





Advisory Council
for Scientific
Research in Development
Problems



A medium-term perspective on research for development

Research needs and Dutch research capacity



Publication no. 7

Preface

The present advisory report is the result of a request addressed to the RAWOO by the Minister for Development Cooperation to advise on the availability of Dutch research resources for the benefit of development cooperation.

It is the Council's view that an analysis of the availability of Dutch knowledge and expertise for development purposes (the supply side) must be linked to an analysis of the research needs (the demand side). This articulation of supply and demand is at the core of the Council's mandate: to report on the broad outlines of research policy in the light of the social needs of developing countries.

The confrontation between supply and demand led to the selection of a number of research themes to which priority should be given. In some cases, this is already being done, and current research is in line with the priorities identified here; other cases will require a shift in accent if new themes and research lines are to be adequately explored.

Not only adjustments to content will be needed, but also organizational and methodological innovations. Both the collaboration between researchers from different disciplines and the cooperation and interaction with potential users of the research results must be intensified, in order to ensure that Dutch research is keyed to the needs and requirements of developing countries.

In the view of the Council, the programmatic approach is an excellent instrument by which to shape the research collaboration with developing countries - including activities aimed at capacity building - and to bring about the desired innovations. It is important to concentrate the proposed collaboration on a number of programmatic spearheads, in order to reinforce the focus on strategic questions, to guarantee the continuity of research efforts over a longer period, and to improve the cohesion and coordination within research policy.

This programmatic approach is already employed in the long-term, location-specific research programmes being set up in a number of developing countries, with the support of DGIS. Such an approach is also suitable for much of the research undertaken from the Netherlands, in cooperation with researchers from developing countries.

The recommendations contained in the present report are addressed to the parties involved in areas of research which are of special interest to the RAWOO: government departments, intermediary organizations, universities and research institutes. The Council hopes that the medium-term perspective outlined here will have the desired coordinating effect, and that the recommendations will be reflected in the policies and the activities of the actors referred to above.

For the Council itself, this report is clearly not the end of a process, but rather a beginning. Ultimately, the issue is whether the recommendations are taken up and implemented. The Council intends to take the necessary measures to ensure that this does indeed happen. As regards those recommendations which pertain to the role of the Council itself, RAWOO will take the initiative in working these out in more detail, wherever possible in cooperation with the other advisory councils for research (Sector Councils).

I owe a special word of thanks to my predecessor, Prof. Van Dusseldorp, under whose guidance a major portion of the preparatory work for this report was carried out.

Emanuel de Kadt
Chairman, RAWOO

Summary

1. Introduction

The Minister for Development Cooperation requested the Council to report on the *availability of Dutch research capacity* for the benefit of development cooperation. In fulfilling this request, the Council has been guided by the point of departure which states that the question of Dutch research capacity and its availability for purposes of development cooperation (the research supply) cannot be detached from medium- and long-term research requirements (the research demand). This *coordination of supply and demand* is at the core of both the Council's mandate and the process of research programming.

For this reason, the present advisory report centres on a *programming-in-outline-form*, whereby the priorities on the international and, where possible, the Southern research agendas are set against the availability of Dutch research capacity. During the survey and analysis of the supply and demand sides a number of central research themes were identified which should receive priority. Certain of these themes are in line with current research activities and are in some cases part of a broader programmatic research context. Others will require a shift in accent if new themes are to be adequately explored, within either new or existing research frameworks. In an effort to arrive at a more focused research programming, the Council presents here a number of proposals for the elaboration and specification of certain research themes. It is of prime importance that there is close collaboration with researchers and users in developing countries.

The present advisory report, together with an upcoming report on the building and reinforcement of research capacity in developing countries, constitutes the *medium-term view* of the RAWOO concerning research policy for the benefit of development.

The Council's point of departure and guideline for the development of a long-term research policy is the perspective on *sustainable development* formulated by the World Commission on Environment and Development in the report 'Our Common Future', and largely adopted in the final statement of the 1992 UNCED conference in Rio de Janeiro. Taking the aims of sustainable development as its point of departure, and building upon the priorities contained in international and Southern research agendas, the Council distinguishes five major directions for future research:

- research in the social and behavioural sciences, with special reference to environmental and development issues;
- research which benefits the development of human potential;
- research directed towards the conservation, restoration and sustainable management of the resource base;
- the development of sustainable technology and the advancement of small-scale enterprises and employment;
- research into the relationship between governance and development.

The pursuit of sustainable development is not only the guiding principle in the choice of research themes, it also has significant methodological and organizational consequences. It will be clear that the process of social change which is the object of sustainable development has a bearing on the interaction between the ecological system (the exploitation of resources), the economic system (investments and technology) and the sociocultural system (institutional change). This means that in many cases *multi- and/or interdisciplinary research* will be needed which is capable of integrating the contributions from various scientific fields. In addition, potential users of research results, in the private as well as the public sectors, must be involved in the preparation and execution of that research. *The active participation of users* is of essential importance in enhancing the relevance and usability of research. Where research reflects the demands

and requirements of groups and organizations within society, the chances are greater that the results of that research will actually be put to use. In this respect, methodological innovations aimed at identifying the needs of users and translating them into research questions for scientific study are indispensable.

During the preparation of its advisory report, the Council undertook four studies, focusing on agricultural, health, environmental, and socioeconomic research. These studies were supervised by members of the Council and external advisers. The study on environmental research was carried out in close cooperation with the Advisory Council for Research on Nature and Environment (RMNO). The results of these studies were also discussed with policy officials of the Directorate-General of Development Cooperation (DGIS). In the last phase of the preparations, the Council submitted the draft of the final report to a number of key figures in the Dutch research community, who were asked to evaluate the broad policy lines and the feasibility and practicability of the recommendations.

The approach employed in these studies consisted of a *confrontation between supply and demand*: the research requirements on international and Southern policy and research agendas (the demand side) were set against the available knowledge and expertise in the Netherlands (the supply side). In each study the confrontations resulted in the choice of a number of high-priority research themes, which were then grouped together in overarching programme clusters.

2. Central research themes

The high-priority research themes are grouped together in five clusters:

Cluster 1 *Society, behaviour and the environment* consists of two main themes: research into the possibilities for bringing existing production and consumption patterns more into line with sustainable development (theme 1), and environmental and economic research, such as that aimed at the integration of socioeconomic and environmental objectives within development policy (theme 2).

Cluster 2 *Development of human potential* focuses on two main themes: research related to health and disease (theme 3) and research into the socioeconomic, cultural, and political aspects of gender relations (theme 4).

Cluster 3 *Sustainable management of the natural resource base* comprises the research which the Council considers of importance for the sustainable use and management of renewable natural resources, which are of crucial importance to rural populations. The Council places special emphasis on four main themes: research which supports the sustainable development of agriculture and the countryside (theme 5); research which promotes the sustainable use and maintenance of renewable natural resources, such as land, forests and water (theme 6); research which promotes the integrated management of coastal areas (theme 7); and research into the conservation and local management of biological diversity (theme 8).

Cluster 4 *Technology, small-scale enterprises and employment* combines themes pertaining to the role of technology in relation to sustainable development. The Council attaches priority to the following central themes: environmental technology (theme 9), and research into the promotion of small-scale enterprises and employment, in both rural and urban areas (theme 10).

Cluster 5 *Governance and development* is concerned with both national and international issues. The central focus of this research area is on institutional problems arising out of the relationship between the state and society (theme 11); the interactions between development, conflict and security (theme 12), and the influence of the international economic and political order on the development process (theme 13).

3. General policy questions

As a result of shifts in the financing of research, notably the marked increase in short-term, policy-oriented research and advisory studies

commissioned by third parties, medium- and long-term research is increasingly coming under threat. It is precisely this type of research which is of crucial importance when it comes to deepening insights into future development problems, and generating the know-how which can help to solve those problems. Moreover, strategic research plays a major role in maintaining the existing level of expertise.

Recommendation 1

In the view of the Council, strategic research is an indispensable element in the development and application of knowledge for the benefit of development. It recommends that the position of strategic research be strengthened by emphasizing forms of long-term programme financing within general research funding.

In addition, the Council feels that the dynamics of the Dutch scientific world, as currently reflected in such developments as the founding of research schools, is governed more by 'the syndrome of excellence' than by 'the syndrome of relevance'. Very few of the organizational and methodological innovations which could help to bring research more in line with social needs and issues even get off the ground. While the call for multi- and interdisciplinary research enjoys broad support, it has produced very little in the way of concrete results. Lip service is paid to good intentions, which in practice are not realized.

Recommendation 2

Research funding agencies should actively encourage and promote multi- and interdisciplinary research by means of a policy of incentives, which will stimulate research groups to enter into collaboration which goes beyond the boundaries of their own discipline.

However, the funding of this policy requires a better insight into the factors which influence the success or failure of multi- and interdisciplinary research. The RAWOO considers it of importance to initiate a study focusing on the experience gained in various current or recent research projects featuring a multi- or interdisciplinary approach. The Council will take the initiative in setting up such a study, if possible in collaboration with other Sector Councils.

The present involvement of knowledge-users in the preparation and execution of research also leaves much to be desired. Within Dutch development research the importance of employing research methods based on the active participation of end users has not yet been fully acknowledged.

Recommendation 3

In training their researchers, universities and research schools should pay more attention to the advantages of research methods which actively involve users in the preparation and execution of research.

In the view of the Council, the general ageing and the lack of perspective for young post-doctoral researchers are issues which require special attention, in the view of the Council. The increasingly rigid composition of research groups and the lack of mobility are not conducive to dynamism and innovation in research, and in the long term will form a threat to the continuity and vitality of Dutch research, as well as to its contribution to capacity building in developing countries.

Recommendation 4

Research organizations should pursue a more active personnel policy which promotes mobility, so that upon completion of their doctoral studies young researchers can continue their scientific work in the field of development studies and development issues. Within both central university funds and National Research Council funds there is need for a shift from research assistant trainee places to post-doctoral places, in order to prevent further loss of knowledge capital, and to bring more continuity to the research.

The relationship between development, on the one hand, and issues concerned with peace and security, transformation processes, the environment, economics and international commerce, and technology, on the other,

necessitates a broader, more integrated approach to research policy. The Council strives to reinforce the collaboration with other Sector Councils and, where possible, to bring about joint initiatives which go beyond individual spheres of activity.

Recommendation 5

In the light of the need for an integrated policy, the Council believes that research programming and research and technology policies should be better coordinated and geared more closely to policy areas such as development cooperation, the environment, agriculture, and energy.

The centre of gravity of the development debate is shifting towards the role of social institutions, values, standards, and behavioural patterns as the prime determinants of sustainable development. There is a growing realization that technical solutions alone are not sufficient, and may even be counterproductive if they are not accompanied by social and institutional changes.

In this context the Council underscores the importance of research into the changing role and position of women; up to now such research has tended to be isolated, rather than integrated into broad research programmes.

Recommendation 6

Where possible and desirable, an identifiable place should be reserved in current and proposed development-oriented research programmes for the social and behavioural sciences; such research should focus on the social dimensions of development problems, with special emphasis on gender-specific aspects. To that end, the government departments involved or the research funding agencies will have to lay down clear policy guidelines for the benefit of the organizations charged with the execution of policy and the management of programmes.

Recommendation 7

In a European context, the Dutch government should advocate an expansion of the research and technology programme, with a view to developing a multidisciplinary programme which gives explicit attention to socioeconomic, behavioural, and institutional aspects of development issues, as well as to the importance of a gender-specific approach.

Recommendation 8

The Dutch government should advocate a greater participation of the social and behavioural sciences in international research programmes. This should be done in a multilateral context, for example, within the framework of consultative groups (such as the CGIAR) and the United Nations, together with its specialized organizations (such as the WHO, the FAO, and Unesco).

But it is not only a question of initiating new research; it is at least as important to ensure that existing know-how is actually put to use. In this regard, a major role is reserved for international networks, which comprise not only researchers and policy-makers, but also practitioners; these three actors can contribute to improve the exchange of information and the dissemination of research results, in both a policy-making and a practical sense.

Recommendation 9

The Council is in favour of promoting the exchange of information and know-how between North and South, and among developing countries themselves, by actively supporting international networks and giving more attention to the possibilities for transferring information and know-how by means of modern information and communication systems.

4. The implementation of the research priorities

Chapter 4 focuses on the implementation and organizational anchoring of the research priorities within the research policies of the various government departments, the intermediary organizations (charged with the distribution of funds and management of programmes), and the research organizations (universities and research institutes). Where possible, the resulting proposals and action items are keyed to the various actors in the research

arena.

The Council will first formulate a number of recommendations related to the *capacity to influence the various funding flows from within society* (see 3.1 Developments in Dutch research; note 25). With respect to *central university funds* for university research, the Council believes that, in the interest of providing a measure of influence over a portion of this flow of funds, the Ministers of OCW and LNV should invite the various bodies to put forward suggestions which are keyed to the priorities laid down by the RAWOO and deal with organizational and methodological aspects as well as content.

Recommendation 10

Within the framework of policy dialogue with the universities and research institutes, the Council urges the Ministers of OCW and LNV to draw up concrete agreements for the implementation of high-priority research themes and the organizational and methodological recommendations contained in the present advisory report.

The Council will consult with the WOTRO Foundation (*National Research Council funds*), which falls under the NWO (Netherlands Organization for Scientific Research), concerning the implementation within WOTRO policy of the research priorities and other recommendations contained in the present report. As it is clear from its new long-term programme that WOTRO intends to devote more attention to the societal influences on research, this provides an opportunity to discuss with the board of WOTRO how the recommendations of the RAWOO can best be employed in the implementation of the new policy course.

Recommendation 11

The Council invites the NWO/WOTRO to integrate the research priorities, together with the organizational and methodological recommendations put forward in this advisory report, into the Foundation's policy and research programming.

As regards research financing from government departments other than OCW or LNV (*commissioned and other research funds*), the Council is of the opinion that long-term strategic research programmes directed towards important areas related to development should be actively encouraged. Depending on the particular area, the financing of such programmes is the joint responsibility of the departments most closely involved, while resources from central university funds and National Research Council funds can also be called upon. Linking the various flows of funds in this 'programmatic' manner promotes a greater cohesion and coordination of research policy, on the part of the departments/research funding agencies as well as the research organizations (universities and research institutes).

The Council sees this model as an instrument by which to give shape and content to the research collaboration between the Netherlands and developing countries. The programmatic method is highly suited to a problem- and demand-oriented approach, keyed to the needs in developing countries, as well as to multi- and interdisciplinary cooperation, participation by users, and a combination of research and capacity-building.

Recommendation 12

The Council renews its plea for the creation of a limited number of long-term strategic research programmes focusing on important areas of attention related to development, set up and carried out in close cooperation between parties in developing countries and in the Netherlands, the management of which would rest with intermediary organizations at arms-length from the authorities.

The following recommendations are concerned with the *organizational anchoring of the central research themes*. The Council believes that there are realistic opportunities to integrate the themes *production and consumption patterns (theme 1)* and the relationship between *environment and economy (theme 2)* respectively into the strategic research programme Environmental Economics, which is soon to be implemented, and into the

programming of social scientific environmental research in the Netherlands which, at the request of a number of government departments, the RMNO was recently instrumental in setting up.

Recommendation 13

The RAWOO stresses the importance of research into changing consumption patterns and consumer behaviour, and recommends that the research requirements and priorities be further mapped out. In consultation with the RMNO, the Council will consider the extent to which this research is compatible with the programming of social-scientific environmental research in the Netherlands.

Recommendation 14

The Council believes that future research activities in the fields of the environment, economics and development which are of importance for developing countries should be integrated into the proposed research programme Environmental Economy. In the view of the Council, it is appropriate that the Minister for Development Cooperation should support this programme by means of earmarked funds to help finance projects prepared and executed in collaboration with developing countries.

With respect to *health research (theme 3)*, the Council feels that in comparison with biomedical research, sociomedical research is underdeveloped and should be given more emphasis. Cooperation between biomedical and sociomedical research groups has also been underemphasized and will require reinforcement. The substantive adjustments and organizational innovations recommended by the RAWOO will have to be implemented through a process of re-programming. An integrated approach and collaboration between the biomedical profession, epidemiologists and sociomedical researchers are deemed to be of the utmost importance.

Recommendation 15

With a view to the realization of a future research programme, the RAWOO advocates the development of an integrated approach to health research, with priority for the following themes: the functioning of health care systems (health systems research); improved intervention methods; the environment and health; and reproductive health. In 1995 the Council will take the initiative in this matter.

At present, the identity and profile of the work of the research groups focused on the problems of *women and development (theme 4)* still leave something to be desired. The research groups are limited in size and the activities deal with a great many different subjects. Much of the work is applied, largely policy-oriented, as opposed to strategic, research. Moreover, research related to gender relations has not been sufficiently integrated into broad research programmes. Those groups which are active in the field of women and development could take advantage of each other's expertise by working more closely together, and directing their efforts towards a smaller number of multidisciplinary themes.

Recommendation 16

The RAWOO believes that it is important to initiate an exploratory study on the possibilities for combining and streamlining Dutch research efforts in the field of women and development, including opportunities for integrating that research into broader research programmes. In 1995 the Council will execute such an exploratory study.

The research centring on the development of *sustainable agricultural systems (theme 5)* must be better keyed to various new developments and requirements. Not only must the current high-external-input agriculture be made more sustainable, but Low-External-Input and Sustainable Agriculture (LEISA) - which is of particular importance for small farmers in marginal areas and thus enjoys high priority from a development perspective - must be elaborated and diversified. Multidisciplinary research should be initiated which is keyed to the needs of specific agro-ecological zones in developing countries, and prepared and executed in collaboration with farming organizations, NGOs and policy-makers. The necessary substantive and organizational/methodological innovations in agricultural research demand a cohesive, programmatic approach, in order to stimulate new

research lines and methods.

Recommendation 17

The RAWOO recommends that both the demand for research and the available Dutch research capacity in the field of sustainable agriculture be mapped out, in order to establish how the various research lines and approaches outlined by the Council can be elaborated. In consultation with the NRLO, the Council will take the initiative in this matter.

The broad terrain of *renewable natural resources (theme 6)* is a major centre of gravity within the body of Dutch research efforts. In general, research activities, such as those related to the sustainable use of land and water and the management of tropical rain forests, are keyed to priorities on the international and Southern agendas. The problems associated with water scarcity and the management of freshwater reserves are rapidly becoming more acute and will necessitate a closer examination of research demand and requirements. The Netherlands has available the required know-how and expertise, but these could be consolidated and deployed in a more consistent manner.

Recommendation 18

The RAWOO considers it important to map out research needs in the area of integrated water management and the research capacity available in the Netherlands. In collaboration with the NRLO and the RMNO, the Council will examine the possibilities for a joint initiative to work out this theme.

Dutch research in the field of *climate change and the management of coastal zones (theme 7)* is well anchored in various national and international programmes. The Council notes that at present the influence of developing countries on the programming of international research related to global change is limited, and that Southern researchers do not have adequate access to international research programmes.

Recommendation 19

In the view of the Council, it is important to reinforce the role of developing countries in the programming and execution of global change research by enabling researchers from these countries to take part in national and international programmes. The design and support of regional research and training centres in developing countries, the so-called START initiative, is also of great importance and could be actively stimulated by the Netherlands.

With regard to *biodiversity (theme 8)*, the Council is of the opinion that in the years to come new research lines should be set out, and notes that various bodies and authorities have already taken the initial steps towards developing this theme.

Recommendation 20

In the opinion of the Council, future research planning is best served by a joint approach on the part of the Sector Councils most closely involved, i.e., the NRLO, the RMNO and the RAWOO. The Council will bring up the subject in the coordinating committee of the Sector Councils (COS) and, on the basis of these consultations, consider the possibility of a joint initiative to work out the theme of biodiversity.

It will also be necessary to review the opportunities for integrating new research into current national programmes which are in some way related to the problems of biodiversity, such as the Tropenbos (Tropical Forests) Programme. In addition, biodiversity is typically a theme which must be keyed to, and coordinated with, international programmes.

The Council is in favour of concentrating measures related to *environmental/technical cooperation (theme 9)* on developing countries which display rapid economic and industrial growth. Giving priority to these countries is based more on environmental and political grounds than on development policy considerations. From the point of view of environmental returns, efforts might best be focused on the emerging industrial nations of Asia and Latin America. This means that responsibility will rest not only with DGIS, but also with the ministries of VROM and EZ. Moreover, the

Council feels that the emphasis should be on cooperation aimed at developing a local technical infrastructure and capacity. This will enable developing countries to assess the technical expertise 'on offer', to develop technologies of their own, and to key them to local needs and socioeconomic and cultural circumstances.

Recommendation 21

The Council favours a concentration of environmental/technical cooperation in the emerging industrial nations of Asia and Latin America, which are now experiencing a period of rapid economic and industrial growth. It stands to reason that not only DGIS, but also the Ministries of VROM and EZ be involved in elaborating and giving shape to this cooperation.

Research activities in the area of *small-scale enterprises and employment (theme 10)* are often of an ad hoc, policy-oriented nature, which means that they are not sufficiently anchored within broader research frameworks and international networks. Insufficient attention has been given to the role of technical innovation in the development of small and medium-sized enterprises. Researchers in the social sciences who are presently active in this area will have to work together with technologists and environmentalists. For example, they might set up a national network to serve as a central clearing house and help to maintain contacts with Southern and international networks. In the long term, a more intensive exchange of information and know-how can lead to closer cooperation and a concentration of Dutch research around a limited number of multidisciplinary centres of gravity.

Recommendation 22

The Council believes that there is room for improvement in the organization of Dutch research on small-scale enterprises and employment, and invites the researchers involved to create a broad, multidisciplinary network, consisting of technologists, environmentalists and researchers in the social sciences, which can serve as a central clearing house and help to maintain contacts with Southern and international networks.

The broad area of special attention focusing on *governance and development* comprises a great many research questions which will have to be further worked out, in close consultation with researchers in the developing countries. In the years to come many new challenges will present themselves in the area of comparative research worldwide, such as the processes of change in Eastern and Central Europe and the former Soviet Union. Furthermore, the problems related to development, conflict and security form a major new research terrain which must likewise receive due attention.

Recommendation 23

With a view to the realization of one or more future research programmes, the RAWOO believes that the broad field of 'governance and development' should be the object of a programming study, with special attention for the following three research lines: the relationship between the state and society from a comparative perspective; the problem of development, conflict, and security; and the influence which the international political and economic situation has on development. The Council will take the initiative in setting up such a study.

1. Introduction

1.1. Background and context of the advisory report

In a letter dated April 26, 1991, the Minister for Development Cooperation asked the RAWOO to advise him on *the availability of Dutch research capacity* for the benefit of development cooperation. In his letter the minister noted that the requested advice might also be of importance for the Ministers of OCW and LNV, who are responsible for a considerable portion of the Dutch knowledge infrastructure.

The Council's point of departure was that the issue of Dutch research capacity and its availability for purposes of development cooperation cannot be detached from the demand for research in the medium and long term. In the view of the Council, the availability issue derives from a more fundamental question, namely: Where should Dutch research potential be deployed? What are the research needs and priorities of developing countries in the medium and long term, and how can Dutch research be keyed to meet those needs and priorities, in the light of the available know-how and expertise? This *articulation of supply and demand* lies at the core of both the Council's mandate and the process of research programming. The Council has opted for a dynamic, forward-looking approach to the concept of availability, in which it is not so much today's availability as that of tomorrow which is of prime importance.

Thus in the present report the Council is aiming at a *programming-in-outline-form*, whereby the international research agendas and, if possible, those of the South will serve as the main point of departure⁵. The priorities inherent in these agendas have been set off against the available Dutch research capacity. This confrontation has resulted in the selection of a number of main research themes which the Council deems of primary importance. In some cases, these themes are in line with current research activities and/or programmes. In other cases, a shift in accent will be required, through a restructuring of existing research or the initiation of new research within existing or new research frameworks. In order to arrive at a more targeted research programming, the Council presents here a number of proposals for the elaboration and specification of certain research themes, whereby close collaboration with researchers and users in developing countries is of the utmost importance.

Thus the Council sees the Minister's request in the perspective of the development of a long-term research strategy. It will be clear that a fairly modest role is reserved for the Netherlands in the arena of international development research, and that the country will have to make certain decisions about where it can best deploy its resources. By making choices, and directing its efforts towards a limited number of research themes, it can ensure that Dutch know-how makes a high-quality and relevant contribution to the generation and application of international know-how in the field of development.

In its report, the Council deals only indirectly with the generation of know-how and the institutional reinforcement of knowledge infrastructures in developing countries. Although this subject is of great importance, it would not be appropriate to go into the matter in detail here, as the

⁵ The Council realizes that the priorities on international agendas do not entirely reflect the research needs of developing countries, if only because the decision-making on these agendas is largely in the hands of the countries of the North. Nevertheless, the Council takes the view that the international agendas provide sufficient indications to set out a policy outline, which sketches the broad framework within which the specific national needs of developing countries can be adequately met.

Council is presently preparing a separate advisory report on the problem of research capacity building, to be published in the autumn of 1995.

The present advisory report, together with the abovementioned recommendations for the generation and reinforcement of research capacity in developing countries, represents the *medium-term vision* of the RAWOO with respect to development research policy. The elaboration of such a vision is one of the core components of its task, as laid down in RAWOO's charter⁶.

1.2. Points of departure

The Council takes the concept of sustainable development as its point of departure and guideline for the elaboration of a long-range research policy.

Since the publication of the report 'Our Common Future' by the World Commission on Environment and Development (WCED) and the subsequent United Nations conference on the environment and development (the UNCED conference) in 1992 in Rio de Janeiro, the concept of sustainable development has been high on the international political agenda, and is generally accepted as one of the key points of departure in development policy.

The present advisory report employs the following definition of sustainable development, which appeared in the WCED report (WCED 1987:43):

- 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given;
 - the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs'.

The UNCED conference made it abundantly clear that the exhaustion and pollution of the earth's environment cannot be detached from the issue of poverty and the inequitable distribution of wealth between North and South. Principle 5 of the declaration of Rio de Janeiro on the environment and development states that the eradication of poverty is an essential condition for sustainable development, and that global cooperation is necessary in order to reduce the existing differences in standards of living and meet the needs of the greater part of the world's population.

The Council appreciates that the fight against poverty and the conservation of the environment cannot always be realized simultaneously. There may be conflicting socioeconomic and ecological interests which necessitate the making of choices. This represents a tremendous challenge for the research world: to merge the problems of poverty and the environment within a single, cohesive perspective, and to search for solutions whereby measures to combat poverty are ecologically compatible and do as little damage as possible to the environment, while measures aimed at the recovery and conservation of the natural environment are not at the expense of the poor. According to the WCED, sustainable development is nothing more or less than a far-reaching process of social change that touches upon three systems: the ecological system (exploitation of resources), the economic system (investments and technology), and the sociocultural system (institutional

⁶ According to the Council's charter (article 4, section 2), the Council has a duty every four years to draw up a medium-term outline of (i) the areas on which research should focus; (ii) the research areas to which priority should be given, and (iii) the financial and organizational considerations attached to the execution of the research.

change)⁷.

The WCED translates the striving for sustainable development into the following policy aims (WCED 1987:49):

- `reviving growth in developing countries and alleviating poverty (poverty reduces people's capacity to use resources in a sustainable manner it intensifies pressure on the environment);
- changing the quality of growth (make it less material and energy-intensive and more equitable in its impact);
- meeting essential needs for jobs, food, energy, water, and sanitation;
- ensuring a sustainable level of population;
- conserving and enhancing the resource base;
- reorienting technology and managing risk;
- merging environment and economics in decision making'.

The processes of change which must be initiated if the aims of sustainable development are to be achieved must be supported by know-how and expertise. On the basis of the above policy aims, and building upon the priorities on international and Southern agendas, the development and application of knowledge will necessarily concentrate on:

- *the relationship between society, behaviour and the environment* (changes in patterns of production and consumption, and the integration of the environment and economics);
- *the development of human potential* (issues pertaining to health and population, education, and the socioeconomic, cultural, and political aspects of gender relations);
- *the conservation, recovery, and sustainable development of the resource base* (systems of sustainable agriculture, the management of freshwater supplies and forests, climatic changes, the management of coastal areas, and biological diversity);
- *the development of sustainable technology and the promotion of small-scale enterprises and employment;*
- *the relationship between governance and development* (the role and significance of social institutions - both national and international - in sustainable development, and the interaction between development, conflict and security).

However, the striving for sustainable development is not the only guideline when it comes to choosing between the various research themes; there are also important *methodological and organizational consequences*. In this respect, there are two essential points of departure which form a kind of leitmotif throughout the present report:

1. *the importance of multi- and interdisciplinary research;*
2. *the importance of the participation of potential knowledge-users in the preparation and execution of research.*

The process of social change which sustainable development is intended to bring about is concerned with the interaction between ecological, economic,

⁷ `Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations' (WCED 1987:46).

and sociocultural factors. This means that in many cases multi- and/or interdisciplinary research will have to be integrated. Moreover, the various scientific fields will have to be integrated. Moreover, the potential users of research results must be involved in the preparation and execution of that research. The active participation of users is of crucial importance to increase the relevance and usefulness of research. If research reflects the needs and requirements of society, then there is a greater chance that the results of that research will actually be put to use. This will require methodological innovations aimed at ensuring the participation of the end users in the identification of needs and the translation of those needs into questions for scientific research.

1.3. Method

The Council undertook four studies, focusing on agricultural, health, environmental, and socioeconomic research. The results of these studies, which were supervised by members of the Council and by external advisers, are contained in the present report. The study on environmental research was carried out in close cooperation with the Advisory Council for Research on Nature and Environment (RMNO)⁸. The results of the studies were also discussed with officials of the Directorate-General of Development Cooperation (DGIS). In the last phase of the preparations, the Council submitted a draft of the final report to a number of key figures in the Dutch research community; they were consulted on the proposed policy outlines, with special reference to the feasibility and workability of the recommendations.

The approach employed in the four studies consisted in a *confrontation of supply and demand*, in the sense that the research needs which featured on international and Southern policy and research agendas (the demand side) were set off against the know-how and expertise available in the Netherlands (the supply side). A brief outline of the most important research areas appearing on international and Southern research agendas can be found in Appendix 1. Data on the volume of personnel involved and the thematic orientation of Dutch research appear in Appendix 2.

In each study the confrontation between supply and demand led to the selection of several *high-priority research themes*. These were laid side by side, and related and overlapping themes were grouped together in a number of overarching programme clusters.

In selecting the research themes, the Council took into consideration the following factors:

- a. The expected contribution of the research to the solution of urgent development problems.

Special attention was given to the contribution which the research could make to the realization of two main development aims:

- to alleviate poverty and to improve the standard of living, the livelihood, and socioeconomic and political position of the poorest population groups, in particular women;
- the conservation and restoration of the natural environment as

⁸ The preparatory activities for the 'environmental research' study were carried out in close cooperation with the Advisory Council for Research on Nature and Environment (RMNO). A committee was set up, consisting of members of both Councils and external advisers. This committee ordered a background study to be undertaken by TNO/STB, the aim of which was to chart Dutch research capacity in the field of the environment and development in relation to long-range research needs, as reflected in international and Southern research agendas.

an essential condition for sustainable, ecologically compatible development.

- b. The research capacity available in the Netherlands.
- c. Deficiencies and gaps in the existing knowledge and know-how which must be tackled with priority.
- d. Alternative approaches which offer the prospect of new insights.

The Council then considered the question of how the high-priority research themes could be anchored in the research policy of the various government departments, intermediary organizations, universities, and research institutes. It goes without saying that this question cannot be detached from the manner in which the research is financed, or the way the execution of the research and the cooperation with the developing countries is organized. As far as possible, the ensuing proposals and action items have been differentiated according to the actors in the research arena (ministries, intermediate organizations charged with the distribution of funds, universities, and research institutes).

1.4. The structure of the advisory report

Chapter 2 deals with those research themes which, on the basis of the confrontation between supply and demand, should be given priority in the research policies of the government and the research organizations (universities and research institutes). The analyses are based on the results of the four studies. The high-priority research themes are grouped together in five programme clusters: Society, behaviour and the environment (cluster 1); The development of human potential (cluster 2); The sustainable management of the natural resource base (cluster 3); Technology, small-scale enterprises and employment (cluster 4); and Governance and development (cluster 5).

Chapter 3 deals with a number of general policy questions, and discusses developments in the knowledge infrastructure of the Netherlands. The Council examines these developments in the light of desired organizational and methodological innovations flowing from the departure point of sustainable development. Other issues dealt with in Chapter 3 are the question of interdepartmental coordination; the relationship between Dutch and European research policies on development; the position of the social and behavioural sciences; and the question of the accessibility and dissemination of knowledge.

Finally, in Chapter 4 proposals and suggestions are put forward per cluster with respect to the implementation of research priorities in the policy and activities of the various government departments/research funding agencies, intermediate organizations (charged with the distribution of funds and the administration of programmes), and research organizations (universities and research institutes).

2. Central research themes

In this chapter the Council indicates the research themes which should be given priority in the years to come. The choice of themes is based on a careful consideration of both the research requirements (the demand side) and the Dutch research capacity (the supply side).

These central research themes are grouped together in five programme clusters, which will be discussed in turn. Two preliminary remarks are called for here. First, the problem issue of urban poverty and development has not been explicitly mentioned. This could give rise to the impression that the Council considers this problem of secondary importance, or that focusing research on urban developmental issues is not accorded a high priority. The opposite is the case.

In the decades to come, poverty in the metropolitan areas is expected to rise explosively: some 90% of world population increase will take place in urban areas, which by the year 2030 will be home to twice as many people as the rural areas, which at present still house most of the world's population (World Bank 1992:27-28). This expansion of the urban centres of population will lead to a significant exacerbation of the problems now facing those cities: lack of clean drinking water, growing mountains of rubbish, and air, water, and soil pollution due to industrialization, transport, and energy consumption. Areas in the immediate vicinity of the large cities will be confronted with the consequences of the process of urbanization.

In order to understand urban development issues, and to put forward possible solutions to those problems, more information and better insights are needed. The resulting research questions can be examined within several different research themes identified by the Council. For instance, the influence of environmental factors on health in urban areas (poor living conditions at home and at work, lack of clean water and sanitation, and air pollution, both indoors and outdoors) can be dealt with in theme 3 (Health); the problem of the energy supply of low-income groups (fuel-switching), waste processing, prevention and recycling in theme 9 (Environmental technology); the possibilities for encouraging small-scale and micro enterprises in theme 10 (Small-scale enterprises and employment); and the problems of local government and the role of public organizations in the management of the urban environment in theme 12 (State and society).

The second remark is concerned with research into the role and position of women. Theme 4 (Empowerment of women) encompasses a large portion of this research. However, the subject of gender relations in a broader sense will have to be discussed within other research themes as well: those devoted to health, sustainable agricultural systems and the management of renewable natural resources, environmental technology, and small-scale enterprises and employment.

2.1. Society, behaviour and the environment

The point has been made, notably by researchers from developing countries, that up to now insufficient attention has been given to the social dimensions of sustainable development⁹. Within the international

⁹ The Canadian IDRC and the Swedish SAREC were instrumental in setting up the Commission on Developing Countries and Global Change, a group of authoritative researchers from the South. Three considerations were uppermost in the minds of the founders: (i) the gravity of the worldwide environmental crisis; (ii) the necessity of placing the outlook and the perspective of the Third World on the international environmental agenda; and (iii) the necessity of devoting more attention to the social dimension of environmental issues. The composition of the commission was as follows: Anil Agarwal (India), Julia Carabias (Mexico), Martin Khor Kok Peng (Malaysia), Adolfo Mascarenhas (Tanzania), Thandika Mkandawire (Senegal), Alvaro Soto (Colombia), and Erna Witoelar (Indonesia). A summary of the research agenda adopted by the commission appears in Appendix 1.

environmental debate, the accent has until recently been on the scientific and technical dimensions of the various issues. Now, however, more and more emphasis is being placed on the socioeconomic, cultural, institutional, and behavioural aspects of environmental and development issues, and on the manner in which these issues are interwoven with North-South relations in the financial, economic, political, social and cultural sphere¹⁰.

The social causes of unsustainability are increasingly being recognized. To break the downward spiral of continuing environmental decline, changes must be made in human behaviour as well as in failing government and market policies concerned with the environment. As a result, the need for information and insights in the field of the social and behavioural sciences is becoming steadily greater. This encompasses the significance of social institutions, behaviour, values and norms for sustainable development, as well as recent changes in the scientific study of economic growth and development and in the paradigms on which it is based.

The Council notes that environmental research within the social and behavioural sciences is lagging behind efforts in the area of the physical, technical, and agricultural sciences. Current environmental research in the social sciences and economics is in general highly fragmented, oriented towards short-term applications, and insufficiently anchored in broader programmes. For this reason, the Council believes that social-scientific and economic environmental research, in particular long-term strategic research, should be strengthened.

Theme 1: Patterns of production and consumption

Patterns of production and consumption and global eco-capacity, with special emphasis on:

- a. Research into the interactions between population dynamics, increasing per capita consumption, and technical development as the central determinants of sustainable development on a global level, in particular research dealing with the operationalization of the concept of eco-capacity, and the manner in which access to that eco-capacity is distributed.
- b. Research in the field of the social and behavioural sciences which focuses on the sociocultural and sociopsychological background of consumer behaviour and consumer preferences, as well as on the possibilities for encouraging less environmentally damaging consumption patterns and lifestyles.

Thanks to the UNCED conference, the issue of global sustainability has been placed on the international agenda, and the realization is growing that the rapid growth of the world's population, notably in developing countries, and the increase in the average per capita consumption, in particular consumption patterns in the wealthier Western countries and among the elite in the developing world, form a serious threat to natural life systems and the earth's resources, which together represent the heritage of the entire human race.

The wealthy industrial countries have a special responsibility, in the light of the portion of the world's eco-capacity which they take up. They will have to reduce their share of the consumption of the world's natural

¹⁰ See, for example the RMNO's medium-term perspective on research. The message of the RMNO is that 'if we are to take definitive steps in the direction of sustainability, more will be required than purely scientific and technical knowledge. What is needed is insight into the social causes of unsustainability and the instrumental, institutional, organizational and cultural determinants of sustainability or the lack of it' (RMNO 1992:5). The World Bank notes the same trend: 'The environmental debate has rightly shifted away from concern about physical limits to growth toward concern about incentives for human behaviour and policies that can overcome market and policy failures' (World Bank 1992:10).

capital, in order to create more eco-capacity for the developing countries, on the assumption that socioeconomic progress in these countries will initially lead to an increase in environmental damage, and thus to a greater claim on the global eco-capacity.

The problem that must be addressed is the distribution of that global eco-capacity, in space and time, across countries and generations. Socioeconomic research is needed in order to identify options for the policy issues confronting us. Above all, it is a question of finding policy instruments and mechanisms, such as tradable emission permits, which can be employed in an effort to come to a more equitable distribution of the eco-capacity.

The solutions for the question of global sustainability, in an ecological as well as a socioeconomic sense, will have to be sought in (i) changes in the patterns of non-durable production and consumption; (ii) checks on population growth; and (iii) technical innovation.

In the first place, the Western industrialized world will have to acknowledge its own faults, and take steps to change its patterns of production and consumption, and the accompanying lifestyles. To that end, a portion of research efforts will have to be directed towards the background and determinants of human behaviour, the underlying norms and values, and the possibilities for influencing behaviour.

Demographic changes and regional differences in population growth represent an important threat to future generations, in view of the social and ecological consequences. Such an explosive population growth cannot but increase the environmental damage which human activities have already caused. Moreover, it is not inconceivable that demographic dynamics will also affect the very fabric of the social order and the international framework, in the form of migration, social unrest, political instability, and regional conflicts - in short, growing conflict and lack of security (Kennedy 1993:21-46)¹¹.

The rapid population growth in the developing countries has a dynamics all its own which - for the moment at least - is difficult to restructure. Nevertheless, there is growing agreement - confirmed by the recent international conference on population and development in Cairo - that in the long run it will be possible to check population growth, provided that priority is given to a policy which focuses on social infrastructure and human development. Within such a policy, a central role will have to be reserved for improvements to the socioeconomic position and political rights of women; they must be given access to education, health care, family planning, employment and political power.

In Section 2.2 the Council returns to the central role which human resources play in the development process. Section 2.4 deals with the role of technology.

Theme 2: Environment and economy

Environmental economic research, in particular research aimed at:

¹¹ According to Kennedy, there is general agreement that the projected growth in the world population cannot be maintained at our present rate of consumption. 'For it is inconceivable that the earth can sustain a population of 10 billion people devouring resources at the rate enjoyed by richer societies today - or at even half that rate. Well before total world population reaches that level, irreparable damage to forests, water supplies, and animal and plant species will have occurred, and many environmental thresholds may have been breached' (Kennedy 1993:331). Kennedy also points to the fact that 'the developed Northern regions place much greater stress per capita upon the earth's resources than do developing countries, simply because the former consume so much more' (Kennedy 1993:32).

- a. The internalization of environmental costs in the price of products;
- b. The development of ecological-economic methods for the appraisal of natural resources and environmental quality;
- c. The relationship between the environment and international trade;
- d. Policy instruments designed for integrated environmental and development policy.

In the view of the Council, it is of crucial importance to reverse the failure of market forces - at any rate, where the environment is concerned - and to key economic processes and actions to the ultimate aim of sustainability. The common ground between environment and economy offers a number of research questions which should be given precedence. This is an important priority, and one which enjoys broad international support. This was recently demonstrated at the international conference of bilateral and multilateral donors in Bellagio, which examined the implications of Agenda 21 for the collaboration with developing countries in the area of research and capacity-building.

The Council also notes the recognized need to internalize the social costs of environmental degradation and pollution in the price of goods and services. This means that environmental costs must find expression in prices, so that the latter reflect the actual social costs¹². The aim to come to a system of national accounting whereby the GNP is corrected for the cost of environmental pollution, and the loss of natural values, is also broadly borne.

The relationship between international trade and the environment is likewise an important object of study. An international economic system that makes it possible for developing countries to become integrated into the global economy is of essential importance for the economic development of these countries. The liberalization of world trade is capable of increasing the access of developing countries to the markets of the industrialized world, and is therefore an important condition for economic development. However, such liberalization of world trade may also run counter to the objectives of national and international environmental policy. In view of this, the Council is of the opinion that more insight into the relationship between trade and the environment - both the environmental effects of international trade and the effects of environmental measures on trade - is desirable. One of the major results of the UNCED conference is the recognition that the integration of socioeconomic and environmental policies is a condition for sustainable development. While the need for an integrated environmental and development policy is touched upon in almost every chapter of Agenda 21, Chapter 8 ('Integrating Environment and Development into Decision-making') is devoted especially to this theme¹³.

¹² The aim to internalize environmental costs is at the heart of Principle 16 of the Rio declaration (UNCED 1992): 'National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment'.

¹³ In this chapter it is stated that 'Prevailing systems for decision-making tend to separate economic, social and environmental factors (...) This influences the actors of all groups in society (...) and has important implications for the efficiency and sustainability of development. An adjustment or even a fundamental reshaping of decision-making may be necessary'.

The process of policy- and decision-making must be fundamentally altered, in order to ensure that socioeconomic and environmental objectives are integrated into policy. On an international level, environmental policy and development policy should be better integrated and coordinated. On a national level, the crucial question is how economic growth (efficiency) and the fight against poverty (intra-generational equity) can best be coordinated with the protection of the natural environment (sustainability or intergenerational equity). In effect, it is a question of integrating macroeconomic, social and environmental policy, as seen from two different angles: i) the effects of macroeconomic policy on the environment and social policy, and ii) the effects of environmental policy on macroeconomic quantities (production, prices, employment, balance of payments) and various aspects of distribution.

Integrating socioeconomic and environmental objectives into development policy is no easy task. In order to arrive at responsible and well-considered policy choices, the authorities will need a better insight into the various policy alternatives which are available, and the effects of such measures. The development of integrated policy will have to be underpinned by research. However, such policy-oriented research must not be confined to providing 'the tools', the policy instruments themselves. Rather, the analyses will have to include the broader problem of executing and monitoring policy. This means that the adaptability and feasibility of policy measures must be studied within a sociocultural, political and administrative context.

Due to the limited prospects offered by legislation, it will be necessary to make use of economic instruments (incentives). However, one may well wonder whether the principle of 'the polluter pays' can be applied in developing countries, considering the consequences which this would have for the poorest groups.

2.2. Development of human potential

In the view of the Council, the development of human potential should be one of the cornerstones of development policy in the second half of the nineties and beyond. By focusing on policy on improving the social infrastructure (education, especially for girls and young women, health care and family planning) and reinforcing the social position and autonomy of women, such a policy would simultaneously promote all three aims of sustainable development: combatting poverty and improving the quality of life; economic growth; and concern for the environment¹⁴.

Increasing the power and autonomy of women, in both a productive and a reproductive sense, is in itself a major aim. It is also of crucial importance in limiting population growth and realizing sustainable development.

The various facets of human development - education, health, nutrition, population and gender relations - are closely interrelated. It is precisely this interaction which has traditionally been somewhat neglected. To deepen our insights into this relationship, an integrated approach is needed. For example, in analyzing possible measures to improve general health, it will be clear that while health care plays a significant role, other non-medical developments may have an even greater influence on health. Where medical interventions achieve results in developing countries, it is often because they are undertaken in conjunction with developments in other areas. For instance, basic provisions and preventive programmes have been shown to produce far greater effects when the educational level of the population (notably that of women) is high. The involvement of women in various developments within the community is another important factor.

However, a great deal of current health research is characterized by a

¹⁴ 'No other strategy offers such a combination of rich pay-offs', according to Paul Harrison (1992).

reductionistic (biological) approach. This is due in part to the fact that in many cases limited or short-term subsidies force researchers to undertake studies with a limited objective. Research programme should highlight the various aspects of sickness and health, as well as the broader social context in which they must be placed.

Theme 3: Sickness and health

Biomedical, epidemiological and social scientific research related to sickness and health, with special reference to research into:

- a. the application of existing intervention methods;
- b. the functioning of health care systems;
- c. health and the environment;
- d. reproductive health.

Over the years insights into the role of health research and the priorities within that research have altered. While biomedical research into the major tropical diseases has retained its importance, shifts have become visible. There is currently more emphasis on the importance of research into cheap and practical field epidemiology, prevention, early identification and treatment of disease, improvements in the application of existing methods, and ways of making them more affordable and easier to use. As regards the development of vaccines against infectious diseases, there is a real need for research into cheaper production methods and vaccines which do not become unusable when stored at tropical temperatures.

In the light of the above, research into the functioning of the health care system has recently come in for increased attention. If the efforts of the last few years to make health care more effective have made anything clear, then it is that one of the major difficulties centres on how to bring innovations and interventions to the groups for which they were intended. A reinforcement of health care is not automatically accompanied by an improvement in actual health. It will be necessary to study the functioning of that health care, in order to understand how innovations and interventions can contribute effectively to improved health¹⁵. This means that socioeconomic and institutional aspects (decentralization, the use of private intermediary organizations, and the role of the people themselves) must also be the object of research.

The HIV/AIDS pandemic has had far-reaching effects for developing countries, not only from the point of view of health, but also in a socioeconomic sense. The WHO predicts that by the end of this century 40 million people will be infected with the HIV virus, and 10 million of them

¹⁵ In the chapter on research priorities with regard to health system the World Bank report (World Bank 1993) says: 'The international community can help both in gathering data for international comparisons and in assisting local institutions to build up capacity in epidemiology, health economics, health policy, and management. Research priorities in this area include cost-effectiveness analysis of health interventions, evaluations of medical practice and of variations in practice, and studies of drug utilization, equity, consumer satisfaction, and women's health'.

The Health Systems Research Programme of the WHO, in collaboration with the Royal Tropical Institute, is dedicated to the development and dissemination of methodology to carry out such research. 'One of the reasons, apart from scarcity of resources, is that health delivery systems in most countries have been unable to absorb these technologies and to bring them within the reach of the majority of the population. The crux of the problem and the challenge for the future lie in the adaptation of the knowledge and technologies already available so as to make them more relevant, appropriate and applicable to the needs of the community and the health care system into which they are to be integrated' (WHO 1992).

will actually have AIDS. Of these 10 million, some 9 million will live in developing countries. A research group at Harvard University is even more sombre: by the year 2000 a total of 24 million people will have AIDS, and between 38 and 110 million will be HIV-positive. Of all those suffering from AIDS, 42% will live in Asia and 31% in Africa (Mann et al. 1992). Women and marginalized groups are expected to be hardest hit. In developing countries, the AIDS pandemic not only causes immense human suffering, it also represents a serious impediment to the development process, through the loss of the generation that is most active in the labour process, child care, and the care of the elderly.

At the moment AIDS research is still focused largely on the biomedical aspects of the problem, although it has become clear that for the next ten years we will have to rely on measures to prevent HIV transmission in order to keep down the number of new infections. This does not alter the fact that fundamental research centred on vaccines or medication must be continued if in ten years' time we are not to find ourselves in the same situation as now, but then many times worse.

Epidemiological research is carried out largely (94%) in industrialized countries, while it is precisely in developing countries that the need for such research is greatest. Research into AIDS among women is vastly underrepresented, as is behavioural research, not least in developing countries (Mann et al. 1992). Although the 'Global Programme on AIDS' made specific mention of the need for such research, this has not resulted in any appreciable changes.

AIDS is mentioned separately here because the social consequences of this pandemic far surpass those of other epidemics. In certain developing countries the demand for health care may ultimately be so great that present achievements in the field of health care will soon be lost. Moreover, the community's survival mechanisms will be under tremendous pressure, as the main breadwinners are lost to the community. This means that totally new research methods will be needed, all the more because it is imperative that answers to these questions be found immediately. It is of crucial importance to develop methodology which makes it possible to gain a swift and reliable impression of sexual behaviour, the survival strategies of orphans and abandoned women, adjustments to the health care system, and self-help activities.

In many developing countries the need for research into the influence of environmental pollution on public health may be expected to increase markedly in the years to come, in view of the pace and the magnitude of the process of industrialization and urbanization. Some 80% of all diseases and over one-third of all deaths in developing countries are caused by drinking contaminated water, while on average one-tenth of all productive hours lost are due to water-related illnesses¹⁶. Safe drinking water, good sewers, and the responsible disposal of waste and waste water are of crucial importance in the battle to improve public health and combat poverty. In many Third World cities the increasing air pollution (both indoors and outdoors) also forms a considerable threat to public health, and will undoubtedly lead to an increase in the number of respiratory infections.

Because environmental pollution is often accompanied by a very gradual disturbance of the natural equilibrium, the large-scale consequences for public health are not always immediately observable. Some of these disturbances in the equilibrium are irreversible, which points up the importance of prompt collection of information, so that appropriate action can be taken.

The responsibility for a healthy environment clearly lies with the national authorities, who must develop and execute policies designed to prevent or

¹⁶ See Chapter 18 of Agenda 21: Protection of the quality and supply of fresh water resources; subchapter D, Drinking-water supply and sanitation (UNCED 1992:185).

reduce health risks resulting from environmental pollution, and to increase public awareness of this problem. This will require knowledge and insight into the relationship between environment and health.

Most developing countries still lack the necessary knowledge, experience and capacity to set up and execute research in the area of health and the environment. The authorities in developing countries, national and international donor organizations, and public and private institutions will have to work together in order to (i) reinforce the national research capacity in the field of health and the environment by training staff and setting up the necessary organizations, (ii) carry out cost/benefit analyses of various strategies and actions designed to improve the environment, and (iii) stimulate multidisciplinary studies, carried out not only by biomedical researchers, but also by environmental experts and researchers from the social sciences (WHO 1992a)¹⁷.

Much of the research devoted to tropical diseases has gained an additional justification, since it often entails a focus on environmental factors. And yet there is an important difference. In the environmental approach, the emphasis is on environmental factors (stagnant and polluted water, living and working conditions, air pollution), rather than on the biomedical aspects of the disease (Hardoy et al. 1990)¹⁸.

And finally, specific attention must be given to the contribution which research can make to improvements in reproductive health. During the recent World Population Conference in Cairo, the importance of this aspect was emphasized¹⁹. One of the most urgent issues concerns ways to increase access to contraceptives. More research is also needed into the sociocultural and behavioural aspects of reproduction, birth control, and sexuality, which have a considerable bearing on policies in the area of population, family planning and AIDS prevention.

Theme 4: Empowerment of women

¹⁷ This report suggests a number of research priorities in the field of health and the environment: 'Development is recognized as a key issue in the improvement of human health. However, the precise interaction between development and health remains poorly understood; most of the conventional indicators used to measure development have at best only an indirect relationship to health. There is a need for development indicators at all levels that ensure that the state of health of the people is included in the development statistics and make easier the incorporation of health concerns in development plans. An important subject of research should be exploration of significant and, as far as possible, causal relationships between development factors and health indicators, to quantify favourable links and detect possible adverse effects' (WHO 1992a:265-266).

¹⁸ The authors provide a survey of those environmentally relevant factors which have consequences for operational and fundamental research leading to interventions.

¹⁹ In the 'Programme of Action of the United Nations International Conference on Population and Development' (ICPD 1994), reproductive health was defined as 'a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so (...) In line with the above definition of reproductive health, reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being through preventing and solving reproductive health problems' (See Chapter VII, 'Reproductive rights and reproductive health' of the draft of the final document).

Research into the socioeconomic, cultural and political aspects of the relationship between men and women.

There is a clear relationship between poverty and gender. In the developing countries women represent the largest single group among the poor. Moreover, there are indications that the relative number of poor women is actually on the increase ('feminization of poverty'). A growing number of women in both rural and urban areas are heads of families, in most cases poor households.

The contribution of women to society and to the economy has long remained invisible. However, research has shown that despite the limited access of women to the means of production, the formal labour market, and public facilities and services, this contribution is considerable. And yet within the policies of national governments women do not receive the attention which they deserve, in the light of their role and their responsibility in productive as well as reproductive terms. The autonomy of women can be enhanced by removing barriers which prevent them from taking part in the social and productive life of their community.

The inequitable power relations between women and men have been institutionalized: in the economy, in education, and in politics. This inequality can be dissolved by increasing the control and self-determination of women with regard to their own lives and bodies. This will require a transformation of society in all its facets, a transformation which in many cultures and societies will challenge existing assumptions with respect to gender relations. In order to stimulate these transformation processes, research should be directed towards increasing the power and autonomy of women. The following aspects will be of particular importance:

- the access of women and girls to resources (land, water and energy) and the means of production (credit);
- the access of women and girls to public facilities and services (education and training, reproductive health and rights, family planning and child care) and social security systems;
- employment, labour market, and micro enterprises;
- the participation of women in decision-making and political processes;
- various forms of migration, both national and international;
- the organization and mobilization of women;
- the integration of the gender perspective in policy and planning, and the influence of government policy (macro level) on the situation and the activities of women (micro level).

2.3. Sustainable management of the natural resource base

For the poor in rural areas of developing countries, the degradation and exhaustion of resource bases lies at the core of the problem of sustainable development. The poorest population groups are dependent for their basic needs on the biomass potential of the resource base; this is increasingly being undermined, forming a real threat to the livelihoods of these groups. It is the rural poor which are hardest hit by the exhaustion of farmland, erosion, loss of soil fertility, increased salinity of water and soil, deforestation, desertification, and a shortage of firewood and water.

In view of the concentration of poverty in marginal ecologically vulnerable areas of the countryside, there is every reason to give priority to research aimed at breaking through the vicious circle of poverty and environmental degradation, and promoting the sustainable use and management of the existing resources. On the basis of both environmental and development considerations - i.e. sustainable efforts to combat poverty - the Council believes that this research should be given high priority within development policy.

There are two worldwide environmental issues which in the years to come will require extra efforts on the part of the international research community: climate change and the rise in the sea level, and the conservation of biological diversity. In order to come to a global approach to these issues, two agreements were concluded at Rio de Janeiro, the United Nations Framework Convention on Climate Change and Convention of Biological diversity; these have now been signed by a large number of countries. Both agreements underline the role of research, science, and technology in charting the causes and the consequences, as well as finding solutions and developing policy. To that end, the scientific and technical collaboration with developing countries must be intensified.

The Council points out that research into the sustainable use and management of the resource base is not exclusively the domain of natural science and agriculture; in view of the largely social causes of environmental degradation, a multidisciplinary approach is required, one which includes the contribution of the social sciences.

Theme 5: Sustainable agriculture

Technical, ecological and socioeconomic research in support of sustainable development in agriculture, whereby three research lines can be distinguished:

- a. Research into the further development and diversification of small-scale, low-investment agriculture (the so-called 'Low-External-Input Sustainable Agriculture' or LEISA) in marginal areas.
- b. Research into the development of sustainable forms of current high-external-input agriculture.
- c. Research into the interaction between the two types of agricultural systems in specific agro-ecological zones, based on the approach developed by the CGIAR.

Up until now agricultural research has concentrated on the development of agricultural techniques in areas with a high potential for specialized agriculture. Although the application of technology developed for specialized types of agriculture, based on the use of improved seed, artificial fertilizers, and pesticides, has led to an increase in food production, it has also resulted in considerable, often irreparable, damage to the environment. There is a real danger that as a result of increased salinity, millions of hectares of irrigated land will produce less or will even become entirely unproductive. Often there are far-reaching socioeconomic consequences (greater social discrepancies between the farming households with and without means of production, lost jobs, etc). In view of the limitations inherent in current highly specialized forms of agriculture, a reorientation of research policy is called for.

A major portion of the world population (1.5 thousand million people, mainly in sub-Saharan Africa and large areas of Asia) is dependent on agricultural systems in marginal areas, which due to irregular rainfall, low soil fertility and vulnerability to erosion, are not suited to intensive agricultural use. The pressure of population increase often leads to overexploitation and damage to natural resources, resulting in further loss of fertile agricultural land and lower yields, so that farmers are less and less able to provide for themselves.

Agricultural research must concentrate more on systems in marginal areas. Attention should be given not only to aspects of poverty and survival, but also to the sustainable management of the natural environment, including conflicts which may exist between the various aspects. The recent change of course announced by international research institutes such as ICRAF, ICRISAT and the IRRI, whereby emphasis is to be placed on less than optimal production conditions, should be stimulated. It is important to emphasize research into the manner in which poor farming families manage to produce what they do, using the inputs available to them; special emphasis should be placed on the role of women in this process.

Within the framework of LEISA research, local or 'indigenous' knowledge of ecosystems, plants and animals, soil and water conservation, and the control of plagues and diseases is of increasing importance. The further development of participatory methods for the benefit of research into LEISA systems should be encouraged, together with research focusing on a better coordination between indigenous and scientific knowledge systems.

It is also important to make current high-external-input agriculture more sustainable. Support should be given to current research into the optimization of the use of external inputs (e.g., studies concerned with the nutrient cycle) and the development of agricultural methods which make it possible to reduce the use of pesticides, such as the integrated biological control of plagues and diseases.

Another important question centres on the degree to which LEISA techniques are practical and relevant for use in current high-external-input agriculture.

In the further development of research lines, not only the technical aspects must be considered, but also the sociocultural, economic and ecological considerations and the relationship between them. Socioeconomic research should focus on the factors which determine the behaviour of poor farming families (in particular, the way they deal with risks and uncertainty); the institutional and gender-specific aspects of rural poverty and environmental degradation (including rights of ownership, access to resources, organizational forms for the management of resources, in particular 'common property resources'); the role of the state and the effects of government policy at the micro level; the international political and economic context; and possible forms of exchange and interaction between the knowledge which is present at the local level and the scientific knowledge which is part of the worldwide knowledge system.

In addition, other research lines will have to be set out, to provide the knowledge and expertise needed to support the sustainable development of rural areas in the Third World. One of the core questions which, in the view of the Council, should be given priority is how the economic base of the rural economy can be enlarged, with a view to creating employment opportunities outside agriculture. This issue will be dealt with in more detail under Theme 10.

Theme 6: Use and management of renewable natural resources

Scientific, ecological and social-scientific research for the benefit of the sustainable management of renewable natural resources (land, forest and water).

The development of integrated approaches aimed at the sustainable use and management of such natural resources as land, forest and water is one of the top priorities of developing countries, with a view to combatting poverty as well as managing the environment. Each of these problem areas has been given a prominent place on Agenda 21.

Forests are important ecosystems and fulfil a number of essential ecological and socioeconomic functions. It is of vital importance that measures are taken to prevent deforestation, to protect the biological riches of forest areas by developing methods to realize the sustainable exploitation of forest areas and maintain biodiversity.

Water is a primary necessity of life. The world's water supplies are becoming scarcer, while the quality of the water is declining as a result of pollution. Future research must be directed towards safeguarding the quantity and quality of fresh-water supplies and developing an integrated approach to water use and management.

Theme 7: Climate change and the management of coastal areas

Scientific and social-scientific research for the benefit of the integrated management of coastal areas.

The contribution of the Netherlands to international 'global change' research centres on changes in the earth's climate and the management of

coastal areas. Activities are anchored in various international programs, such as the IGBP and the WCRP. A more clearly defined division of tasks is gradually emerging, whereby the Netherlands will concentrate on the interaction between the surface area and the oceans, and the effects of a rise in sea level on the management of coastal areas. It will be clear that this research can also be of great importance for developing countries, since 70% of their inhabitants live in coastal areas and river deltas.

Within the framework of the START initiative, the Netherlands might help certain developing countries to set up a regional centre and/or network for research into coastal areas²⁰. In this way a link could be laid between fundamental/strategic research and location-specific, policy-oriented research. The latter should focus on the local and regional consequences of worldwide climate changes and the accompanying rise in the sea level for the management of coastal areas, as well as on opportunities to respond to these developments by means of policy measures.

Theme 8: Biodiversity

Scientific and social-scientific research into the conservation and management of biological diversity.

In contrast to climate research, research programming in the field of biodiversity has barely got off the ground. Initiatives are presently being taken by the international donor countries to place this theme somewhat higher on the international research agenda, and to work out an internationally coordinated research strategy²¹, within which the needs of the developing countries take pride of place. The Council believes that there are real possibilities for the Netherlands to contribute actively to international research focusing on biodiversity. Such efforts could take advantage of Dutch expertise in plant systematics and the (ex-situ) conservation of genetic material with a view to improving farm crops, as well as the experience gained during the PROSEA project²².

It is vital that the developing countries receive the support they need to set up and execute national research programmes which are keyed to local needs and circumstances, and in which the training of researchers occupies an important place.

Here, too, it must be noted that the conservation of biological diversity is not a question of scientific knowledge and expertise alone, but that more insight is needed into the socioeconomic and institutional factors which now interfere with the sustainable management of the environment. The question of the ownership of genetic material (intellectual property rights vs. the rights of farmers) is of essential importance for developing countries and is deserving of further research. Moreover, it is clear that the knowledge which exists among farmers in local communities in developing countries must play an important role in the conservation and restoration

²⁰ The System for Analysis, Research and Training, or START comprises a number of regional networks for training and research into the causes and consequences of changes in the earth's environment. The START concept was developed by the International Geosphere-Biosphere Programme (IGBP), in collaboration with the World Climate Research Programme (WCRP) and the Human Dimensions of Global Environmental Change Programme (HDGEC).

²¹ Biodiversity was one of the subjects - alongside climate changes and desertification - at the centre of attention during the donor conference held in Bellagio in November 1993, at the initiative of IDRC and SAREC.

²² The Foundation Plant Resources of South-East Asia (PROSEA) is located in Indonesia, which is currently carrying out an international programme focusing on the documentation of plant resources in South-East Asia. The countries participating in the programme are Indonesia, Thailand, Malaysia, Papua New Guinea, the Philippines and the Netherlands.

of biological resources. This means that there must be room for the contribution and the knowledge of the local people in the development of research plans for the sustainable use and local management of biodiversity.

2.4. Technology, small-scale enterprises and employment

Technical innovation aimed at the design of sustainable products and production processes is essential, in order to reduce the pressure on the eco-capacity, and to maintain the ecological basis. The transfer of technical expertise occupies a central position on Agenda 21, and will play a key role in the realization of the aims of sustainable development.

Technical progress is a necessary but insufficient condition for sustainable development. The true problems which hinder change lie in the social, institutional, political, cultural and psychological spheres. Technical innovation must go hand in hand with social innovation. Not only the 'greening of technology' is of importance here, but also - and above all - the 'greening of the public mind' (Bezanson 1993).

The socioeconomic and institutional environment is of crucial significance for the successful introduction and dissemination of new technologies. This means that locally specific socioeconomic research is a necessary complement to the development of new technologies and their adaptation to local conditions. In the choice of new techniques and production processes, due attention must be given to economic, social, cultural and ecological aspects, and the relationship between them. In other words, it is a question not only of ecological sustainability, but also of economic viability and the sociocultural consequences of new techniques for the poorest population groups.

There are major research questions which lie on the common ground between the environment, the economy and technology; these pertain to such problems as the choice of technology in relation to labour market policies and the development of small and medium-sized enterprises.

Theme 9: Environmental technology

Cooperation in the area of environmental technology, with special reference to rapidly industrializing countries.

Technology is of strategic importance for the attainment of a sustainable global society. The collaboration with developing countries in the field of environmental technology must be given high priority within Dutch policy. Rapid economic and industrial development in large, populous, low-income countries such as India, China and Indonesia, and in a number of medium-income countries in Asia (Thailand, Malaysia) and Latin America (Mexico, Chile) has been accompanied by large-scale pollution of soil, water and air. Such pollution will increase still further unless these countries have access to environment-friendly products and product technologies. Against this background, the Council believes that in the development of technical policy, special attention should be given to those developing countries which are experiencing rapid economic and industrial growth.

The Netherlands is in a position to support and assist the countries of the South in implementing cleaner production and energy technologies, and building the technical capacity and institutional infrastructure needed to generate better techniques, evaluate expertise developed in other countries and adapt it to the local situation. This involves not only the technology itself, but also the knowledge and experience which the Netherlands can offer with respect to preventive approaches and such concepts as integral cycle management and the life-cycle analysis of products.

The Council believes that capacity-building should occupy a central position in the technical collaboration with developing countries. It is important that at the local level those skills are mastered which result in more environment-friendly products and production processes, primarily by means of local technology. In the case of enterprises, the capacity for integrated improvements to working conditions and environmental effects should be enhanced, whereby improvements in maintenance and 'housekeeping' will play a central role. It is also important that these countries should

have the capacity to market environment-friendly products successfully. Capacity-building can be enhanced by promoting technical collaboration between industrializing countries (South-South collaboration).

The approach to technical collaboration should be rooted in the following departure point:

- The emphasis must be on capacity-building and the reinforcement of the technical infrastructure, so that in time the developing countries will themselves have the institutional and organizational capacity to develop, assess, apply and disseminate sustainable technologies. To that end, various instruments can be employed: technical collaboration, networks, training, exchange of information (such as the Clean Technology Centres set up by the UNEP);
- The demand in developing countries must be the prime consideration, rather than the supply in the Netherlands. The elaboration of policy must be keyed to the specific needs of the various countries, in terms of environmental problems, technical infrastructure, available expertise, environmental policy, legislation, etc;
- Not only the technical, but also the socioeconomic and institutional aspects of the introduction and dissemination of environmentally sound, clean production processes and products must be taken into consideration;
- The potential end users should also be involved in the process of technical development keyed to the local situation.

And finally, the Council feels that more attention should be given to questions concerned with access to Western technologies and intellectual property rights and patents.

Theme 10: Small-scale enterprises and employment

Research into the promotion of small-scale enterprises and employment, in both urban and rural areas.

Employment is essential to ensure the livelihoods of the poorest groups²³. In the years to come extra efforts will be needed to create employment and income for the expected flood of newcomers to the labour market. This means striving for labour-intensive economic growth, with particular reference to small and micro enterprises, in both urban and rural areas²⁴.

We have already pointed to the necessity for diversification of the rural economy. As a result of the rapidly growing population and the increasing pressure on the available resources, some people will have to seek work outside agriculture.

For this reason, it is important to devote particular attention to the development of small-scale, agro-industries. There is currently a great need for research into vertical linkages (the transport, marketing, storage and processing of agricultural products). The loss of agricultural products as a result of poor storage and transport conditions is often extremely high. Moreover, the processing of agricultural products, with as end product high-quality and nutritious foods, can be a major source of employment outside agriculture. High priority should be given to research

²³ 'The principal development challenge is to meet the needs and aspirations of an expanding developing world population. The most basic of all needs is for a livelihood: that is, employment' (WCED 1987:54).

²⁴ See the policy documents 'A world of difference' (DGIS 1991) and 'A world of dispute' (DGIS 1993), which emphasize the importance of promoting small-scale enterprises and employment.

into existing processing methods, and the possibilities for improving them or developing new technologies for the processing of agricultural products. The small-scale sector provides work and income for a considerable portion of the poorest groups. It is clear that removing the obstacles to the proper functioning of this sector is of the utmost importance for socioeconomic development. Research can increase insights into these obstacles and provide the means to stimulate small-scale enterprises in both rural areas and urban centres. Research should also focus on the needs of small-scale female entrepreneurs.

Technology is of growing importance for the future development of small and medium-sized enterprises, in view of the effects of technical innovation on productivity, employment, and the environment. An important question is how local, specially adapted technology and modern technology can be made to complement and reinforce each other ('blending'). Attention should be given to research into the relative competitive position of various types of technology, and the degree to which they are labour-intensive; many large-scale technologies tend to be labour-saving. Up until now insufficient attention has been given to the specific possibilities of local entrepreneurs and small-scale technology. On the macro level it is important to establish what consequences the various technical policy options will have for economic growth, social justice (distribution of income and employment), and ecological sustainability.

The socioeconomic changes related to the dynamics of national processes of industrialization should also be studied. Because the working conditions in small enterprises are often extremely poor, this research should focus on the social circumstances, labour relations and aspects concerned with exploitation (as much of the work is done by women and children).

2.5. Governance and development

In a relatively short time, the concept of 'good governance' has come to occupy a central position on the international development agenda, enjoying the interest and attention of the major national and international donors²⁵. Within the development debate there is more and more agreement on the major elements of the concept of 'good governance', even though different aspects may be emphasized.

Those elements are:

- participation of citizens in the political process, together with a pluriform democracy, such as a multi-party system;
- respect for and guarantee of civil, political, economic and social human rights;
- efficient and effective management of the public sector and the development process;
- the primacy of principles of justice and legal procedures laid down in law; equality for all under the law;
- public responsibility with respect to citizens and their representatives;
- openness and transparency of the decision-making process.

Proper government, a democratic constitutional state, and a multiform democracy are important conditions for a development process which is sustainable in both a socioeconomic and ecological sense, and which is supported and legitimized by the majority of the population.

Within the body of issues which occupy a prominent place on the 'good

²⁵ According to Moore, there is every reason to suppose that in the nineties development cooperation will be more and more closely bound up with political conditions, i.e., the standards of 'good governance': 'Political conditionality - the tying of official aid disbursements to the quality of government (or 'governance') that recipients provide - has become the norm' (...) 'There is a new orthodoxy which is likely to be with us for the foreseeable future. 'Political conditionality' is beginning to rival 'economic conditionality' in aid allocation - with 'environmental conditionality' also pushing its way to the top table' (Moore 1993:1).

governance' agenda, two main groups or subagendas can be distinguished: 1. the liberal-democratic ('form-of-government') agenda and 2. the administrative-bureaucratic ('process-of-government') agenda (Moore 1993:2).

1. The liberal-democratic agenda

This agenda, which stresses the political dimension of governance, has gained in power since the collapse of the communist regimes in Eastern Europe and the former Soviet Union, and the disappearance of the East-West confrontation. This approach, which attaches political conditions to the allocation of development aid, has become part and parcel of the development policies of the major Western bilateral donors, including the Netherlands.

The contents of the agenda are wide-ranging, and are rooted in the notion that issues such as economic growth, a pluralistic democracy, a market economy, respect for human rights, limitations to military expenditure, and, in some cases, a greater degree of socioeconomic equality, are interrelated and serve to reinforce one another - an assumption which has not as yet been confirmed by research.

2. The administrative-bureaucratic agenda

The second agenda is determined to a large extent by the World Bank and is based on the experiences of the Bank with structural adjustment programmes and economic liberalization in sub-Saharan Africa (World Bank 1989). The fact that these programmes have not always produced the desired results was, in the view of the Bank, due to lack of administrative and governmental capacity, corruption, lack of openness and transparency in the policy-making process, insufficient public accountability, excessive political influence on the public sector and too little attention for the private sector (Lancaster 1993:9-10).

In other words, the motives of the World Bank in placing issues such as governance on the development agenda were of an administrative-bureaucratic rather than a political nature. The first concern of the Bank is related to aspects of governance which are of direct significance for economic policy and management, in contrast to the political aspects of governance, which are in fact beyond the scope of its mandate (Moore 1993:39). It is for this reason that in the above mentioned policy document the World Bank emphasizes the following four dimensions of governance: (i) management of the public sector, (ii) public accountability, (iii) the legal framework for development, and (iv) information and transparency.

In practice, the two agendas are not that far apart; moreover, in the course of time they have grown steadily closer together, if only because an economic-administrative approach also has important political implications. Nevertheless, to a certain extent the governance agenda has remained donor-centred; it is an agenda which in its political aspects, at any rate, has met with opposition from many developing countries. This does not alter the fact that the report of the 'South Commission' likewise recognizes the importance of political reforms, democratization, and guarantees for civil liberties and human rights²⁶. The administrative aspects of the governance agenda are less controversial; the importance of better public government and management is recognized by the developing countries themselves.

²⁶ 'In the final analysis, the South's plea for justice, equity, and democracy in the global society cannot be dissociated from its pursuit of these goals within its own societies. Commitment to democratic values, respect for fundamental rights - particularly the right to dissent - fair treatment for minorities, concern for the poor and underprivileged, probity in public life, willingness to settle disputes without recourse to war - all these cannot but influence world opinion and increase the South's chances of securing a new world order' (South Commission 1990:287).

While there is a degree of consensus on certain aspects of the governance problem, the research agenda has barely been worked out. As L. de la Rive Box put it at a RAWOO lunch lecture: 'In the Netherlands the situation resembles that in the English-speaking world: the policy-makers beat the drum, and the scientific music follows'²⁷. Thus it is not easy to indicate the most important governance questions, let alone the research requirements and priorities related to those questions.

Nevertheless, to make start, here are some of the major political and administrative issues, including several possible themes and research subjects which arise from those issues.

Theme 11: State and society

Research into the relationship between state and society, with special reference to:

- a. Economic, political and institutional reforms.
- b. The relationship between governance and culture.
- c. The administrative limitations of weak states and the implications which this has for policy and execution.

Since the second half of the eighties the debate focusing on the relationship between the state and society has been at the centre of discussion. This calls up a number of questions, in the first place, the question of the role of the state versus the role of the market, private enterprise and social organizations in the development process. Should the authorities confine themselves to creating an 'enabling environment' for citizens and companies, or is the active intervention of government necessary in order to ensure successful development, and if so, how should this be realized? In the last few years it has become increasingly clear that legislation suffers from serious limitations and - even apart from the problem of enforcement - can have a disruptive effect on market dynamics and ultimately on the poor. An important research question is whether a policy of incentives implemented by the state can create the conditions which make it possible for markets to function in the interests of the poor.

And second: what are the possibilities and limitations of NGOs and 'community organizations', and how can they involve the local population in interventions? Can such organizations anticipate the problems caused by the weakening of the existing mechanisms of social security (safety nets) for the elderly and the handicapped, as a result of economic development and modernization? Can popular organizations and local authorities work closer together in managing the rural and urban environment? How can these organizations influence the formal processes of (democratic) decision-making, and thus contribute to good governance? This, too, is an important area of research.

Political and economic reforms

The present wave of political and economic liberalization in Eastern Europe, the former Soviet Union, and the Third World is leading to far-reaching social changes. Very little research has been done into the nature, course, interactions and consequences of these processes of change. In many cases, the reshaping of centralized, planned economies into free-market economies entails a 'double transition' - from a command to a market economy, and from a war to a peace economy. Research questions could focus

²⁷ In 1993 the RAWOO, in collaboration with DGIS, organized a series of lunch lectures devoted to the theme 'good governance'. The series consisted of seven lectures on a variety of topics, such as the importance of jurisprudence, democracy and good management in Africa, decentralization and the public sector in Zimbabwe, and structural conditions for good governance in Latin America. The lectures are to be published in book form.

on the consequences of reform measures for vulnerable groups within society, the problems involved in large-scale demobilization, and the financial consequences of these transitional problems for government. Another aspect which is of considerable importance here has to do with the effects of reform measures on vulnerable sections of the population: why are the poor the most vulnerable, and what measures should be taken (or abolished!) in order to reduce that vulnerability?

There is also the crucial question of the sequence in which the various steps in the transitional process should be taken. Experiences in the Soviet Union have demonstrated that the inadequate institutional and judicial anchoring of market processes leads to a failure of the market, which in turn places additional pressure on political reforms. This means that due attention must be given to the relationship between economic and political liberalization, and in many cases to the sequence of the various steps. Is an open democratic society - in the long term, at any rate - a necessary condition for sustainable development?

Alongside these broad themes, a number of limited themes might be addressed, such as the issue of good governance within government services and state-run companies, their possible privatization, and the institutional issues related to the emergence of a multi-party system and the beginnings of a process of democratization.

The cultural dimension of governance

Some observers have come to the conclusion that donor interventions aimed at improving public government which take insufficient account of the locality specific context may have a negative rather than positive effect. Others, however, believe that it is highly unlikely that good governance can be introduced from outside the community (Doornbos 1991:9-10). Indeed, the introduction of Western concepts of governance, democracy and public government in countries which have undergone a totally different historical and cultural development raises numerous questions. The liberal-democratic constitutional state and its institutions are, after all, rooted in Western values and norms. One is surely justified in asking to what extent these institutions can be transplanted to societies which are based on other culture values and norms, right down to the level of personal relations. The same goes for the transfer of administrative institutions, organizational forms, and management styles.

In short, there is no uniform standard model of good governance suitable for application at all times and in all situations. Donors will have to be more aware of the historical and cultural differences between developing countries, as well as the specific role and position of the government apparatus (whether it is rooted in the civilian society or opposes it), which may differ sharply from one country to another. A better understanding of the significance of these factors will undoubtedly increase the chances of success for processes of change in the direction of 'good governance'.

The administrative organization and the policy-making process

The decentralization of political and administrative power is often seen as a means of achieving a more equitable distribution of political power, and involving the local population in the process of policy-making. Research is capable of providing insight into the consequences of administrative reforms and the process of decentralization, delegation and privatization. What experience has been gained thus far with regard to a more active involvement of the local population in political decision-making? Is this experience tied to a particular culture? And what is the relationship between central and local policy and government (what has been decentralized or privatized, and how; and in what sense does the central government perhaps still hold power)?

Our insights into the organization of the decision-making and policy-making processes are also limited. How is policy formulated and executed? Which actors influence that policy? How are interest groups involved in the formulation of policy? How is policy coordinated between sectors and on various levels? In general, what obstacles and impediments stand in the way of an efficient and effective government policy?

Theme 12: Conflict and development

Research into processes of political and social disintegration as a result of social, ethnic and religious tension and conflicts.

After the disappearance of the East-West confrontation, new sources of tension and conflict presented themselves: political disintegration, the collapse of nation-states as a result of emerging nationalism and separatism, increasing ethnic and racial discrepancy, and confrontations between religious extremes. According to Minister Pronk of Development Cooperation, apart from a few exceptions, the new conflicts which present themselves are no longer those between states, but within countries themselves. These are ethnic, racial, religious, and cultural conflicts, between language groups, between native-born and foreign residents, between majorities and minorities. These conflicts ignore national borders, and are threatening to spread like wildfire throughout the entire world (see Pronk 1993).

From Pronk's point of view, the period of uncertainty, instability and conflict which lies ahead can best be described as a kind of transition, during which the foundations must be laid for the twenty-first century. He describes it as a transitional period, in which the emphasis must be placed on containing conflicts, in order to secure peace and stability, and to ensure that in the future cooperation will again be possible, with a view to investing in growth and development.

In other words, in the years to come it is the security agenda rather than the development agenda which should not only take priority, but should be at the centre of attention.

There are a number of related themes and issues among the new items on the research agenda for good governance. These include:

- the mechanisms of integration and disintegration in ethnically divided or multi-ethnic societies;
- the conflict between processes of modernization and traditional norms and values, and the possible consequences of such conflicts, including the emergence of fundamentalist movements (whether religious, ethnic or nationalistic);
- the rights of women and children in such extreme situations.

Theme 13: International economic and political relationships and institutions

Research into the influence of international economic and political relationships and institutions on development.

Developing countries have rightly pointed out that the issue of governance is concerned not only with the internal problems of these countries but also with international aspects, in particular the political and economic relations between North and South and the manner in which those relations have been institutionalized.

The structural changes in the global economy and the effects of these changes on developing countries form an important topic for future research. This might include:

- scenario studies focusing on the consequences of the globalization of the economy for various groups of developing countries;
- research into the socioeconomic and cultural effects of worldwide technical developments, such as those taking place in the field of information and communication technology, biotechnology, and materials technology, on developing countries (research into technical aspects);
- the role of donors and the relationship between external interventions and good governance. The question here is whether - and to what extent - the external intervention of national

and international donor organizations is detrimental rather than beneficial to the realization of an autonomous and locally based development process;

- the role of the EU and the consequences of European integration and EU policy (socioeconomic, technical and cultural) for developing countries;
- the consequences for development cooperation of the relationship between on the one hand, 'Brussels' and the international institutions (World Bank, IMF, UN organizations) and on the other hand, the national authorities within the EU. This refers notably to the effects on developing countries of the difference between policies that are actively coordinated and policies which are independent, and thus likely to be contradictory.

In addition to studies devoted to the consequences of structural change and the policies of existing institutions, research into better global management in various fields should be stimulated, with special reference to North-South issues and the fight against poverty. Such research could pinpoint possible ways of expanding and improving supranational policy formation. Moreover, this may be seen as an extension of the scenario studies referred to above: which institutional changes are needed to make the world more livable than predicted by current trends? This theme was also on the agenda during the seventies, and could again be tackled. The political and cultural climate in the Netherlands would still appear to be receptive to such research.

3. General policy issues

The Dutch research and science establishment has undergone fundamental changes during the eighties and nineties. In Section 3.1 the Council outlines several important changes in the financing and organization of development research in the Netherlands, with special reference to the organizational and methodological departure points (multi- and interdisciplinary studies, the involvement of users in the preparation and execution of research) which are set out in Chapter 1.²⁸ Furthermore, the Council examines the issue of interdepartmental coordination (Section 3.2), the European dimension (Section 3.3), the position of research in the field of the social and behavioural sciences (Section 3.4), and finally, the question of the accessibility and dissemination of scientific knowledge.

3.1. Developments in Dutch research

The Council previously described the category development-oriented research as 'all the research which has a directly demonstrable relationship with development issues and/or developing countries' (RAWOO 1990). This definition encompasses a broad range of research activities in wide-ranging disciplines and specialties, and covers the entire spectrum of scientific study: fundamental, strategic and applied research. It includes research in the fields of agriculture and food supplies, health, the environment, technology, the economy, society, and culture, as carried out by universities, research institutes with a specific brief, and institutes for International Education.

The inventory of Dutch research activities within the framework of the four separate studies has produced a global picture of the research capacity (in terms of the deployment of scientific personnel) in the various research areas (see Appendix 2). The estimated deployment of scientific personnel for research keyed specifically to developing countries, in terms of number of 'full time equivalent' (FTE) persons, is as follows: agricultural research 240 (fte), health research 125 (fte), environmental research 325 (fte), and social-scientific research 400 (fte). These figures should be employed cautiously, as they are no more than rough estimates. In practice, the delineation of the Council's sphere of activity - all research which is of importance for developing countries - is itself not without problems. Moreover, there is a considerable amount of overlap between the four research areas.

Trends in research funding

There is no specific information²⁹ available on trends in the central university funds for development-oriented research. It is, however, possible to sketch certain general developments in the financing of university research, with which development-oriented research has also been confronted to a greater or lesser degree over the past few years.

Government funding for the universities declined during the eighties. The volume of research expenditure for which funds have been budgetted dropped from 1,730 million guilders in 1987 to 1,571 million in 1990 (Ministry of Education and Science 1991:35). However, the total research budget of the universities shows an upward trend, due to an increase in the National Research Council funds (NWO and WOTRO) and, above all, the commissioned and other research funds. In 1990 the contribution of these three flows of

²⁸ The observations of the Council are based on the results of a preliminary study, as well as on a number of case studies carried out at the initiative of the Council and aimed at mapping out the major trends in the capacity, organization and financing of development-oriented research in the Netherlands (see Hicks et al. 1994).

²⁹ Three funding flows are distinguished. The first flow consists of *central university funds*, the regular funding for the universities from the Ministry of Education, Culture and Science (OCW). The second consists of *the National Research Council funds* from NWO. The third flow of funds comes from public and private bodies (*commissioned and other research funds*).

funds to university research was as follows: central university funds 60%; National Research Council funds 15%; and commissioned and other research funds 25% (Ministerie van O&W 1991:43).

In spite of shrinking government resources, there has been an increase in the research capacity (the volume of scientific personnel in full time equivalents) which is financed by central university funds. To a large extent this is due to the rapid increase in the number of trainee research assistants (AIOs) from 1985 on. An AIO is appointed as a scientific researcher for a period of four years, during which time (s)he must complete his doctoral research. Together with the OIOs (researchers in training, financed by National Research Council funds), and the post-doctoral researchers, AIOs account for approximately 50% of the total research capacity within the universities (Ministerie van O&W 1991:50).

The volume of the National Research Council funds for development-oriented research (NWO/WOTRO) has risen sharply since 1992. The WOTRO budget went from 4.1 million guilders in 1990 to approximately 8 million in 1994 (core-funding about 5 million and funds from third parties about 3 million) (NWO 1994:147). A portion of the external funds came directly from DGIS.

The research financing from government departments other than OCW or LNV (commissioned and other research funds) increased markedly during the eighties and nineties, going from 105.8 million guilders in 1986 to 172 million in 1992³⁰. The major financier of this research is DGIS. In 1992 the total expenditure on research by DGIS was estimated at 153.7 million guilders. The long-range estimates predict a further increase, to 205.7 million guilders in 1995 (DGIS 1992:46). The expenses of the Spearhead Programme on Research (part of total DGIS funds) totalled 43.5 million guilders in 1991, with an expected rise to 68 million in 1995. Almost 50% of the total research expenditure of DGIS in 1991-92 went to the sector agriculture (not including forestry and fisheries), 16.1 million of which was destined for international agricultural research related to CGIAR. Some 10% of the expenditures went to the health sector (including drinking water and sanitation) (DGIS 1994:36).

On a supranational level, the European Union (EU) came to the fore as a financier of collaborative programs undertaken together with developing countries. Some 126 million ECUs is reserved for the programme line 'Life sciences and technologies for developing countries' (STD 3) within the Third Framework programme for research and technical development (1990-1994). STD 3 has two subprogrammes: 'Tropical and subtropical agriculture' and 'Medicine, health, and nutrition in tropical and subtropical areas'. During the period 1982-1989 a total of 230 million guilders was reserved for the STD programme. Of this, 15 million guilders found its way to Dutch contract partners. This is 6.5 % of the total STD expenditures (see Ministerie van O&W 1991a:54)³¹.

In short, the *relationship between the various flows of funds* has altered drastically since the eighties. A considerable shift has made itself felt in the direction of the commissioned and other research funds, which now accounts for an increasing portion of research financing. DGIS and the EU (STD programme) are the main external financiers. The research expenditures of the national government in the sector development cooperation have risen from some 100 million guilders in 1985 to approximately 200 million in 1994. The lion's share is accounted for by DGIS. The volume of the National Research Council funds (NWO/WOTRO) displays an upward trend. In contrast, the share of the central university funds has declined.

³⁰ The figures given here are based on the 'Science Budgets' 1986 and 1993 of the Ministry of Education and Science.

³¹ The marked growth in EU resources for research cooperation with developing countries appears to have made way for a marked drop in the Fourth Framework Programme.

The position of strategic research

The sharp rise in externally financed research has had a major effect on the nature and direction of university research efforts: applied research and consultancy have both greatly gained in importance, while strategic research has lagged behind. However, it should be noted that a portion of the commissioned and other research funds involves programme or project subsidies, whereby the researchers determine the content of the research (within certain general frameworks and priorities) and are allowed to submit proposals ('sponsor research'). This is contrary to commissioned research, the contents of which are determined by the body commissioning the research ('client research').

The Council has received indications that as a result of the shifts in the various flows of funds, strategic research has to some extent been prejudiced. A few examples will serve to illustrate this. At the Agricultural University Wageningen (LUW), the share of the commissioned and other research funds in the total funding of tropical research has risen to approximately 40%, primarily in the form of small projects and short-term research (LUW 1990). The TNO/STB inventory of research devoted to the environment and development, carried out under the auspices of the Council, points in the same direction, arriving at a share of 40% for contract research (TNO/STB 1993).

Another example is the Royal Tropical Institute (KIT). Although this institute has a specific task centred on research in and for developing countries, the R&D share of the basic subsidy declined from 7.4 million in 1988 to 2.5 million in 1991³². Research activities are increasingly being financed by project and commissioned funding. As a result of the shift in the funding pattern, applied, policy-oriented research and consultancy now predominate within research activities as a whole³³.

In the opinion of the Council, too pronounced an emphasis on short-term research and consultancy commissioned by third parties is counterproductive, and entails a danger that strategic, long-term research will be neglected. This research is of essential importance in deepening our insights into future development problems and providing the expertise necessary to solve them. Strategic research is the source of applied research and plays an important role in maintaining our knowledge basis.

Recommendation 1

In the view of the Council, strategic research is an indispensable element in the development and application of knowledge for the benefit of development. It recommends that the position of strategic research be strengthened by emphasizing forms of long-term programme financing within general research funding.

Scientific excellence and social relevance

Scientific excellence and social relevance are not always compatible, and may even be at odds with one another. It is sometimes difficult to combine the aim to promote scientific development in a particular field of study with the demands and criteria inherent in research which must be relevant

³² Figures based on the Science Budgets 1988 and 1991 of the Ministry of Education and Science). N.B. This refers to the R&D share of the core-funding.

³³ In its 1988 advisory report on the mission of the non-university research institutes, the then RAWB (now AWT) noted that 'following evaluation in 1983, and the subsequent reorganization, the KIT has become highly commercialized (...) as a result of which, it (the RAWB) has the impression that research in the area of rural development has become an almost exclusively consultancy-type activity, with very few possibilities for reflection and innovation' (RAWB 1988:77).

and usable in developing countries. The Council has laid down the criteria which such research must meet in a number of advisory reports (RAWOO 1989 and RAWOO 1991).

The Council notes that the internal dynamics of the Dutch scientific world, as currently reflected in such developments as the founding of research schools, is governed more by 'the syndrome of excellence' than by 'the syndrome of relevance'. The universities are increasingly retrenching, pulling back to their primary tasks, which means that there is less scope for strategic, problem-oriented research in the service of society, in this case the societies of the Third World. In the view of the RAWOO, it would be regrettable if the universities were to turn their attention ever more inward, losing sight of the orientation towards the research demands of developing countries.

The Council points out that in the assessment of research the concept of quality is sometimes reduced to scientific quality; considerations and criteria of an internal disciplinary and scientific nature are put first, and the achievements of the individual researcher are measured in a highly mechanistic and quantitative manner, on the basis of his or her publications in international refereed journals. This results in cumulative damage to development-oriented research, which often requires more time, involves research questions that cannot be adequately dealt with within a single discipline, and results that are not always intended primarily for publication in international journals. The Council again refers expressly to its own vision of quality, as formulated in the advisory report 'Outstanding research in the field of development issues' (RAWOO 1989).

In the view of the Council, the Dutch research world should take care to remain receptive to the needs of Third World societies and, in cooperation with the research community there, concentrate on research projects that can help to solve the problems facing these societies on the eve of the twenty-first century. Not only considerations concerned with development, but also broader, scientific motives argue in favour of stimulating the generation of know-how and expertise keyed to development issues. Such expertise is important not only from the viewpoint of development cooperation but also, and increasingly, for economic, political, security, and environmental reasons.

Multidisciplinary and interdisciplinary research

It will be clear that development issues require a multidisciplinary and even interdisciplinary approach³⁴. While the call for multidisciplinary and interdisciplinary research enjoys broad support, it has produced very little in the way of concrete results. Lip service is paid to good intentions, which in practice are not realized. There is a wide gap between word and deed, between rhetoric and reality, a gap which has narrowed only slightly, if at all, in the past few years. Most initiatives get no further than well-intentioned ideas which look promising on paper, but wind up as an ad hoc collection of results drawn from monodisciplinary research.

There are countless obstacles and impediments standing in the way of multidisciplinary and interdisciplinary research: the organization and financing structure of university research along disciplinary lines, the low scientific esteem in which it is held, management problems,

³⁴ Definitions of these concepts vary. Minimally, there is agreement that in well-designed multidisciplinary research various monodisciplinary studies complement one another, so that various aspects of a subject are examined in an integrated manner. In interdisciplinary research, problem formulation has even more prominence (and is often policy-related), so that neither the research instruments nor the analysis are drawn from a single discipline. Here, then it is a question of collaboration between researchers from different disciplines, often as a team. This is easier to realize in the case of adjacent disciplines ('narrow' interdisciplinary work) than for disciplines which are further removed from one another (say, the exact sciences and the social sciences).

methodological complications, high costs, and the cultural differences between researchers from different areas of science.

It is high time that these barriers were demolished and initiatives launched to promote collaboration beyond the borders of individual disciplines, in particular cooperation between the exact sciences and the social sciences. This could take the form of financial instruments (such as a bonus arrangement or the earmarking of funds), measures aimed at the schooling and training of researchers, or measures in the area of research organization and management, including personnel management³⁵.

Recommendation 2

Research funding agencies should actively encourage and promote multi- and interdisciplinary research by means of a policy of incentives, which will stimulate research groups to enter into collaboration which goes beyond the boundaries of their own discipline.

However, the funding of this policy requires a better insight into the factors which influence the success or failure of multi- and interdisciplinary research. The RAWOO considers it of importance to initiate a study focusing on the experience gained in various current or recent research projects featuring a multi- or interdisciplinary approach. The aim of such a study would be to identify the factors leading to the success or failure of multi- and interdisciplinary research, and to draw lessons for the future. The Council will take steps, where possible in collaboration with other Sector Councils, to initiate this study.

Participation by users

The groups and organizations in the community which have an interest in the research should be involved in its preparation and execution. The participation of knowledge-users is essential, in order to improve the coordination of supply and demand on the research market and to enhance the effectiveness of research.

In collaboration with researchers, the problems and needs of groups within society will have to be translated into subjects for research. From the late seventies on, countless new and innovative research methods have been developed to identify quickly the most urgent problems and needs, with the cooperation of the local population and future users, and to determine how research can contribute to a solution. The Council points to such methods and techniques as Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), and Rapid Assessment Procedures (RAP)³⁶. The use of these methods, which have flourished in rural areas in particular, has gradually been extended to technical and health research, and more recently to research dealing with biodiversity and urban issues. The Council notes that these research methods have gained little acceptance within Dutch development-oriented research.

Recommendation 3

In training their researchers, universities and research schools should pay

³⁵ See the report by Manor and De Kadt (1990), which proposes a series of measures to promote multi- and interdisciplinary research.

³⁶ These methods are known by the collective term Rapid Rural Appraisal (RRA). RRA encompasses a wide range of approaches, which have much in common from a conceptual and methodological standpoint. They include Participatory Rural Appraisal (PRA), Participatory Learning Methods (PALM), Agro-ecosystem Analysis (AEA), Farming Systems Research, Rapid Assessment Procedures (RAP), Participatory Action Research (PAR), Rapid Rural Systems Analysis (RRSA), Méthode Accélérée de Recherche Participative (MARP), and many others. See the series of RRA notes published by the International Institute for Environment and Development (IIED), and Sustainable Agriculture Programme. The aim of this series is to encourage fieldworkers to exchange information on the results of these various methods.

more attention to the advantages of research methods which actively involve users in the preparation and execution of research.

Research schools

In recent years, the universities have displayed great energy and enthusiasm in setting up research schools. The Council applauds this development, in the conviction that the consolidation of research capacity in national research schools can help to improve the training of researchers, while increasing programmatic cohesion and national collaboration and coordination within research efforts. This involves not only collaboration between researchers from different disciplines, but also - and above all - cooperation between university and non-university researchers. The institutionalization which is inherent in a research school offers perspectives for continuity and the long-term anchoring of research efforts. Research that is not consolidated within research schools is in danger of disappearing altogether as soon as new budget cuts make themselves felt.

Research schools have also been recognized within non-Western social and cultural studies, such as the Centre for Non-Western Studies (CNWS) in Leiden, the research school CERES, and the Amsterdam School of Social Research (including CASA). Research schools in other fields, such as agriculture and the medical sciences, also undertake research which focuses on the problems of developing countries.

As the research schools are still in the initial stages of their development, the Council has some sympathy for the fact that initially the boards of governors were searching for possibilities to consolidate existing research projects and place them within a common framework. In this light, it is understandable that many projects are still operating independently, are largely monodisciplinary, and display very little cohesion. The universities themselves will have to gradually 'grow into' this new role.

The Council places great emphasis on the concentration and consolidation of scattered expertise and capacity, both within and between institutions. It favours close cooperation between university and non-university research groups, which will then be in a position to complement and reinforce one another. The Council welcomes initiatives in this direction, such as the collaboration between the LUW and the International Education institutes, and the cooperation on a national level which is embodied in the research school Centre for Resource Studies and Human Development (CERES), a 'joint venture' involving five universities (RUU, UvA, VUA, KUN, LUW) and the ISS.

Lost generations

Since around 1985 the number of trainee research assistants in the field of development-oriented and non-Western studies has rapidly increased. These trainee research assistants have a temporary appointment and their perspectives with regard to an academic career are uncertain. Since there is no postdoctoral policy, it may be assumed that a great deal of scientific talent is being lost to research after completion of the doctoral studies. This problem becomes even more acute when one looks at the age structure of the permanent staff of the research institutes. Many employees in the higher ranks are over 50 years of age, and within the foreseeable future, 10 or 15 years, say, they will be retiring. In the long term, this can drastically affect the continuity of research: at the bottom of the pyramid there is no post-doctoral policy that would allow promising researchers to hone their research skills, while at the top of the pyramid there is the imminent disappearance of a generation of scientists who have for so long determined the image of development-oriented research in the Netherlands. The loss of this generation may be at the expense of the Dutch contribution to capacity-building in developing countries, where experience and high-calibre expertise are needed.

In the view of the Council, the lack of perspective for young and talented researchers on the one hand, and the general ageing on the other hand, are issues which require special attention. The rigid composition of research groups and the lack of mobility are not conducive to dynamism and innovation in research; in the long term they will form a threat to the

continuity and vitality of Dutch research, as well as to its contribution to the generation of capacity in developing countries.

Recommendation 4

Research organizations should pursue a more active personnel policy which promotes mobility, so that upon completion of their doctoral studies young researchers can continue their scientific work in the field of development studies and development issues. Within both central university funds and National Research Council funds there is need for a shift from research assistant trainee places to post-doctoral places, in order to prevent further loss of knowledge capital, and to bring more continuity to the research.

3.2. The integration and coordination of policy

Boundaries are inclined to blur, and old categories and concepts lose their meaning as a result of rapid changes in international political and economic relations. There is a growing interweaving of development and international issues in such areas as peace and security, the environment and the economy (political disintegration and conflicts, the degradation of the global environment, the population issue, the international stream of migrants, the globalization of technology and the economy, the rise of new economic and political centres of power worldwide, and the processes of transformation in Eastern Europe and the former Soviet Union).

Familiarity with these questions and their interrelationship is of increasing importance for the Netherlands itself, for the public debate, for trade and industry, for social organizations and politics, as well as for the country's future international policies. The relation between development and issues in the area of peace and security, transformation processes, the environment, the economy, and international trade and technology demands a broader, more integrated development policy, as advocated by the Minister for Development Cooperation in the policy document 'A world of dispute' (DGIS 1993).

Recommendation 5

In the light of the need for an integrated policy, the Council believes that research programming and research and technology policies should be better coordinated and geared more closely to policy areas such as development cooperation, the environment, agriculture, and energy.

This is reflected in the objective of the Council to reinforce the collaboration with other Sector Councils and where possible to come to joint initiatives which transcend the individual spheres of activity. In Chapter 4 the Council puts forward proposals for a joint, intersectoral approach to certain primary research themes.

3.3. The European dimension

European science and technology policy has recently found itself in the midst of a boom. The Third Framework Programme for Research and Technology (1990-1994) has a total budget of 6,600 MECU (approximately 13,500 million guilders), while for the programme line 'Life sciences and technologies for developing countries' (STD 3) the sum of 126 million ECU has been reserved³⁷.

It is expected that European research policy aimed at development will gain greatly in importance once European integration and the future expansion of the number of member states have taken shape.

³⁷ The STD 3 has two objectives: to reinforce the research capacity in developing countries by means of joint research, and to improve the capacity within the member states of the EU in areas of knowledge which are of importance for developing countries. There is also a clear striving to come to better collaboration within the EU. In practice, this means that a research proposal must be supported by at least two European partners, and at least one partner from a developing country.

A number of questions present themselves:

- What conditions can a European research policy for development be expected to meet?
- Can a European and a national research policy for development exist side by side, and even complement each other? And if so, what distribution of tasks is most suitable (subsidiary question)?
- How great is the danger that an increase in EU budgets for research will be accompanied by a simultaneous cut in the national budgets, causing an erosion of national authority and the loss of plurality, due to an increasing centralization of means and power in the hands of Eurocrats?

At present it is unclear whether the increasingly important role being played by 'Brussels' will in the long run be at the expense of research aimed at development. There are indications which point in this direction. The British government recently ordered cuts in the research expenditures of the Overseas Development Administration (ODA), to compensate for the higher contribution to European research programmes. The Dutch Minister of Finance has also observed that it is a case of communicating vessels, in the sense that an increase in the European research budget ought to be accompanied by a simultaneous cut in the national R&D budget. In the view of the RAWOO, such a standpoint would not reflect a wise policy. A strong national knowledge base is a pre-condition for participation in European research programmes.

The Council itself notes that this development is not only a threat, but also as an opportunity, an opportunity to improve the quality and relevance of Dutch research, so that it can continue to play a role of significance on a European and an international level. To achieve this goal, and to create a favourable point of departure, current national efforts should in any case be maintained; at the same time, a degree of consolidation and concentration of Dutch research potential in a limited number of primary research clusters will be necessary.

The Council has meanwhile included this subject in its programme, and will be issuing a report in the course of 1995.

3.4. Social and behavioural research

Within international organizations, as well as among researchers in developing countries, there is evidence of a growing interest in the socioeconomic and cultural dimensions of development, with special reference to social institutions, standards and values, behavioural patterns and gender relations.

There is increasing recognition for the fact that technical solutions alone are not sufficient, and can even be counterproductive if they are not accompanied by social and institutional changes.

In this regard, the Council stresses the importance of research into the changing role and position of women; at present such research is somewhat isolated and thus insufficiently integrated into broader research programmes.

It is to be hoped that the increasing interest in the social dimensions of development will bring about a shift in accent within Dutch research, which will allow the social sciences to take their rightful place alongside scientific and technical research. This shift should be reflected not only in the research programming and the allocation of research funds by the Dutch government, but should also make itself felt on a supranational level.

Recommendation 6

Were possible and desirable, an identifiable place should be reserved in current and proposed development-oriented research programmes for the social and behavioural sciences; such research should focus on the social dimensions of development problems, with special emphasis on gender-

specific aspects. To that end, the government departments involved or the research funding agencies will have to lay down clear policy guidelines for the benefit of the organizations charged with the execution of policy and the management of programmes.

Recommendation 7

In a European context, the Dutch government should advocate an expansion of the research and technology programme, with a view to developing a multidisciplinary programme which gives explicit attention to the socioeconomic, behavioural, and institutional aspects of development issues, as well as to the importance of a gender-specific approach.

Recommendation 8

The Dutch government should advocate a greater participation of the social and behavioural sciences in international research programmes. This should be done in a multilateral context, for example, within the framework of consultative groups (such as the CGIAR) and the United Nations, together with its specialized organizations (such as the WHO, FAO and Unesco).

3.5. Access to and dissemination of knowledge

But it is not only a question of initiating new research: it is equally - if not more - important to see that existing know-how is actually put to use. At present, the dissemination and utilization of research results for purposes of policy and practice still leaves much to be desired. There is still room for improvement.

Networks are an important instrument for the exchange of information between researchers and for the dissemination of know-how. Thanks to modern means of communication and research information systems, such know-how can be made accessible to researchers in the South, as recently stressed by Unesco in the 'World Science Report' (Unesco 1993). The Council, which underlines the importance of such accessibility, believes that there are possibilities in the Netherlands which have not yet been fully exploited. Networks can promote the flow of scientific knowledge between North and South, and among developing countries themselves, for instance, by drawing up 'state-of-the-art reports' on various areas of knowledge.

Recommendation 9

The Council is in favour of promoting the exchange of information and know-how between North and South, and among developing countries themselves, by actively supporting international networks and giving more attention to the possibilities for transferring information and know-how by means of modern information and communications systems.

4. Implementation of research priorities

In Chapter 2 the Council outlined the research needs which should be given priority on the international research agenda, in the light of the research capacity available in the Netherlands. Chapter 3 examined a number of developments in the research infrastructure of the Netherlands, with special reference to the question of whether Dutch research is prepared for the organizational and methodological challenges - for example, multi- or interdisciplinary research working groups and collaboration with users - which are inherent in the departure point of sustainable development.

The question which presents itself here is how the priority research themes can be anchored in the policies and activities of both the research funding agencies and the research organizations. Before making any pronouncements on this question, the Council briefly reviews the possibilities for influencing the content and direction of research in the light of social considerations, within the present framework of researching financing in the Netherlands. It then examines the extent to which the various thematic recommendations are consistent with, or can be adapted to, current and proposed research activities and/or programmes.

4.1. Targeting of research funds towards relevant issues

Central university funds for university research

For some time, both politicians and government have felt a desire to tailor university research to the needs of society. To that end, the Minister of OCW, who coordinates science policies, intends to earmark a portion of the central university funds for research keyed to the priorities of national science policy.

To that end, and within the framework of the strategic dialogue on the Higher Education and Research Plan (HOOP), the Minister has entered into agreements with the universities. A temporary advisory group (the Van den Kroonenberg Commission) was formed at the request of the Ministry of OCW to assess these agreements. In the opinion of this commission the universities do not have a clear view of the priorities within society. There is at present a lack of direction and articulation on the demand side, while the transparency of the supply side leaves much to be desired. However, in the view of the commission, no party is at present able to take upon itself the task of defining the demand. Therefore, the commission proposes a new organizational model for the process of steering (a portion of) the funds for university research.

The RAWOO underscores the departure point of the Van den Kroonenberg Commission that interested parties within society should be given a greater say in the directing and financing of scientific research. However, this departure point is already central to the responsibilities and activities of the Sector Councils, which were founded precisely in order to bridge the gap between the research world and society, and to bring about a dialogue between knowledge suppliers on the one hand, and knowledge users on the other. This is also reflected in the tripartite composition of the Sector Councils (researchers, government, and users). Sector Councils exist at present for such socially significant areas as the environment, agriculture, health, development cooperation, town and country planning, and marine research. Therefore, the Council believes that it is not necessary to introduce a wholly new organizational model, as the commission advises. It is sufficient to expand the functions of the existing Sector Councils in those areas where the social effects of strategic research need strengthening.

Recommendation 10

Within the framework of policy dialogue with the universities and research institutes, the Council urges the Ministers of OCW and LNV to draw up concrete agreements for the implementation of high-priority research themes and the organizational and methodological recommendations contained in the present advisory report.

National Research Council funds

The Netherlands Organization for Scientific Research (NWO) has extended its task; within the context of the long-term plan for 1995-1999 it intends to highlight its role in setting priorities and funding of scientific research. In looking not only at purely scientific criteria, but at relevance to society as well, the NWO is complying with the wishes of the Ministry of OCW, which would like to see a greater emphasis on the social impact of research, in the choice of subjects and execution, as well as in the policies and funding of that research. Thus the society-oriented approach plays a prominent role in the choice of subjects for new incentive programmes aimed at translating social issues into scientific programmes. In carrying out this task, the NWO can rely on the support of a committee of leading members of Dutch society to advise the Board.

In 1994, the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), which is part of the NWO, had some eight million guilders at its disposal (NWO 1994:147). It is WOTRO policy to aim for an equitable distribution of funds between support for individual projects and various forms of programmatic support³⁸. In line with general NWO policy, WOTRO will in future devote more attention to the social relevance of research, with respect to the choice of programme subjects, as well as the assessment of projects. The Council welcomes this development, but notes that a more pronounced orientation of WOTRO towards society must be accompanied by an increase in the influence of users when it comes to the realization and assessment of research priorities and the allocation of funds. To that end, new organizational forms and methods will have to be created. In this regard, the Council points to the Foundation for Technical Sciences (STW), also operating within the NWO, which many people feel has successfully enhanced the contribution of users in the assessment and distribution of resources for technical research.

Recommendation 11

The Council invites the NWO/WOTRO to integrate the research priorities, together with the organizational and methodological recommendations put forward in this advisory report, into the Foundation's policy and research programming.

To this effect, the RAWOO will consult with the Board of WOTRO and the NWO (together with other Sector Councils). It should also be noted that other areas of science within NWO, such as its Committee for Geo- and Biosphere (GB-BOA) and its Social Science Research Committee (GB-MaG), also stimulate research activities related to development issues, and may likewise be of importance for developing countries.

Commissioned and other research funds

In the past the Council has declared itself in favour of the stimulation of a limited number of long-term research programmes focusing on major problem areas in society. These would be set up and administered in close collaboration between parties in developing countries and in the Netherlands, and would be run by intermediary organizations at arms-length from the government. Depending on the area selected for special attention, the financing of such programmes would be the joint responsibility of the government departments most closely involved, while resources from central university funds and National Research Council funds could also be deployed. Linking funding flows in this 'programmatic' manner makes it possible to achieve a greater cohesion and coordination in the research area.

The Council is of the opinion that this model is a suitable instrument by which to give form and content to research collaboration with developing countries. It is eminently suited to a problem- and demand-oriented approach, based on the needs in developing countries, multi- and

³⁸ To date, two integrated research programmes have been initiated: 'Sustainable Development of the Coastal Zone in Tropical Areas' and 'Globalization and the Construction of Communal Identities'. There are plans to set up a third programme in the area of food and nutrition.

interdisciplinary cooperation, the participation of users, and a combination of research and capacity-building.

Meanwhile, the implementation of the policy document 'Research and Development' has resulted in the establishment of a number of long-term, multidisciplinary, location-specific research programmes in Vietnam, India/Kerala, Bangladesh, Mali, Uganda, Tanzania, Bolivia and Nicaragua. The initiative for direction and programming rests with the countries themselves. The orientation phase is aimed at initiating a dialogue between local researchers, the authorities, and the users of research results, with a view to articulating the research questions. At the request of the Minister for Development Cooperation, several members of the RAWOO are involved in this process as observers. The new research programmes set up by DGIS are capable of carrying out important innovations, primarily by bringing to light the questions and needs of knowledge users. The Council is following this process with interest, and in the course of 1995 will inform the minister of its initial findings.

In its commentary on the draft policy document 'Research and Development', the Council underlined its support for the demand-oriented approach of these new long-term research programmes. At the same time, it noted that this approach will be difficult to implement, precisely because it is novel. Indeed, it was the Council's view at the time that the programmes should be set up gradually, building upon the experience gained in the previous phases; it would then be possible to broaden and extend the programme to other locations, keeping in mind that this is, after all, a learning process. In view of the uncertainties and risks which accompany the new approach, the RAWOO recommends that all the emphasis should not be placed on a single line of action, but rather that a differentiated policy should be followed in which there is scope for other instruments and other modalities. In this connection, the Council has also spoken out in favour of innovative small-scale research, and strategic research programmes which focus on major issues of development. These latter programmes are generally centred on more than one country, are medium- to long-term, and are based on cooperation between partners in North and South.

Recommendation 12

The Council renews its plea for the creation of a limited number of long-term strategic research programmes focusing on important areas of attention related to development, set up and carried out in close cooperation between parties in developing countries and in the Netherlands, the management of which would rest with intermediary organizations at arms-length from the authorities.

The section below touches upon the question of deciding which research themes should initially be considered for further development and programming, with a view to the realization of the programmes which it advocates.

4.2. Organizational anchoring of the central research themes

A number of the central research themes will represent a continuation of current research, some of it embedded in broader programmes. In other cases, shifts in emphasis will be required in existing programmes, or new studies will have to be initiated within existing, proposed, or new programmatic frameworks.

Below, the Council deals with the organizational anchoring of the central research themes, and puts forward suggestions and proposals with respect to:

- the assimilation of new research into current or proposed research programmes;
- improvements to the organization of the research and the cooperation between research groups, notably in developing countries, for example, by encouraging and supporting networking;
- the specification and concretization of the content of priority research themes, where possible in collaboration with other

Sector Councils.

Appendix 3 contains a schematic overview of the organizational anchoring of the central research themes in national and international research frameworks and programmes.

Cluster 1 Society, behaviour and the environment

Theme 1: Patterns of production and consumption

At the request of the ministers of OCW and VROM, and on behalf of the ministers of LNV, V&W and EZ, the RMNO recently took the initiative for the programming of the social science research dealing with the environment.

Recommendation 13

The RAWOO stresses the importance of research into changing consumption patterns and consumer behaviour, and recommends that the research requirements and priorities be further mapped out. In consultation with the RMNO, the Council will consider the extent to which this research is compatible with the programming of social scientific environmental research in the Netherlands.

Theme 2: Environment and economy

Environmental and economic research can be assimilated into the proposed strategic research programme 'Environmental Economics', as elaborated by the RMNO at the request of various government departments involved (OCW, LNV, V&W, VROM and DGIS). There are clear areas of common ground between the research themes in the programme proposed by the RMNO and those of Theme 1. The results of the programming study 'The effects of alterations in the volume of trade and production on the economy, the environment and nature', carried out jointly by the sector councils NRL0, RMNO, and RAWOO, will be included in the above mentioned research programme. The RMNO has proposed that the sum of 12 million guilders be allocated for the implementation of the research programme 'Environmental Economics' over a period of six years (RMNO 1994).

The RAWOO considers it important that the proposed research programme 'Environmental Economics' devote special attention to the research collaboration with developing countries and that it be prepared to provide incentives for such collaboration. This could be done by earmarking a portion of the available programme funds for research projects which are prepared and executed in cooperation with developing countries, and directed at least in part towards knowledge-building and the institutional reinforcement of research on environmental economics and environmental policy in those countries.

Recommendation 14

The Council believes that future research activities in the fields of the environment, economy and development which are of importance for developing countries should be integrated into the proposed research programme Environmental Economics. In the view of the Council, it is appropriate that the Minister for Development Cooperation should support this programme by means of earmarked funds to help finance projects prepared and executed in collaboration with developing countries.

The Council points out that care must be taken to avoid an excessively one-sided environmental economics approach, at the expense of poverty-related issues and the interests of the population. As the Council noted in Section 1.2, such research is not intended to focus exclusively on the question of how the environment can be maintained or improved; the consequences for the poor must be taken into consideration. In other words, it is a question of integrating the environmental and the poverty perspectives.

Cluster 2 Development of human potential

Theme 3: Sickness and health

This theme is concerned partly with current research embedded in a number of national research networks and partly with research for which new lines must be set out.

The Council notes that, in comparison with biomedical studies, sociomedical research has received insufficient attention and is deserving of more emphasis in the future. The collaboration between the biomedical and the sociomedical research groups is still minimal, and will require reinforcement.

The programming study 'National Research Programme for Tropical Hygiene' has led to the formation of six national research networks, focusing on malaria, leprosy and tuberculosis, schistosomiasis, food and nutrition, primary health care, and AIDS. Although these networks contribute to a greater concentration of knowledge and expertise within the various areas of attention, too few of them have succeeded in integrating biomedical and sociomedical research. In the opinion of the Council, this is of crucial importance in improving the effectiveness of biomedical research and ensuring that research results are better keyed to the social context of the locality in question, and thus can be better utilized for the improvement of the public health of the community.

In this light, the Council believes that a gradual shift in emphasis is called for within health research. Improved integration and coordination of biomedical, epidemiological and sociomedical research is of primary importance here. This will entail more attention for the following themes:

- the functioning of health care systems;
- improvements in the intervention methods;
- the influence of environmental factors on health;
- reproductive health.

The substantive shifts and organizational innovations within health research recommended by the Council will have to be brought about via a process of reprogramming directed towards the formulation of a cohesive, multidisciplinary research programme. This will clearly require coordination with international programmes and initiatives, in particular those of the WHO, the EU/STD programme, and the Essential National Health Research (ENHR) initiative of the Commission on Health Research for Development.

Recommendation 15

With a view to the realization of a future research programme, the RAWOO advocates the development of an integrated approach to health research, with priority for the following themes: the functioning of health care systems (health systems research); improved intervention methods; the environment and health; and reproductive health. In 1995 the Council will take the initiative in this matter.

Theme 4: Empowerment of women

Since the seventies, the study of the role and position of women, a central theme within both Dutch and international development policy, has been institutionalized within the Dutch research system. A number of specialized research centres have been established whose work focuses on issues pertaining to women and development.

At present the identity and profile of the work carried out by those research groups which specialize in issues related to women and development leaves something to be desired. The research groups are limited in size, and their activities are spread over a large number of subjects. A great deal of applied, largely policy-oriented work is being done, as opposed to strategic, policy-innovating research. Moreover, the study of gender relations has not yet been sufficiently integrated into broader research programmes.

Those research groups which are active in the field of women and development could take better advantage of each other's expertise by working more closely together and directing their efforts towards a smaller number of multidisciplinary research themes. This is doubly important in the light of the at times limited scope and fragmentation of the research in certain sub-fields, and could greatly improve such aspects as cohesion and coordination.

Recommendation 16

The RAWOO believes that it is important to initiate an exploratory study on the possibilities for combining and streamlining Dutch research efforts in the field of women and development, including opportunities for integrating that research into broader research programmes. In 1995 the Council will carry out such an exploratory study.

Cluster 3 Sustainable management of the natural resources base**Theme 5: Sustainable agriculture**

This theme is closely bound up with current research pertaining to integrated crop protection and the nutrient cycle, the aim of which is to reduce the use of external inputs. This research is of particular importance for a more sustainable development of current high-external-input agriculture.

To date, insufficient attention has been given to research centring on the development and diversification of small-scale, low-external-input agriculture. This type of agriculture, which is of particular importance for small farmers in marginal areas with a low production potential, enjoys high priority from a development perspective. New studies must be initiated in this area that meet the needs of specific agro-ecological zones in developing countries, and are keyed to international activities such as those of the CGIAR and the FAO. Other points of special interest are the integration of research in agricultural engineering, the ecology, and the social sciences; the participation of farmers' organizations, NGOs and policy-makers in the research; the link between local (informal) and Western (formal) knowledge systems; and the training of local researchers.

The necessary substantive, organizational and methodological innovations in agricultural research demand a cohesive, programmatic approach, one which makes it possible to stimulate new research lines and new approaches.

The NRLO recently published a report on development-oriented agricultural research in the Netherlands, which can be used in the further elaboration of the theme of sustainable agricultural production systems in the developing world (NRLO 1993).

Recommendation 17

The RAWOO recommends that both the demand for research and the available Dutch research capacity in the field of sustainable agriculture be mapped out, in order to establish how the various research lines and approaches outlined by the Council can best be elaborated. In consultation with the NRLO, the Council will take the initiative in this matter.

Theme 6: Use and management of renewable natural resources

The broad terrain of renewable natural resources is a major centre of gravity within the body of Dutch research efforts. In view of the existing supply and demand in the field of resource management, the Council concludes that a great many research activities are already taking place in or from the Netherlands which are in line with national and international priorities. Dutch research efforts, the volume of which is quite considerable, are concentrated largely in national programmes and are well-anchored internationally. Activities focus on the themes of sustainable land use; land and water; and the management of tropical forests (Tropical Forest Programme). However, the problems of water scarcity and the management of freshwater reserves are rapidly gaining in importance, and a closer examination of research questions and needs is in order. In this research area, the Netherlands has considerable know-how and expertise, which could be deployed in a more concentrated and cohesive manner.

Recommendation 18

The RAWOO considers it important to map out research needs in the area of integrated water management and the research capacity available in the Netherlands. In collaboration with the NRLO and the RMNO, the Council will examine the possibilities for a joint initiative to work out this theme.

Theme 7: Climate change and the management of coastal areas

This theme is related to current research which is well anchored in various

national and international programmes. The Dutch contribution to the international 'global change' research focuses on changes in the global climate (National Research Programme on Global Air Pollution and Climate Change, NOP 2), interactions between surface area and the world's oceans, and the consequences of a rise in the sea level for the management of coastal areas (Land-Ocean Interactions in the Coastal Zone, LOICZ Programme). The activities are embedded in various international programmes, such as the WCRP, the IGBP, and the START initiative. In addition, NWO and WOTRO have taken the initiative in setting up an integrated research programme 'Sustainable Development of the Coastal Zone in Tropical Areas', which is financed in part by DGIS. This programme focuses on multidisciplinary collaboration between researchers in the exact sciences, the arts, and the social sciences, and is directed primarily towards the establishment of an international network for coastal zone research in Southeast Asia. The WOTRO programme is closely coordinated with the international IGBP programmes LOICZ and START.

The Council considers it important to strengthen the role of developing countries in the programming and execution of global change research, and to see that these countries also have access to the results of that research. The formation and support of regional research and training centres in developing countries, the so-called START initiative, is of particular importance here.

The RAWOO recommends that developing countries be more closely involved in the programming and execution of climate research, by actively supporting the START initiative and giving more attention to location-specific, policy-oriented research into the regional and local consequences of global change for the management of coastal zones.

Recommendation 19

In the view of the Council, it is important to reinforce the role of developing countries in the programming and execution of global change research by enabling researchers from these countries to take part in national and international programmes. The design and support of regional research and training centres in developing countries, the so-called START initiative, is also of great importance and could be actively stimulated by the Netherlands.

Theme 8: Biodiversity

This is a theme for which new research lines will have to be set out in the years to come. The Council notes that various bodies have taken the initiative in working out this theme. This has resulted in the Strategic Policy Plan on Biodiversity, which is now in preparation at interdepartmental level, and the NWO priority programme 'Biodiversity of Disturbed Ecosystems', which was recently approved by the NWO Board. Furthermore, at the request of the Minister of VROM, the RMNO is presently carrying out an exploratory study intended to underpin the policy to be adopted by this ministry on the issue of biodiversity.

Recommendation 20

In the opinion of the Council, future research planning is best served by a joint approach on the part of the Sector Councils most closely involved, i.e., the NRLO, the RMNO and the RAWOO. The Council will bring up the subject in the Coordinating Committee of the Sector Councils (COS) and, on the basis of these consultations, consider the possibility of a joint initiative to work out the theme of biodiversity.

It will also be necessary to review the opportunities for integrating new research into existing national programmes which have areas in common with the issue of biodiversity, such as the Tropenbos (Tropical Forests) Programme. Furthermore, biodiversity is typically a theme which must be keyed to, and coordinated with, international programmes.

Cluster 4 Technology, small-scale enterprises and employment

Theme 9: Environmental technology

In the years to come the emphasis must be on cooperation, with a view to

the generation of know-how and the institutional reinforcement of technical capacity and infrastructure in developing countries. The latter will then be in a position to assess technical know-how, develop technologies, and adapt them to local needs and socioeconomic and cultural circumstances. From a standpoint of environmental return, priority must be given to collaboration with emerging industrial countries in Asia and Latin America.

Recommendation 21

The Council favours a concentration of environmental/technical cooperation in the emerging industrial nations of Asia and Latin America, which are now experiencing a period of rapid economic and industrial growth. It stands to reason that not only DGIS, but also the Ministries of VROM and EZ will be involved in elaborating and giving shape to this cooperation.

Theme 10: Small-scale enterprises and employment

This theme is closely related to current research, for which, however, a cohesive organizational framework has yet to be found. The problems of small and medium-sized enterprises, the informal sector, and rural industrialization form a major centre of gravity within Dutch development research. The focus is on research in the social sciences and, to a lesser extent, technical research.

Research activities are often of an ad hoc, policy-oriented nature, which means that they are insufficiently anchored within broader, multidisciplinary research frameworks and international networks. The role of technical innovation in relation to the development of small and medium-sized enterprises deserves more attention. Social science researchers active in this area should work more closely with technologists and environmentalists.

In the meantime, DGIS has undertaken the preparation of an international research programme centring on small-scale enterprises and employment. This programme will elaborate upon the policy document 'Research and Development', in which policy initiatives in this particular area of attention were announced. The DGIS programme is directed towards the realization of three subprogrammes, or rather regional networks, in sub-Saharan Africa (Southern, West and East Africa).

Recommendation 22

The Council believes that there is room for improvement in the organization of Dutch research on small-scale enterprises and employment, and invites the researchers involved to create a broad, multidisciplinary network, consisting of technologists, environmentalists and researchers in the social sciences, which can serve as a central clearing house and help to maintain contacts with Southern and international networks.

A more intensive exchange of know-how and information can ultimately lead to closer cooperation and a higher profile for Dutch research within a limited number of multidisciplinary centres of gravity.

Cluster 5 Governance and development

In the Netherlands current research on many fronts is closely related to the issues covered by the term 'governance', even though no programmatic framework is present. However, public administration and political science research, which centres on the institutional framework for development, is as yet quite modest in size. The role of the state and government interventions, by contrast, is a major area of attention within many research projects. In the years to come important new challenges will present themselves in the area of international comparative research, no doubt including the transformation processes taking place in Eastern and Central Europe and the former Soviet Union. It is important to see that future research is keyed to current programmes such as the NWO priority programme 'Transformation Processes in Eastern Europe', as well as to international research, for example, that being done within the framework of the European Association of Development Research and Training Institutes (EADI).

In addition, issues of development, conflict and security represent a major

new research area which will also require attention. The Council has noted with interest the initiative of DGIS and the Clingendael Institute for International Relations to draw up an agenda for this research area.

Recommendation 23

With a view to the realization of one or more future research programmes, the RAWOO believes that the broad field of 'governance and development' should be the object of a programming study, with special attention for the following three research lines: the relationship between the state and society from a comparative perspective; the problem of development, conflict, and security; and the influence which the international political and economic situation has on development. The Council will take the initiative in setting up such a study.

Appendix 1

International agendas for research

The following is an overview of international research agendas which are of importance for developing countries. No effort has been made to provide an exhaustive list of research agendas set up by international and multilateral organizations. Rather this overview is intended to provide insight into research needs established at least in part by researchers and policy-makers from the South.

Commission on Developing Countries and Global Change

In 1992 the Commission on Developing Countries and Global Change, consisting of social science researchers from developing countries, published its final report. This document, entitled 'For Earth's Sake', surveys the most important social science issues which are related to global environmental issues, viewed from the perspective of the countries of the South. The recommendations of the Commission are based on broad consultation between the researchers involved and representatives of NGOs in the countries and regions of origin of the members of the Commission.

The Commission is of the opinion that up to now the South has had very little influence on the global environment agenda, which is dominated by the concerns and preoccupations of the North, such as the greenhouse effect and issues related to biodiversity. These reflect the concern of the North at the decline of the natural environment and the consequences for future generations (intergenerational equity).

According to the Commission, the international agendas ignore the South's most pressing environmental problems: the degradation and exhaustion of the biomass potential, on which the majority of the population is still largely dependent; and the pollution and poisoning of the environment as a result of modern agricultural methods and industrialization, with the attending consequences for public health. The Commission believes that the North has consistently emphasized the biological and physical aspects of changes in the global environment, while giving relatively little attention to the social dimensions of these changes. The issue of development and the environment cannot be divorced from issues of global poverty and inequality. The issue is not so much the fate of future generations, as the insecure existence of present generations (intra-generational equity).

The Commission concludes that future research must focus on the following social issues (Commission on Developing Countries and Global Change 1992:106):

- a. *Poverty, affluence, and needs:* inequality; poverty; affluence and overdevelopment; basic needs issues; population and resource use.
- b. *Economic order and development patterns:* international economic realm; national development models and styles; market mechanisms and the environment; economic-ecological valuation and development theory.
- c. *Political order:* international political order; role of the state; democratization, participation, and accountability; gender; legal and regulatory systems; conflict over natural resources;
- d. *Knowledge systems and technology:* traditional knowledge and technical systems; modern science and technical systems, appropriate technologies.
- e. *Processes of cultural change:* cultural diversity; homogenization of cultures; values and ethical systems; education and media.

The Commission advocates a multi/interdisciplinary approach to environmental and development problems. The physical environmental problems which have priority in developing countries - degradation and exhaustion of

natural resources, problems related to pollution and dangerous waste, and natural disasters - should be examined in their relation to the social issues outlined above.

South Commission

The report of the South Commission, 'The Challenge to the South' (1990), leaves no doubt about the fact that economic growth is a necessary condition for development and the fight against poverty in the South. At the same time, it acknowledges that the ecological basis must be maintained with a view to future development (South Commission 1990:280). In the concluding chapter, 'The South on the threshold of the 21st century', the commission sketches the most important challenges which the South will have to meet in the next century and the priorities which flow from them: promoting economic growth, with as major aim the fight to alleviate poverty and the task of providing the mass of the population with the basic requirements of life; promoting the effectiveness of the development process; bridging the knowledge gap; protecting the natural environment; developing an effective population policy; and reinforcing the role of the South in the management of the international political and economic system (South Commission 1990:271-287).

ASCEND conference

The International Conference on an Agenda of Science for Environment and Development into the 21st Century (ASCEND 21), was held in November 1991 in Vienna, under the auspices of the International Council of Scientific Unions (ICSU) and in cooperation with the Third World Academy of Sciences (TWAS). About half of the participants at this conference came from developing countries in Africa, the Arab region, Asia, and Central and South America. The participants all felt that the agenda of the scientific community for the 21st century should give priority to the following problem areas: the growth of the world population and the per capita consumption of resources; the exhaustion of agricultural land; inequality and poverty; climate changes; loss of biological diversity; industrialization and waste; lack of water; and energy consumption.

The conference resulted in a number of more specific recommendations with respect to research. The closing statement (ASCEND 21 1991) makes mention of the following points:

- intensified research into natural and anthropogenic forces and their interrelationships, including the carrying capacity of the Earth and ways to slow population growth and reduce over-consumption;
- strengthened support for international global environment research and observation of the total Earth System;
- research and studies at the local and regional scale on the hydrological cycle; impacts of climatic change; coastal zones; loss of biodiversity; vulnerability of fragile ecosystems; impacts of changing land use, of waste and of human attitudes and behaviour;
- research on transition to a more efficient energy supply and use of materials and natural resources;
- special efforts in education and in building up of scientific institutions as well as involvement of a wide segment of the population in environment and development problem-solving;
- regular appraisals of the most urgent problems of environment and development and communication with policy-makers, the media and the public;
- establishment of a forum to link scientists and development agencies along with a strengthened partnership with organizations charged with addressing problems of environment and development;
- a wide review of environmental ethics.

The conference statement also pointed to the need for more integration of the natural sciences and the social sciences. The results and recommendations of ASCEND 21 have been presented to the UNCED conference and have found a place in the chapter on science and sustainable development of Agenda 21.

UNCED conference

The United Nations Conference on Environment and Development (UNCED), held in June 1992 in Rio de Janeiro, resulted in a number of important documents which provide guidelines for future policy development. The Declaration of Rio de Janeiro on environment and development (UNCED 1992) consists of 27 principles, which together form the basis for the formulation of new policy and the execution of existing policy; they also provide the foundation for Agenda 21, the action programme for the next century, in which a large number of policy areas are discussed.

Agenda 21 is an action programme and not a research agenda. That does not alter the fact that within a large number of policy areas described in Agenda 21 attention is given to specific research needs and the role of science and technology in attaining the objectives set for these areas.

The central policy issues can be divided into two broad themes: (i) social and economic dimensions and (ii) conservation and management of resources for development.

Social and economic dimensions:

- International cooperation to accelerate sustainable in developing countries and related domestic policies;
- Combating poverty;
- Changing consumption patterns;
- Demographic dynamics and sustainability;
- Protecting and promoting human health conditions;
- Promoting sustainable human settlement development;
- Integrating environment and development in decision-making.

Conservation and management of resources for development:

- Protection of the atmosphere;
- Integrated approach to the planning and management of land resources;
- Combating deforestation
- Managing fragile ecosystems: combating desertification and drought;
- Managing fragile ecosystems: sustainable mountain development;
- Promoting sustainable agriculture and rural development;
- Conservation of biological diversity;
- Environmentally sound management of biotechnology;
- Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources;
- Protection of the quality and supply of fresh water resources: application of integrated approaches to the development, management and use of water resources;
- Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products.

World Health Organization

The World Health Organization (WHO) promotes health research via a number of specialized programmes, and research agendas are drawn up within this general framework. The following documents/programmes provide a picture of the research priorities of the WHO. No effort has been made to draw up an exhaustive survey, and other sources have also been employed (DGIS 1994a).

Reproductive health

Human reproduction and reproductive health are two of the areas in which the WHO is active (see WHO 1991 and WHO 1992c). The Human Reproduction Programme has as its aims: to promote, coordinate, finance, execute and evaluate research into human reproduction, with special emphasis on research into methods of birth control which are both safe (healthwise) and effective (social context).

Tropical disease

The aim of the Special Programme for Research and Training in Tropical Diseases (TDR) is to combat and prevent the six most common tropical diseases (malaria, bilharzia, filariasis, trypanosomiasis, leishmaniasis

and leprosy) by developing methods of prevention, diagnosis and treatment which are tailored to developing countries, and by strengthening the local research capacity. Within the programme every effort is made to coordinate fundamental, strategic, and operational research, and there is cooperation between researchers from different disciplinary backgrounds (see WHO 1991a).

Health systems

The Health Systems Research Programme of the WHO (see WHO 1992), in collaboration with the Royal Tropical Institute, is engaged in the development and distribution of methodology for carrying out research into health systems. Such research is of particular importance because in the past it has proved extremely difficult to ensure that innovations and interventions find their way to the groups for which they are intended: 'One of the reasons, apart from scarcity of resources, is that health delivery systems in most countries have been unable to absorb these technologies and to bring them within the reach of the majority of the population. The crux of the problem and the challenge for the future lie in the adaptation of the knowledge and technologies already available so as to make them more relevant, appropriate and applicable to the needs of the community and the health care system into which they are to be integrated.' This means a shift in the centre of gravity within health research from searching for new interventions to applying existing methods and making them affordable and manageable (see for medication research and operational research WHO 1992d and WHO 1993).

AIDS

As regards AIDS research in developing countries, the following priorities have been identified: epidemiological research; research into AIDS among women; and behavioural science research (see WHO 1992b).

Environment and health

In its report 'Our Planet, our Health', the WHO Commission on Health and Environment (1992) stresses the importance of research in the area of the environment, health and development. It is clear that the burden of concern for a healthy environment lies largely with the national authorities, but they must have at their disposal the necessary instruments: the identification of environmental and health problems, the causes of such problems and the interrelationship between them; a knowledge of actions which are necessary in order to prevent or reduce health risks; and methods of increasing public awareness and knowledge concerning these matters. This represents a wide-ranging agenda of research priorities; in most developing countries, however, such an agenda is either insufficient or totally lacking. The WHO Commission on Health and Environment recommends that the national capacity should be built up by means of collaboration between governments, international organizations, and public and private bodies. It is a question of (i) strengthening research capacity by means of staff training and the reinforcement of major institutes, and (ii) carrying out cost/benefit analyses of various strategies and actions designed to improve health and the environment. The WHO should play a stimulating and coordinating role in setting up and supporting such research. This includes encouraging biomedical researchers to take part in multidisciplinary research together with environmental experts and social scientists. The report gives a number of suggestions for research priorities in the area of health and the environment: 'Development is recognized as a key issue in the improvement of human health. However, the precise interaction between development and health remains poorly understood; most of the conventional indicators used to measure development have at best only an indirect relationship to health. There is a need for development indicators at all levels that ensure that the state of health of the people is included in the development statistics and make easier the incorporation of health concerns in development plans. An important subject of research should be exploration of significant and, as far as possible, causal relationships between development factors and health indicators, to quantify favourable links and detect possible adverse effects.' (WHO 1992a:8). The following research needs were mentioned:

- 'Research on how to harmonize of multiple goals;
- Methodologies to assess the effectiveness of various environmental health policies;

- The discovery of more effective means of controlling diseases spread by biological vectors;
- A better definition and understanding of the complex functions of various ecosystems, and baseline information which makes it possible to assess potential pollution;
- A better understanding of the deficiencies in our ability to identify and measure health risks;
- An assessment of the effect of human-induced environmental changes;
- A quantification of the long-term effects of specific pollutants;
- Knowledge of technical processes that result in the formation and/or discharge of toxic pollutants;
- Low-cost methods for purifying water, monitoring water quality, and developing food preservation and storage methods appropriate to conditions in developing countries' (WHO 1992a: 265-266).

World Development Report 1993

The World Development Report 1993, 'Investing in Health', published by the World Bank, provides suggestions for research priorities. Its points of departure are 'national research priorities': 'Governments have a role in supporting the research necessary for understanding specific local health problems and for guiding public policymaking and program design. This 'essential national health research', which is also undertaken by the private sector, examines health strategy in more depth than is done with day-to-day budgetary and management information. The international community can help both in gathering data for international comparisons and in assisting local institutions to build up capacity in epidemiology, health economics, health policy, and management. Research priorities in this area include cost-effectiveness analysis of health interventions, evaluations of medical practice and of variations in practice, and studies of drug utilization, equity, consumer satisfaction, and women's health' (World Bank 1993:150). The World Bank asks itself the question 'Where is extra research really likely to pay off?' On the basis of the parameter 'DALY' (disability-adjusted life year, a measure which combines the healthy years lost as a result of premature death with those lost as a result of handicaps), the World Bank opts for research in the area of prevention, diagnosis and case management for the six diseases which represent the largest contribution to the global burden of disease (see Table 1).

Commission on Health Research for Development

In its report 'Health Research: Essential Link to Equity in Development', the Commission on Health Research for Development (1990) surveys the challenges of the coming years in the area of health research in developing countries. On the basis of a worldwide analysis of research priorities, the Commission concludes that it is extremely difficult to establish priorities for health research. One possible method would be to set off research investment against mortality data; however, mortality figures are not the only or even the most important point of departure in ordering the priorities. Morbidity is another possible point of departure, while the chronic consequences of disease and quality of life could also be used in establishing priorities, although the latter would be extremely difficult to standardize. Research carried out by the Commission shows that development-oriented health research reflects the power relations which exist within research institutes in the North: the dominance of clinical, biomedical and laboratory research, and the paucity of research aimed at health information systems, field epidemiology, demographics, the behavioural sciences, economics and management. What is above all lacking is local research, adapted to the conditions there, that can best be stimulated within the framework of capacity-building.

At the initiative of the Commission, a process has been initiated in a number of countries whereby researchers, policy makers and research users together draw up an agenda for future research, the Essential National Health Research (ENHR) initiative. In early 1993 some 18 countries were engaged in devising such a research agenda. In order to further stimulate the ENHR initiative, the Council on Health Research for Development (COHRED) has been established. By 1993, a total of 34 countries and

organizations had affiliated themselves with this Geneva-based NGO, which is part of the UNDP. Of the 17 members on the Board, 12 are from developing countries.

IDRC

In the 'Corporate Program Framework 3/93' of the International Development Research Centre (IDRC), suggestions are put forward for 'health and the environment', as well as for health science programmes. There is a growing need for research in the area of health and the environment, in particular with regard to prediction, impact assessment, health promotion, and prevention. Such research will promote a better understanding of health-related environmental factors and the nature of the interaction between communities, the environment, and the social and economic context, while developing environmentally sound and sustainable health approaches.

INSTRAW

The United Nations International Research Institute for the Advancement of Women (INSTRAW) concentrates its research and training activities on three themes:

1. *Empowerment of women*: poverty alleviation and access of women to goods and services; organization and mobilization of women; participation of women in decision making and political processes at all levels; gender analysis and training; potential effects of changes in communication policies on equitable and sustainable development schemes.
2. *Statistics and indicators on women*: improving statistics and indicators on women; methods for valuing women's contribution to the economy.
3. *Women, environment and sustainable development*: the role of women in the environment, and the economic, social and political dimensions of the issues; women's status and the sustainability of development; enhancing women's role in environmentally sound and sustainable development.

In this area INSTRAW is increasingly collaborating with the United Nations Development Fund for Women (UNIFEM).

Appendix 2

Overview of the Dutch research capacity

In preparation for the present advisory report, the RAWOO carried out four preliminary studies in which the demand for research, as reflected in international and Southern agendas for policy and research, was set off against the supply of knowledge and expertise in the Netherlands. This weighing of supply against demand was carried out for the areas of agriculture, health care, the environment, and socioeconomic issues.

This appendix consists of a survey of Dutch research in these four areas. The objective was to sketch the outlines of the Dutch research landscape and the know-how which was available. In addition, the following aspects were examined: the volume of personnel involved in research, the themes under study, and the research organizations, i.e., the universities and institutes which execute the research.

As regards the volume of personnel involved in Dutch research, the following points are of importance:

- It has proved somewhat difficult to gain insight into the volume of research going on. To some extent, this is a problem of definition: which research in the various fields is development-oriented and which is not? Any division is invariably somewhat arbitrary. In addition, the task of collecting the necessary material proved to be laborious and time-consuming. Thus it should be noted that the fte figures quoted here are no more than estimates.
- There is a certain measure of overlap between the various terrains, especially between environmental and agricultural research, and between socioeconomic research and the other three areas. This means that a portion of the fte information has been counted twice³⁹.
- When the term 'research capacity' is used, it refers to the size of the staff in terms of full-time equivalent research positions, and not to the quality of the research being carried out.

1. Environmental research

To obtain an impression of Dutch research activities and capacity in the area of the environment and development, in particular in relation to the research needs and priorities on international agendas, the Council had a survey drawn up by the Study Centre for Technology and Policy of the TNO (TNO/STB 1993), from which the following picture emerged.

There are 48 research groups carrying out research within the special areas of attention encompassed by 'the environment and development'. Total research efforts in terms of scientific personnel are estimated at some 325 fte; 120 of these are at universities (UT, TUD, TUE, UvA, VUA, RUG, RUL, RUU, LUW, EUR, KUN; 33 research groups) and 205 in non-university research institutes (ECN, TNO, WL, RIZA, RIVM, IHE, ILRI, ITC, KIT, NEI, IHS, and NIDI).

The question of which research activities are and which are not part of the

³⁹ For this reason, the information presented in this appendix cannot be used to establish a general trend in the volume of research capacity. A previous study by the RAWOO (RAWOO 1990), which included a survey of the volume and thematic orientation of Dutch development research, estimated the total research capacity within universities and research institutes at 646 fte. This overview, which was based on scientific reports, displayed no double counts.

area of attention encompassed by 'the environment and development' is not easy to answer, particularly in the case of non-university research. The figures should be interpreted with the greatest care, as they are in effect no more than a rough indication.

Table 1 gives an overview of the deployment of scientific personnel (in fte's) over the various policy themes.

Research is highly fragmented and scattered over a large number of small research units. At the same time, over half (52%) of the research groups take part in research programmes, including the national programme 'Global air pollution and climate changes' (NOP), the national 'Remote sensing' programme, and the research programme 'Tropical Forests'. In all these programmes the emphasis is on scientific and technological research. It would appear that social science and economic research is less firmly anchored in broader programmes. Just over one-third (35%) of the research groups participate in international research programmes.

The financing of research is highly dependent on project and programme funds from outside financiers. In university research these sources represent 40% of funding, in non-university research about 60%. The share of the national research council funds is limited (some 12% of university research, and 10% of non-university research). Strategic/ applied research receives the most attention (55% of university research and 47% of non-university research). Over half (60%) of the research groups focus on specific countries; in many cases these are countries which enjoy priority within Dutch development policy and belong to the category 'low-income countries'. Very little attention is directed toward the category 'average-income countries'.

University research is still largely monodisciplinary. A multi- or interdisciplinary approach to environmental and development problems, such as a linking of economic and social science research to scientific and technical research, is still in the very early stages.

As noted above, determining the volume of research in the area of 'the environment and development' which is of importance for developing countries is a difficult and to some degree arbitrary business, because this research cannot be delineated as a separate category. It would be true to say that the research into global environmental problems and a portion of the research into environmental problems in the wealthy countries may also be of importance for the developing world. The respondents in the survey carried out by TNO/STB are apparently wrestling with the same problem, and it is not surprising that certain research groups take it for granted that all the research they do - regardless of whether it is aimed at specific problems in or related to developing countries - is of potential importance for those countries, and thus in principle may be seen as available capacity. This means that it is becoming steadily more difficult to distinguish between research that is and research that is not of importance for developing countries.

Against this background, it may be interesting to look at the total Dutch capacity in the area of nature and the environment. The RMNO recently carried out a survey of this capacity, for purposes of an advisory report on the infrastructure of nature and environmental research to be published by the Council (TNO/STB 1992). The total deployment of scientific and other personnel for the benefit of nature and environmental research in the Netherlands is estimated at 4312 fte's. Roughly 40% of such research is paid for by core-funding, 10% by programme subsidies and 40% by commissioned research. The study presents an overview of the distribution of research efforts over a number of major policy themes. What is striking is the fact that the research themes related to nature receive much less attention than the environmental themes, and that of the latter category, it is above all the themes 'diffusion of substances which place a burden on the environment', 'eutrophication' and 'acidification' which stand out, with 11%, 9% and 8% of the total number of fte's respectively (TNO/STB 1992: 10). The distribution of research capacity according to the category of environmental pollution shows that research into soil pollution and water pollution receives the most attention, with some 25% each of the

total capacity. These are followed closely by research into air pollution, with 20% of the total capacity (TNO/STB 1992: 12). It is reasonable to assume that at least a portion of this research capacity may be of importance for developing countries, and could be deployed for their benefit, even though at the moment this capacity may not be directed specifically toward those countries.

2. Agricultural research

In this area, too, it proved difficult to obtain a broad view of the present research capacity which could be of importance for the developing countries. One of the reasons is that much of the more technically oriented strategic research carried out for the benefit of Dutch research demand, could be important for developing countries. This does not mean that these researchers are actually involved in development-oriented research, but rather that they could be deployed for that purpose if the need and the resources were there.

The figures presented below are not complete: they are based on a survey of the available capacity in the institutes of the Department of Agricultural Research (DLO), the Agricultural University Wageningen (LUW), and the Faculty of Veterinary Medicine of Utrecht University, as well as the ITC and the ILRI⁴⁰.

Table 2 is an overview of total Dutch capacity in the area of agricultural research, including that directed towards issues in developing countries. It will be clear that the greater part of the available capacity is centred in the research areas soil, water and the environment; animal and plant production; and biotechnology and technology. Only a small portion of the available capacity is devoted to the study of the social and economic aspects of agricultural development.

At the Agricultural University Wageningen (LUW) the focus is on biotechnology and technology, followed by plant production, and soil, water and the environment. There is a relatively small capacity for research into animal production, although in the case of veterinary medicine considerable potential capacity is present in the veterinary faculty. A considerable amount of research is directed toward the social and economic aspects of agriculture, in contrast to the DLO, where the centre of gravity lies in the areas of soil, water environment, and plant production, followed by animal production.

Table 3 indicates the research capacity which was deployed for research specifically aimed at developing countries during the period 1991-1992. The LUW accounts for over 50% of the capacity; the accent is on social aspects, followed by plant production, and soil, water and the environment. At the DLO, some 30% of research capacity is devoted primarily to plant production and soil, water and environment. The veterinary faculty (see Table 2) devotes only a small portion of its total capacity to specific development-oriented research.

In addition to the actual research capacity, there is considerable capacity that can be deployed to provide technical support in setting up and managing research institutes, and designing and executing research programmes and projects. There is a real need for such assistance among the national and subnational research institutes in many Third World countries. This capacity is located in the NRLQ, the DWT, and the staff of the DLO institutes. Also at the Agricultural University Wageningen there is experience in drawing up and executing research programmes.

In addition to the institutions included in the survey, there are many

⁴⁰ Missing is the IHE, which does research in the area of soil, soil use, water, and the environment (about 30 fte's). The data of the IHE are included in the survey of environmental research. A portion of the fte's of ITC and ILRI have been counted twice, as they are included under both agricultural research and environmental research.

others with research capacity which is of special importance for developing countries, including the biological faculties, the Royal Tropical Institute, consultancy bureaus, agricultural testing stations such as Barneveld, and institutes such as the International Soil Reference and Information Centre (ISRIC).

3. Socioeconomic research

At the initiative of the RAWOO, the basic material for this overview was collected by the CIRAN and the SWIDOC⁴¹. The CIRAN research (Hoedt et al. 1993) focuses on staff volume and the theme-oriented nature of Dutch research directed towards development, while the SWIDOC study (Van de Ven 1993) gives a broad outline of recent and current doctoral research in this area.

The CIRAN study estimates the total volume of staff involved in research in the area of development studies in 1991 at just over 400 man-years. The universities account for three-quarters of these efforts, the institutes one-quarter. Three universities - the RUL, the VUA and the UvA - stand out, with a respective share of 16%, 15%, and 14% of total research time. Among the institutes, the ISS and the KIT account for a considerable share of total research efforts, with 8% and 6% respectively.

Table 4 shows the distribution of the total research efforts over six thematic clusters. The clusters 'Agriculture, rural development and environment' and 'Institutional framework and culture' each have a 20% share of the total research capacity. 'Industrialization, technology and urban development', 'Human resources development' and 'Economic and social policies' follow close behind, with 17% each. The cluster 'International dimensions', with 9%, receives considerably less attention.

Where the universities are concerned, the thematic profile of most of the individual institutions displays a highly varied pattern, in which all the thematic clusters are represented. The same is true of the institutes, though to a lesser degree; only the ISS is active on all fronts, while at the other institutes there are one or two thematic centres of gravity. This is due to the fact that the institutes - unlike the universities - often have a more clearly defined task. The fragmentation of research activities over a large number of research units is striking: Dutch research capacity is spread over 18 institutions (10 universities and 8 institutes). This calls up the image of a fragmented research landscape consisting of a great many plots of varying sizes with very little apparent cohesion between them.

The SWIDOC study was concerned with recent and current doctoral research in the area of development studies between 1988 and September 1993. A total of 578 doctoral studies were identified; 30% of these culminated in a dissertation, while 70% have not yet been completed.

Doctoral research has been classified by means of six main headings or areas of attention (the classification employed by the CIRAN). These headings make use of both primary and secondary descriptors, on the assumption that in many cases research programmes address one or more subthemes, alongside the main theme. Table 5 shows the distribution of the doctoral projects over the various main categories, on the basis of one primary descriptor. Over a third of the projects (34.8%) are in the main category 'Institutional framework and culture', while 'Agriculture, rural development and environment' comes second with 104 projects (18%). The categories 'Industrialization, technology and urban development', 'Human resources development' and 'Economic and social policies' are in the middle group, making a modest contribution of 67 (11.6%), 80 (13.8%), and 90 (15.6%) projects respectively. Bringing up the rear is the category

⁴¹ Both the CIRAN and the SWIDOC have at their disposal data pertaining to current research and research institutes in the area of socioeconomic development studies. In classifying projects and programmes, both organizations make use of the macrothesaurus of the OECD.

'International dimensions', with 36 projects (6.2%).

The combination of primary and secondary descriptors (resulting in a total of 1,419 descriptors) did not lead to any appreciable changes in the thematic distribution; the relative relationship between the main categories has remained virtually the same.

If we compare the data on the distribution of total research capacity over the thematic areas of attention (Table 4) with the findings on doctoral research referred to above, then it appears that, despite a degree of similarity, there are also marked differences. The main difference is the large share of the cluster 'Institutional framework and culture' in doctoral research in comparison with the research capacity for that same theme: 34.8% as against 20%. Young researchers, by contrast, appear to have less interest in the theme 'Industrialization, technology and urban development': 11.6% as against 17%.

Institutional framework and culture

The large share of the cluster 'Institutional framework and culture' in the entire body of research activities (81 fte's), in particular with respect to doctoral research (201 projects), is surprising, but understandable: a major portion of cultural-anthropological and sociological research directed towards processes of sociocultural change falls under this heading. This research has traditionally occupied a prominent position within the entire body of non-Western social science studies in the Netherlands, not least within the national research council funds. Public administration and political science research focusing on the institutional framework for development (or, in more modern parlance, the issue of 'governance'), which is also included in this cluster, is of modest proportions: 22 fte's and 39 doctoral studies⁴².

Agriculture, rural development and the environment

To a degree, the high score obtained by the cluster 'Agriculture, rural development and the environment' (over 80 fte's) is also understandable. The VUA, the KIT and the LUW have the greatest share of the research within this cluster, with 19%, 15%, and 13% respectively. The overarching theme of rural development, traditionally one of the pillars of Dutch and international development policy, would appear to be well anchored within Dutch research efforts⁴³. One of the major accents in this research is on the theme 'food security', which since the mid-eighties has attracted a great deal of attention. There are two research programmes in which food production is dealt with explicitly: the programme 'Sécurité alimentaire durable', a cooperative involving Dutch and West African researchers, and the programme 'Sustainable land use and food supply', a cooperative venture involving a number of agricultural engineering and social science

⁴² The lion's share of research capacity in this cluster (73%) falls within the subthemes society, culture, and ethnic groups, whereby the topic 'gender relations' occupies a prominent place (with some 20% of the total research efforts within the cluster). Most of this research is carried out in the institutes, notably the ISS, rather than in the universities. The area of attention covered by 'Culture' is broad, and includes social change (60 doctoral projects, 20 of which focus on 'gender issues'), indigenous population groups (36 projects), religion (25 projects), cultural change and cultural identity (17 projects), and a category 'other projects' consisting of 24 doctoral projects in the field of communication, the arts, languages, and science. The great interest in 'gender issues' and 'governance' as subsidiary topics (secondary descriptor) is striking.

⁴³ The 104 doctoral projects are aimed at agricultural development in general (17), agricultural production and land use (8), agricultural enterprises (6), and agrarian structure and property rights (7), rural areas (28, including 17 projects with 'rural development' as their central theme), and various environmental themes (26 projects in the area of 'ecology', 'resource management' and 'hydrology').

departments of the LUW and counterpart institutes in such places as Costa Rica and West Africa. In both programmes, moreover, the question of sustainability plays an important role. In the doctoral research the theme 'food' scores considerably lower, with only 3 projects. This suggests that young researchers have little interest in food and food supply policies in developing countries - an issue which in the past few years has come to occupy a central place within the policy of donor countries and organizations.

International dimensions

The low score for the cluster 'International dimensions' (36 fte's) is surprising, in view of the fact that the international dimension of the development issue has always been a major area of attention within Dutch development policy, enjoying considerable interest on the part of Dutch researchers. Current efforts focus mainly on the study of international and North/South relations, international cooperation, and international trade. Research in the area of the international division of labour and the study of international monetary relations receives relatively little attention. The VUA, the ISS and the UvA have the greatest capacity in this area, with a respective share of 19%, 18%, and 15% of the total capacity within this cluster.

It would appear that interest in this research area among the younger researchers is minimal (36 doctoral projects), despite the fact that the international political and economic context has lost none of its significance for developing countries; one need think only of the present developments in the area of globalization and international trade.

Industrialization, technology and urban development

Within the cluster 'Industrialization, technology and urban development' (68 fte's), research dealing with small and medium-sized enterprises and the informal sector occupies an important place (over 18%). This reflects the significance attached to this theme by both Dutch and international policy-makers, above all in relation to employment and income generation among the poorest population groups in rural and urban areas. On the other hand, the role of technology and innovation, topics which are of growing interest for developing countries as well, have received only limited attention. The capacity within this cluster is situated mainly in EUR, UvA, VUA, and the Maastricht School of Management⁴⁴.

Economic and social policies

The lion's share of research in the cluster 'Economic and social policies' (70 fte's) is devoted to such subjects as economic policy, economic development, development planning, income distribution, national budgets, funding, and structural adjustment. The economic approach is dominant and little attention is given to issues such as distribution and social aspects, the consequences of macroeconomic policy measures, and structural adjustment of the micro level. The low score for the descriptors concerned with the distribution aspect - such as the fight against poverty, basic needs, and income distribution - is significant in this respect⁴⁵. The RUL,

⁴⁴ Within doctoral studies, questions such as housing and urban development receive the most attention, with 24 out of 67 projects. The issue of industrialization is a good second with some 20 projects. Thereafter, interest is focused on issues such as industrial development in general, and the problems of small and medium-sized enterprises in the informal sector and self-employed persons in particular. The latter area of attention is given an extra accent, as is clear from the secondary descriptors. The theme 'technology', with only 5 projects, receives very little attention.

⁴⁵ Of the 90 doctoral studies in this cluster, some 18 deal with questions of economic and social development in general, and 25 with aspects of macroeconomic policy and planning, social policy, and regional development. The descriptors concerned with distribution aspects score low (7). The same is true of microeconomic research (1). Regional development and policy, in contrast, receive more attention (10 out of 25). Within this

including the Africa Study Centre, has a 19% share of the total capacity, followed by the VUA (18%), the UvA (14%), the EUR (13%), and the ISS (12%).

Human resources development

The overarching theme of research within the cluster 'Human resources development' is the human factor in development. Research activities centre on the various facets of this issue: population dynamics, education, primary health care, family planning and gender relations. However, little attention is given to the sociocultural and behavioural aspects of issues related to 'reproductive health', which may be of crucial importance when it comes to AIDS prevention and family planning. The theme 'gender', by contrast, receives due attention; it would appear that this theme has been picked up by researchers, and has gained a permanent place for itself within Dutch research⁴⁶.

4. Health research

The survey of Dutch capacity in this area follows on the report by Van Lieshout entitled 'National Research Programme in Tropical Hygiene (1991)'. The information in this report has been supplemented and updated in two ways. First, a questionnaire was sent to the secretaries of the various research networks which had been set up following this report. Second, supplementary data on current Dutch health research which is of importance for development was obtained by consulting the Netherlands Research Databank (NOD). The results of both these interventions have been incorporated into the following survey.

The Lieshout report (1991) is an elaboration of the RAWOO advisory report on health and disease in developing countries published in 1983. The latter distinguished 'areas of strength', fields which at that time were considered of international importance - by the WHO and others - and in which the Netherlands had the necessary knowledge and expertise⁴⁷:

1. Malaria
2. Schistosomiasis
3. Leprosy and tuberculosis
4. Nutrition, undernourishment, malnutrition
5. Primary health care
6. Acute infectious diseases among children.

The Van Lieshout report provided an important impetus to collaboration and networking in these areas of strength, and networks were formed for all of them, with the exception of 'Acute infectious diseases among children'. These research networks coincided with research priorities in the field of health and disease, as formulated by DGIS in the policy document 'A world of difference': 'Policy-related, operational and technical research will all be supported within public health and primary health care. Technical research will focus on major diseases where the available technology is inadequate or where breakthroughs are expected (AIDS, malaria and the

area, attention is also devoted to monetary and financial issues (9 doctoral studies), and the question of labour relations and employment (16 projects, four of which focus on women).

⁴⁶ The distribution of the total staff of 70 fte's over the various subthemes is as follows: health and health care (28%), education and training (25%), and demographics, population and employment (47%). The doctoral projects (80) in this category focus mainly on the following themes and subjects: demographic dynamics, population groups, fertility and family planning (25), migration (13), disease, health and primary health care (20), and education (16).

⁴⁷ A seventh 'area of strength' - AIDS - was later added. This move was based less on its significance within the international research world than on the huge need for research in this area.

development of vaccines)'(DGIS 1991:189).

It appears from the above that a major portion of Dutch research capacity available for issues related to health and disease in developing countries is focused on six research networks. As regards the capacity of these networks, in numbers of fte's, we must make do with estimates. An overview appears in Table 6.

Biomedical research in the Netherlands (roughly 60 to 70 fte's) centres on tropical diseases which are spread by biological vectors. Not all the biomedical research is carried out in laboratories: the laboratory work takes place mainly in the Netherlands, while the field epidemiological research in developing countries. The latter is carried out by the local researcher, and not by the Dutch partner in the collaboration. This has a number of consequences for capacity building, because it is only a part of it. Many biomedical researchers in the Netherlands are involved in cooperative research projects in developing countries; the role of the EU research programme and the stimulation of such research by the WHO are deserving special mention here.

Primary health care (PHC) research is also well under way, due in part to the fact that it combines research into the situation of women, essential drugs, and a portion of the AIDS research. It is difficult to find international funding for PHC research, but several Dutch researchers have made a name for themselves in this area. (The example of Health Systems Research springs to mind here.)

We do not have at our disposal the necessary information to provide a true picture of the relevance of this research to development issues. For instance, not enough is known about one of the most important aspects of that relevance: the contribution to capacity building in developing countries.

It is clear from the data in the Dutch Research Databank that research of importance for developing countries is also being done outside these networks. Two research themes which have recently been receiving extra attention, and which also figure prominently on the various agendas, are research into the influence of environmental factors on health, and research centring on the health of women (reproductive health). It should be noted that research in these areas is also being carried out by members of the networks.

Malaria

There are 12 research groups or institutes involved in malaria research. The research capacity involved is between 30 and 40 fte's. The research groups Medical Parasitology and Molecular Biology of the KUN account for a major portion of the capacity (approximately 40% in 1991); they are doing fundamental and epidemiological research into the development of a vaccine against the sexual stages of the malaria parasite. The research group of the Department of Parasitology of the RUL (in 1991 approximately 20% of the capacity) directs its attention towards the mechanism and prevention of chromosome polymorphism, and the mechanism of sexual differentiation. The research group of the faculty of Veterinary Medicine of the RUU is concentrating on the development of new medicines to counter malaria, while the research group of the AMC-UvA is involved in national and international programmes focusing on the development of artemisinin derivatives and the pharmacokinetics of these compounds. The entomological research group of Wageningen Agricultural University is also involved in international programmes where the focus is on the epidemiology of the vector in endemic areas and the development of methods to combat it. Other groups and institutions include the Biomedical Primate Research Centre (BPRC), the Department of Health Science in Wageningen, the Nijmegen Institute for Health Care in Developing Countries (IGOL), the Medical Committee for Vietnam, and the Medical Centre for Biomembranes in Utrecht. Within the field of malaria research, these groups collaborate with research groups and institutes in Europe, America, Africa (8 countries), and Asia.

Schistosomiasis

The research capacity directed toward the disease schistosomiasis is

estimated at 17 or 18 fte's. The Van Lieshout report mentions seven institutes or research groups. The research group at the Department of Parasitology in Leiden is particularly active (in 1991 it accounted for some 35% of the capacity). In collaboration with groups in a number of endemic areas, they are presently studying the transmission dynamics and morbidity of schistosomiasis, and related integrated control strategies. The VUA also plays an important role in schistosomiasis research (approximately 45% of the capacity in 1991); the Departments of Parasitology, Medical Microbiology and Parasitology, Histology, and Cell Biology are involved in research into the immunological aspects of the interaction between parasite and intermediate host; the Departments of Parasitology and Organismal Veterinary Medicine of the Faculty of Biology are doing research into the neuroendocrine aspects of the parasite/host interactions. The Faculty of Veterinary Medicine of the RUU is studying the energy metabolisms of *Schistosoma mansoni*. Research is also being carried out at the UvA, by the pathology laboratory and the laboratory for experimental medicine. There are cooperative agreements with countries in Europe, Africa (11 countries), Asia, and Latin America.

Leprosy and Tuberculosis

The capacity for research into leprosy and tuberculosis comprises approximately 14 fte's and is centred in the AZR, AMC, KIT, RIVM, RUL, and UvA. Leprosy research in the Netherlands is focused on improving the operational aspects of control measures, early detection of the disease with a view to preventing or limiting mutilation, the mechanism of immune pathology, and the prevention of reactions during treatment. Tuberculosis is one of the most serious health problems in the tropics; a TB pandemic is developing in the wake of the HIV pandemic. Current research is focused on operational aspects; rapid detection of patients with a view to prompt treatment and a reduction in both the duration and degree of contagion; and characterization of the bacterium in order to track the spread and identify the source of contagion. Due to the similarity between the pathogens involved in leprosy and TB, biomedical and operational research often focuses on both diseases at the same time; thus research into TB has an added value in terms of leprosy research, and vice versa. A portion of the research is of a multidisciplinary nature, as in the case of the Multidisciplinary Health Systems Research Project for Improvement of the Management of Leprosy and Tuberculosis Control Programmes (MURLEP project) of the KIT. Almost all groups involved in biomedical and operational research have cooperative agreements with researchers in developing countries, primarily in Asia.

Nutrition, undernourishment, and malnutrition

The Dutch research capacity in the field of food and nutrition is estimated at 12-15 fte's; there are currently 10 doctoral studies (half of which are being carried out by Ph.D students from developing countries). Institutions in the Netherlands which do a great deal of research into nutrition in developing countries include the LUW (Department of Human Nutrition), KIT, ASC and KUN. Nutritional research executed in developing countries and supervised from the Netherlands focuses on the following subsectors: food shortages (notably seasonal); nutrition and the environment (deforestation and food preparation); nutrition and labour (presence or absence of extra income, and nutritional situation); micronutrients (vitamin A, iron and iodine, in relation to mental development); breast feeding; growth and development of children (notably failure of children to grow in height and the consequences); composition of children's food (fermentation); and the nutrition of the elderly (research in 10 developing countries). The Netherlands collaborates with 7 countries in Asia and 7 countries in Africa.

Primary health care

The research capacity in the Netherlands is estimated at 30 fte's (17 full-time and 30 part-time researchers in 1991). The major research groups in this area are the KIT, the Departments of Social Medicine of the VUA and the UvA, the Medical Anthropology group of the UvA, Leiden University and, to a lesser extent, the universities in Nijmegen and Wageningen. It is within this area of specialization that the most pronounced areas of overlap are found. It will be clear that a great deal of research in the field of primary health care is needed in relation to diseases such as

AIDS, malaria, schistosomiasis and tuberculosis (the latter in the light of the AIDS pandemic). At a time when there is a growing need to adapt existing strategies and techniques, in order to make them usable and affordable, primary health care clearly plays a crucial role. It encompasses a great many different research areas: the factors which influence the success or otherwise of primary health care; the use and abuse of medicines and the introduction of interventions; methods to improve primary health care; the sociocultural background of HIV transmission; family planning and the care of children; traditional health care and traditional medicines; and the influence of gender on disease and health. There is collaboration with researchers in 7 countries in Asia, 7 in Africa, and 3 in Latin America.

AIDS

Because there is no treatment for AIDS, the emphasis is on a variety of interventions designed to prevent the transmission of the virus. This requires a great deal of action-oriented supporting research. In view of the urgency of the questions to which answers must be found, research is directed at finding new methodologies, such as rapid assessment techniques and participatory research. Fundamental research is also being carried out; it is centred mainly in the wealthier countries, but a number of aspects are closely bound up with the situation in developing countries. In the future, a great deal of research will have to take place in the developing countries. For one thing, there are differences between the HIV virus in wealthy countries and the virus encountered in poor countries, so that research into vaccines now taking place in wealthy countries is not automatically relevant for developing countries. An important research theme is the natural course and pathogenesis of HIV infections. In the light of the underlying circumstances (malnutrition, poor living conditions), there may be a difference in such aspects as the incubation period.

The relevant research capacity in the Netherlands is approximately 15 fte's. The major research groups are the Department of Social Medicine of the VUA, the public health authority (GGD) of Amsterdam, the KIT, and the Central Laboratory of the Blood Transfusion Service of the Dutch Red Cross (CLB). The research is carried out in collaboration with institutions in developing countries (Asia and Africa) and is often multidisciplinary (epidemiological research in combination with sociomedical or socioanthropological research). Examples include the Tanzania Netherlands Project on the Development of AIDS and HIV Control (TANERA), set up by the KIT, and the research collaboration between the VUA and the medical faculty of Hanoi (Vietnam) and the University of Surabaya (Indonesia). A cooperative agreement was recently signed between the GGD of Amsterdam and the National Institute for Medical Research in Addis Abeba, which will provide an HIV/AIDS reference centre in Ethiopia. The Dutch institutions involved are the AMC and the CLB, while in Ethiopia the University of Addis Abeba will also take part.