percent would, however, imply that all research, which is not directly relevant for the

countries and sectors supported with Danish development assistance, would have to be financed by the research institutions themselves.

- **A strategy for the Danish resource base?**

An important issue concerns the role and responsibility of the Ministry of Foreign Affairs in relation to the knowledge enhancement of the Danish resource base, also beyond the research community. This base is rather varied in terms of institutional set-up, management, financing etc. There is also considerable variation in terms of knowledge creation and utilisation and with respect to the role in relation to Danish development policies and assistance.

Traditionally, the Ministry of Foreign Affairs has not considered it the responsibility of the Ministry to ensure the availability of a competent resource base in Denmark. The development assistance funds are to be used for the developing countries and not for the establishment and maintenance of the Danish resource base. In its administration of part of the MIFRESTA funds, the Ministry of Energy and Environment has, however, taken a somewhat different position. It should in this connection be kept in mind, that support is not necessarily financial support only. There are other means of promoting and supporting knowledge enhancement of the Danish resource base.

As the Danish resource base is involved in the delivery of aid, parts of the development assistance funds do end up in Danish firms and institutions. This part is payment to the Danish resource base for goods and services rendered by these institutions as aid to the developing countries. This does, of course, imply a "support" to the resource base concerned, in so far as Ministry of Foreign Affairs is an important customer. Part of the resource base might not exist without this "market", and other parts might expand and develop if they had access to the market to a larger extent. Thus, the Ministry of Foreign Affairs does have influence on the existence, the utilisation, the further development and expansion of the resources and on the knowledge enhancement resulting from "doing". This would seem to call for a strategy concerning support for knowledge enhancement of the Danish resource base.

Considering the resource base at large, other modalities in addition to financing become equally important. These relate to operational procedures for the involvement of the resource base in policy analysis and formulations as well as planning and implementation of Danish development assistance. The division of functions and responsibilities between the internal and the external resource base is included in this.

To the extent that research financing becomes more targeted, thematic research funding, "Research Co-operation Consortia" could be visualised to undertake such research through competitive bidding. The establishment of "Core Knowledge Groups" could also be a consortia arrangement among different institutions, which could be contracted for provision of professional back-up services for planning and implementation of Danish development assistance. Such arrangements should be related to sector support or to country strategy analysis and involve the key related institutions of the partner countries.

## **5. CONCLUDING REMARKS**

It has been a trend in international development thinking over the past decade that much more attention is given to research than previously. Many donors, bilateral as well as multilateral, give much higher priority to research today compared with the mainstream strategies of the 1980s. The revision of the Danish development strategy is an opportunity to take these international developments into consideration.

The present paper is, however, not a sufficient basis for the design of a new research strategy. As the paper indicates, a new research strategy, which shall take the international trends into consideration, implies a major change, compared to the existing practice. Additional analyses, consultations and discussions are therefore required and a series of workshops can be visualised. The Danish resource base consists of a number of different groups with different backgrounds, but with legitimate interests in and a joint responsibility for Danish co-operation with partner countries.

The quality of this co-operation depends to a large extent on the quality and efficient utilisation of this resource base, the internal as well as the external. The development strategy must consider how to facilitate an optimal relationship with the providers of research in Denmark, at international institutions or developing country institutions. The overall objective is to enhance capacity building for development.

A basis for the present paper is the draft Synopsis prepared by the Ministry of Foreign Affairs. It is a Synopsis for "Denmark's Development Policy", a title, which indicates two important assumptions. Firstly, that the strategy is a general Danish strategy, with the Ministry of Foreign Affairs having the overall responsibility for its formulation. Secondly, that it is not a strategy for development assistance only, but covers a much broader area, namely Danish policies towards and assistance to developing countries. Thus, it is much more than a strategy for the Ministry of Foreign Affairs' administration of development assistance funds.

It is a conclusion from the analysis of the international trends that research should be seen in the broad context of "knowledge". It is the creation, adaptation, dissemination and utilisation of knowledge, which is in focus in today's development thinking, not research for its own merit. It is knowledge enhancement, across borders and across society, for solving of specific problems, for informed policy-making and for participation, which should be a main pillar of a strategy for development.

The developing countries are lagging seriously behind, particularly the least developed countries, in terms of knowledge bases for development. The core question in formulating a policy and assistance strategy is therefore how best possibly to contribute to enhancing the knowledge base in the developing countries. The widening knowledge gap is found in relation to the economic, social and cultural sciences as well as in relation to natural, medical and technical sciences. This means a serious lack of basic capacity in the developing countries to undertake highly needed analytical work and to access, absorb and utilise the knowledge, which is available internationally.

Experience points to the importance of having the priorities determined by the countries concerned rather than by research institutions of the developed countries. A starting point must therefore be the dialogue, which is essential in the sector programme support approach. The scope for effective knowledge enhancement must thus be assessed, and the support designed, in the context of the sector programme support, international commitment and the cross-cutting, regional and thematic issues. The revised overall strategy must consider how research-based knowledge can feed into the development strategy also including the Danish resource base, its knowledge production and quality and its role in knowledge enhancement for the developing countries. Key issues concerning the role of research relate to the concepts of relevance and quality.

In the context of the sector programme support approach, an issue of the broader strategy becomes that of the priority to be given to the education sector in the choice of sectors in the programme countries. Also, the question of whether the approach should be "holistic", covering the sector from primary, through secondary, to higher education and related research, is an issue. For the other sectors, the main issue concerns the scope for combining the principles of ownership and capacity building with knowledge enhancement. It is also important to emphasise the sector-wide

perspective, which implies the inclusion of many different groups and institutions in the respective sectors and not the central line ministries only. It is suggested that there are considerable possibilities for enhancing the sector programme support approach through a knowledge-based overall strategy. This would especially be the case if planning and implementation activities were to a larger degree combined in a process planning approach. Then there would also be more scope for the work and financing of planning, monitoring and evaluation activities to become designed and implemented as knowledge enhancing development assistance.

Development co-operation with the developing countries involve institutional co-operation between partner country institutions and institutions of the Danish resource base. The latter is involved in "institution-to-institution" co-operative arrangements, including many, which are not (either fully or partially) financed from development assistance funds. It is suggested, that the justification for financing from development funds of such co-operation arrangements should be whether these arrangements are identified and designed as an efficient contribution towards solving important development problems and towards achieving the Danish development objectives in the specific country context.

There is clearly scope, in a knowledge based development strategy, for better utilisation and a larger involvement of researchers in Denmark as well as in the developing countries. There is an equally important case for a better utilisation of the other parts of the Danish resource base. The overriding concern should in both cases be the scope for increasing the impact of Danish development policies and development assistance. Utilising the multilateral assistance actively in this context should also be considered. This involves the utilisation of the expertise of the CGIAR institutes, but also more generally multilateral organisations.

More emphasis on targeted, thematic funding could be combined with "Consortia arrangements" of one type or another. This would in particular apply to the institutions involved in the partner countries, but could also be a well justified approach within the Danish resource base. This could be essential in a broader knowledge based approach with major emphasis on applied research and its application.

More flexibility in the use of different support instruments, and in supporting different co-operative arrangements between the various parts of the Danish resource base and between this and developing country (and international) institutions, is suggested.

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