mobilizing knowledge to achieve the \textit{millennium development goals}
RAWOO, the Netherlands Development Assistance Research Council, was established at the request of the Minister for Development Cooperation, also on behalf of the Minister of Education, Culture and Science, and the Minister of Agriculture, Nature and Food Quality. Its mission is to advise the government on matters of policy related to research in the area of development problems, and to keep the government informed of developments in this area.

RAWOO is part of the system of Sector Councils for research. Their job is to attune research to the needs of society and to ensure an optimal match between supply and demand in the different fields of research for which they are responsible. In the case of RAWOO, the needs in question are those of societies in developing countries. Sector Councils function on the basis of tripartite discussion between the government, researchers and the users of research.

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Mobilizing knowledge to achieve the millennium development goals

Advisory report on the Dutch knowledge infrastructure in the field of international development

Netherlands Development Assistance Research Council (RAWOO), July 2005
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Executive summary

The central question addressed in this advisory report is how future Dutch research efforts can be brought to bear on the Millennium Development Goals (MDGs). The Dutch research community must be encouraged to put MDG-oriented work on its research agenda and to help build and strengthen science, technology and research capacity in low-income countries. The MDGs can help to mobilize Dutch universities and knowledge institutions around key poverty and development issues, and to promote cooperation among disciplines, among knowledge producers and knowledge users, and among partners in developing countries and the Netherlands.

Key issues and challenges

Mobilizing knowledge to achieve the MDGs requires addressing the following issues and challenges:

a) Lack of capacity for knowledge-based development in the South
The need to help build and strengthen capacities and infrastructure for MDG-related knowledge production in the developing world is of paramount importance and should be at the centre of the government’s research aid policy. Capacity development is a huge task that requires more joined up thinking and greater cooperation and harmonization of aid efforts among donor countries. The Netherlands should join forces with developing country and European partners in future efforts and new initiatives to step up investments in research capacity building. In this respect, there is a need to explore whether the systems of innovation perspective provides new insights into where capacity building interventions would be most effective.

b) The gap between the production and the use of knowledge
There is a gap between the production and the use of knowledge in policy and practice. This is due to weak linkages between knowledge producers and knowledge users, and between knowledge production and innovation. Knowledge networks are an important vehicle for involving people from different disciplines, institutions and sectors in the production and application of knowledge, and for creating dynamic linkages in the knowledge and innovation system. As regards new approaches to delivering knowledge for development, two critical issues must be tackled: how to enable the voice of the poor and the local communities in setting the research agenda, and how to improve the learning curve by better documenting and sharing the experiences and lessons learned.

c) The research for development landscape in the Netherlands
Development-related research in the Netherlands covers a wide array of institutions, research domains and topics. The diversity of the research landscape is a strength – a source of richness and creativity – that should be nurtured and used. But the other side of the coin is a lack of focus and of critical mass resulting from the fact that the human and financial resources are too thinly spread over too many institutions and themes. Greater cooperation among institutions and disciplines around key MDG-related research areas may help to create a sharper focus and a greater critical mass. There are a number of fields in which Dutch development-related research has much to offer in relation to the MDGs. In addition, potential new players outside the traditional domain of the development sciences should be mobilized to bring their knowledge and expertise to bear on MDG-related needs.
d) Lack of an appropriate enabling environment
Because of its focus on measuring scientific performance by means of the number of publications and citations, the academic reward system hampers the emergence of research approaches that are focused on critical development needs. The issue is not one of scientific quality or of relevance for development; rather, it is a matter of ensuring that both are assessed in a balanced way. The MDG-related knowledge agenda extends beyond the domain of the Directorate General for International Cooperation (DGIS) of the Ministry of Foreign Affairs (BuZa) and touches on the responsibilities of other government ministries as well as private actors. There is therefore a need to look into the possibilities for linking up the domestic knowledge and innovation agenda with the international development agenda. The government’s policy for development research lacks a research strategy framework and is weak on steering, management and coordination. DGIS is not adequately staffed with inhouse research expertise and it has paid little systematic attention to the results, effectiveness and impact of its research policy.

Recommendations

Responding to the challenge of the MDGs calls for policies and actions aimed at achieving the five strategic policy goals outlined below.

1) Forge strategic knowledge alliances in support of the MDGs

Collaborate with partner countries and research donors
DGIS should seek collaboration with partner countries (for example, through NEPAD) and with the International Forum of Research Donors to give science, technology and innovation a prominent role at the September summit meeting on the MDGs, and create broad support for joint initiatives to step up efforts to harness knowledge and strengthen science, technology and research capacities for achieving the MDGs.

Engage partners in the Netherlands
RAWOO will proactively follow up the MDG + 5 September summit by making a collaborative effort with knowledge institutions, the government, civil society and the private sector to promote the knowledge and MDG agenda. Through its involvement, the Council aims to incorporate the Southern perspective into exercises aimed at developing new research and capacity building initiatives focused on specific MDG-related needs.

2) Strengthen developing countries’ own capacity for MDG-related knowledge production

Develop country-specific strategies
DGIS should support countries to draw up country-specific strategies for capacity development using a ‘systems of innovation’ perspective. RAWOO will support a workshop to be held in Tanzania in the autumn of 2005 to discuss how knowledge and innovation systems in developing countries can be strengthened in order to make them engines for development.
Initiate a European-wide response
Building and strengthening science, technology and research capacity in support of the MDGs requires a European response. DGIS should explore whether there is support for launching a special collaborative programme between developing countries and European countries aimed at developing science and technology capacity in support of achieving the MDGs.

3) Improve the use of knowledge and adopt innovative approaches

Create a linking pin to improve the use of existing knowledge in policy and practice
DGIS should consider establishing a linking pin between research, policy and practice in the Netherlands. The aim of such a linking pin would be to synthesize research outcomes on specific MDG-related topics and to translate these into implications for policy- and decision-making through easily accessible policy briefings, presentations to policy audiences, websites for different audiences, etc.

Develop methodology to enable the voice of the poor in agenda setting
DGIS is advised to support new ideas and approaches to tackle the basic issue of enabling the voice of the poor in setting the research agenda. RAWOO and the Advisory Council on Health Research (RGO) are planning to embark on a joint project aimed at developing methodologies and tools for articulating the voice of the patients and clients of health services both in developing countries and in the Netherlands.

Improve the learning curve
DGIS is advised to investigate, possibly in cooperation with other key players, ways to better document and analyse innovative experiences in delivering knowledge for development, for example through a publication series or an annual event intended to facilitate the sharing of experiences and the lessons learned and at stimulating reflection and debate.

4) Support knowledge networks and mobilize the wider potential of Dutch science, technology and research

Stimulate the production and use of knowledge by supporting knowledge networks
Supporting various forms of knowledge networks is key to policies that aim to boost knowledge production and capacity development on MDG-related themes. The Council recommends that DGIS introduce a specific grant instrument for supporting knowledge networks linking research, policy and practice and facilitating cooperation among partners in developing countries and the Netherlands. Such a new instrument should be guided by open and transparent procedures for submitting, assessing and awarding proposals.

Make use of existing capacities in Dutch development-related research
In terms of the available capacity and expertise, some of the fields in which Dutch development-related research has much to offer in relation to the MDGs are: agricultural production, food security and nutrition (MDG 1); poverty-related diseases (malaria, TB, HIV/AIDS), health systems and reproductive health (MDG 6); natural resources management, water, biodiversity and climate change (MDG 7); and North-South interface issues related to trade, aid and finance (MDG 8).
Unlock and mobilize the wider potential of Dutch science, technology and research
Potential new players outside the traditional domain of the development sciences should be mobilized to bring their knowledge and expertise to bear on MDG-related needs. Science, technology and engineering departments – particularly in areas related to biotechnology, genetics, ICT, and microtechnology and nanotechnology – must be encouraged to apply technological knowledge to MDG-related needs and to collaborate with developing country partners in adapting this knowledge to the local sociocultural context.

Improve the registration of Dutch development-related research
A considerable amount of research related to development issues cannot be easily retrieved by tapping into the Dutch Research Database (NOD). The Minister for Development Cooperation is advised to take up this issue with the Minister of Education and Science and to jointly look at ways to improve the registration of development-related research in NOD.

Ensure that the 7th EU Framework Programme has a special programme facility for research cooperation with developing countries
The 7th Framework Programme proposal does not make explicit reference to research for development. DGIS should mobilize support from partner countries and EU Member States to make the case for a special programme facility. It should also try to convince the ministries of OCW and EZ – which are the Dutch bodies with the main responsibility for the Framework Programme – of the importance of such a facility.

5) Create a supportive, enabling environment

Make the academic reward system more conducive to linking excellence and relevance
There is a need for a more balanced system for assessing scientific excellence and development relevance. Guidelines and criteria for measuring such relevance will have to be developed and tested in practice. Research schools and research institutes must jointly take up this issue. In doing so, they should take advantage of the work done by COS, VSNU and KNAW.

Allocate 5 percent of public R&D spending in the Netherlands to MDG-oriented research
Boosting MDG-oriented research is the responsibility not only of DGIS, but also of other government ministries that have a stake in global issues of poverty, food security, health, water, urbanization, environment and development. By linking the domestic innovation agenda to the international development agenda, the Netherlands government should make a long-term commitment to allocate 5 percent of its R&D resources to MDG-oriented research.

Encourage and enable greater private funding of MDG-related research
DGIS should explore innovative ways of financing development research that links up public and private funding by means of matching grants or co-financing. The government could, for example, create financial or tax incentives for private organizations that are willing to invest in MDG-related knowledge production and research.
Make the government’s research aid policy more effective

The government’s research aid policy, for which DGIS has the main responsibility, would be more effective were it to adopt the following recommendations. The Council wants to particularly highlight the importance of these recommendations, since they are crucial for the implementation of the other proposals put forward in this report. They include:

- Draw up a comprehensive research strategy framework outlining the goals, priorities, approaches, support mechanisms and resource allocations; consult the wider research and development community, including partners in developing countries, on its views and ideas as to how the government should support knowledge production and innovation as part of its aid programme.
- Reappoint a chief development scientist at DGIS and ensure that this person is supported by an adequately staffed bureau.
- Make grant-making procedures transparent through competitive bidding and tender procedures, and introduce external review mechanisms for assessing proposals.
- Create within DGIS a pool of inhouse expertise in science, technology, and knowledge and innovation policy.
- Build on experience and improve organizational and institutional learning.
- Improve research coordination i) within DGIS and between the Hague and the embassies; ii) with the government ministries most directly concerned with MDG-related research and with the Netherlands Organization for Scientific Research (NWO); and iii) with bilateral, multilateral and other research donors, and among national and European research efforts.
1. Introduction

1.1 Background

This report on the Dutch knowledge infrastructure in the field of international development was prepared at the request of the Dutch Minister for Development Cooperation. In her letter of 7 August 2003 concerning the continuation of RAWOO, she stated: ‘It would be useful if the Council could once again cast its light on the total research effort in the field of development and development cooperation. In such an overall vision, the Council could give its opinion on Dutch efforts in financing research and capacity building in and for developing countries, as well as on the research and knowledge infrastructure available in the Netherlands itself. What is the current state of that infrastructure (also considering its importance for Dutch society)? Is there any overlap? Are there any gaps?’

The Minister’s question is approached from a needs-oriented development perspective by linking the issue of the Dutch knowledge infrastructure to the Millennium Development Goals (MDGs), which were adopted by the United Nations (UN) at the 2000 Millennium Summit meeting. Internationally, there is broad recognition that science, technology and research have a vital role to play in attaining the Goals, as witnessed by, for example, the results of the UN Millennium Project and the report prepared by the Commission for Africa at the request of the British government.1

The summary report of the UN Millennium Project (which is under the directorship of Professor Jeffrey D. Sachs) observes that ‘any strategy to meet the Goals requires a special global effort to build scientific and technological capacities in the poorest countries, both to help drive economic development and to help forge solutions to developing countries’ own scientific challenges’.2 The report also suggests that, based on a preliminary estimate, by 2015 at least USD 7 billion a year will be required to support R&D that is relevant to the needs of developing countries. Of this sum, the report suggests spending USD 4 billion annually on R&D in public health, and USD 1 billion each on R&D in agricultural research, energy and long-term climate change.

Although the problems targeted by the MDGs are not new, they do help to provide a focus and to indicate where contributions from science, technology and research are most urgent and can make a difference to poverty reduction. The Goals provide an opportunity to start working from critical development problems and to accommodate contributions from various disciplines. The MDGs also allow for critical research to provide alternatives. Research may point to weaknesses related to MDGs and reveal the ‘pathologies’ behind them. It may also indicate what knowledge is needed to achieve the MDGs and how to achieve them.

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2] UN Millennium Project (2005), Investing in Development: A Practical Plan to Achieve the Millennium Development Goals.
1.2 Central question and aim

Taking the above as a point of departure, the central question addressed in this report is how future Dutch research efforts can be brought to bear on the MDGs. The Dutch research community must be encouraged to put MDG-oriented work on its agenda and to help build and strengthen science, technology and research capacity in low-income countries. The MDGs can help to mobilize Dutch universities and knowledge institutions around key poverty and development issues, and to promote cooperation among disciplines, among knowledge producers and knowledge users, and among partners in developing countries and the Netherlands. As the momentum for increased global support of science, technology and research in support of the MDGs is building up, this report is intended to stimulate the key actors in Dutch development-related research to join forces and step up their efforts to harness knowledge for the achievement of the Goals.

1.3 Addressees

The report’s recommendations are directed primarily towards the Minister for Development Cooperation, who has the main responsibility for the government’s research aid policy. Since the MDGs also touch on the responsibilities of other government ministries, some recommendations are addressed (or also addressed) to them. Other recommendations are intended for the other key actors in the Netherlands that are engaged in the production, use and funding of MDG-related knowledge, namely: academic and research institutions as providers of research training and producers of basic and applied knowledge; the Netherlands Organization for Scientific Research (NWO) and private foundations that provide research grants; co-financing organizations (Cordaid, Hivos, Iccco, Novib and Foster Parents) that support the NGOs and civil society organizations involved in development projects in the South; and the private sector as sponsor, user and producer of knowledge.

1.4 Preliminary remarks

The Council would first like to make a number of introductory remarks in order to contextualize the analysis of and the recommendations arising from its inquiry. First, it is important to underline that this report is only a first step towards developing a response to the challenge of the MDGs from a knowledge perspective. This implies that the knowledge and MDG agenda presented is a work in progress that needs to be promoted through active follow-up in close cooperation with key players in the field of knowledge for development in the Netherlands and abroad. Second, while the emphasis in the report is on the classic producers of knowledge – that is, the universities and knowledge institutions that focus on applied research – the Council recognizes that the production and application of knowledge increasingly takes place in hybrid settings or heterogeneous networks that may involve groups of people from different disciplines, institutions and sectors providing the various types of knowledge necessary to solve complex poverty and development problems.3] Thus, new

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3] This so-called Mode 2 knowledge production recognizes that knowledge is produced at multiple sites, and that various forms of knowledge (basic and applied, global and local, codified and tacit) are necessary to solve complex issues that affect development and poverty reduction.
players from the private sector and from society at large have entered a field traditionally occupied by universities and knowledge institutions. The Council sees this as a positive development. This trend should be encouraged, and indeed some of the recommendations in this report are intended to do just that.

Third, directing research towards MDG-related themes does not imply that other research should be neglected. On the contrary, funding agencies must carefully balance their policies by paying attention to both MDG-related research and to bottom-up, curiosity-driven research that is not tied to specific policy priorities.

Fourth, although the emphasis in this report is on the Dutch knowledge infrastructure, there can be no misunderstanding that the need to build and strengthen national knowledge and innovation systems, as well as the scientific and technological capacities that are part of it, must remain at the heart of the government’s research aid policy. However, this policy should also pay adequate attention to sustaining the relevant knowledge base in the Netherlands. Although both goals can be pursued simultaneously, from the viewpoint of development there should be a clear difference in emphasis and weight: that is, priority should be given to the overarching goal of enhancing developing countries’ own capacity for producing, absorbing and applying knowledge.

Fifth, this report addresses the broad domain of development-related research in the Netherlands, ranging from agricultural, health, environmental and technological sciences to the social sciences and the humanities. However, the situations in the various fields can differ substantially, and what appears to be a problem in one field is not necessarily a problem in another field. The heterogeneity of the domain should therefore be kept in mind when reading the findings and the recommendations.

1.5 Method

The present report was prepared by a Council committee chaired by Professor Akke van der Zijpp. In tackling the Minister’s request, the committee collected information and data by: i) conducting an overview study of the development-related research landscape in the Netherlands; ii) preparing working documents on research needs in relation to the MDGs and on research aid policies of four donor countries (UK, Canada/IDRC, Switzerland and Norway); iii) commissioning a study on the views of the Dutch research community (based on in-depth interviews with 15 Dutch researchers); and iv) holding a consultation meeting that brought together a group of people from developing countries and the Netherlands to discuss key policy issues and challenges, and the responses and actions required to address them.

4] Other RAWOO members sitting on the committee were Dr Shamsul Bari, Mr Jaap Dijkstra, Dr Julia Gitobu, Professor Arie Rip and Professor Koos van der Velden. The committee was assisted by Mr Paul Smits and Ms Manijke Veldhuis from the RAWOO secretariat.
2 Key issues and challenges

2.1 Lack of capacity for knowledge-based development in the South

Every country needs its own capacity for knowledge-based development. However, many developing countries lack the culture or mind-set that is required to produce and apply knowledge for development. It is striking, for example, that knowledge and research are absent from most of the Poverty Reduction Strategy Papers (PRSPs) produced by partner countries. Developing capabilities, changing the mind-sets and attitudes of stakeholders, and changing the culture of organizations takes time: it cannot be done overnight. The Council observes a tendency at the DGIS to ignore a key lesson that 25 years of donor support to building knowledge capacity has taught us, namely that it is a long-term process. Experience has shown that successful capacity-building requires support for at least a decade. There is a danger that donors will become impatient as a result of pressure to demonstrate immediate results and an immediate impact.

There is an emerging consensus about the success factors and the dos and don’ts of capacity building.5 One of the lessons learned is that building capacities at the individual level through training will only be sustainable if it is combined with stronger institutions and a supportive enabling environment. Current thinking goes one step further and emphasizes the need to strengthen the broader knowledge and innovation system in which the individuals and organizations must function.6 Looking at the knowledge and innovation system as a whole – namely as a complex system of institutions and actors engaged in knowledge production, learning, dissemination and utilization – has implications for policy. It implies, for example, that focusing on the supply side of the system alone (i.e. on training researchers or on building centres of excellence) will not automatically deliver tangible results and make a visible contribution to the achievement of the MDGs. The demand side also has to be taken into account, particularly if one wishes to develop a system that is responsive to development needs. It also implies that one must look beyond the modern science system to include local knowledge systems. By analysing and understanding the ‘system’, insights may become available that can help to determine where capacity building interventions would be most effective.

The South must determine what the MDGs mean and what knowledge is needed to achieve them, otherwise there will be no local ownership and no sustained interaction process between the producers and users of knowledge in the countries concerned. However, many countries find it difficult to do this on their own and often lack insight into where they stand with respect to the MDGs. Thus, there is still room for the North to assist countries, particularly in the sphere of capacity building.

Building and strengthening human and institutional capacities and infrastructure for MDG-related research in the South is an enormous task that calls for more joined-up thinking and greater cooperation and harmonization of aid efforts among donor

countries. It is now generally recognized within the international aid community that external support for capacity development should be directed by the needs of developing countries and by their own poverty reduction strategies and research agendas.

In the past decades, the Netherlands has supported several programmes aimed at building and strengthening post-secondary education and research capacity in developing countries. This included the training in the Netherlands of master’s and PhD students and mid-career people from these countries. Through these efforts a lot of experience has been gained in the higher education and research field with the ways and means of capacity development. The Netherlands could build on its experience and strength by joining forces with European and developing country partners in future efforts and new initiatives to step up investments in research capacity building. For example, the EU’s development policy currently provides no programme for supporting research capacity building. Given the task ahead, a concerted endeavour on the part of developing countries and European countries may help to boost efforts aimed at building and strengthening science, technology and research capacity focused on MDG-related needs.

### 2.2 The gap between the production and the use of knowledge

It is increasingly recognized that the linear model of science-society relationships that prevailed in the past has failed because it was based on the false assumption that the findings of basic research would more or less automatically find their way into new applications, innovations and development interventions. Because of the linear mode of thinking, more emphasis has been placed on basic upstream research and less on applied downstream research and development activities aimed at translating the fruits of basic research into new applications, interventions and development action. This phenomenon has recently been described as the ‘know-do’ gap, that is, the gulf between what we know and what we do in practice.7]

#### Integrated approaches and knowledge networks

The MDGs provide opportunities to start working from real-life development problems. Addressing these problems requires multidisciplinary approaches that combine the natural sciences, the life sciences and technical approaches with social-science approaches. The challenge is to integrate social, economic, political and institutional concerns into research strategies. It also requires linking up actors in research, government, business and civil society in knowledge networks. Such networks can help to place knowledge production in an application-oriented context, and thus improve its impact on development and poverty reduction. Establishing linkages between the various actors in the knowledge and innovation system is essential, if knowledge production is ultimately to be effective and lead to innovation and practical results.

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Networks are important for:

- Bringing together disciplines, and involving policy makers and practitioners in the production and application of knowledge;
- Bringing in non-traditional players from the business sector and society;
- Creating dynamic linkages in the knowledge and innovation system;
- Linking up partners in the South and the North;

The experiences of various donor agencies show that support to knowledge networks can be a highly effective mechanism for delivering research aid.

The relevance of knowledge production is thus related not only to content; process and context are equally important. The process of producing and applying knowledge must be emphasized, as must the need to adapt global knowledge to the local context (i.e. local needs, circumstances and realities) and to effectively build on local knowledge, local institutions and local solutions to problems. The comparative perspective could provide more knowledge on local contexts and settings, and on the functioning of local institutions. Knowing why certain approaches, practices and policies work in one context and not in another is important from a policy point of view.

A linking pin between research, policy and practice

The results of knowledge production must be better utilized in decision-making, both in the South and in organizations in the North that support the MDGs (including DGIS and Dutch development-oriented organizations). The Netherlands does not have a knowledge institute similar to, for example, ODI and IDS in the UK, to act as a linking pin between research, policy and practice and to absorb, process and synthesize the results of research for policy-making, interventions and action. Such a bridging mechanism plays an important role in translating knowledge into policy options and in using existing knowledge more effectively for innovation in policy and practice.

Enabling the voice of the poor in setting research priorities

How can we enable the views of research users, policy-makers and professionals, and those of the people and communities at the grassroots in setting research priorities? Who represents the users? And who sets priorities for whom? How can we incorporate the voice of the local communities and the poor into the process of demand articulation and setting research agendas? We often assume that NGOs represent the voice of the poor, but we have not really found a way to address this basic issue. Researchers are currently not trained to work in a demand-driven way; they need basic skills in working with stakeholders and a change of attitudes. For example, they need to learn how to

8] This point was also emphasized by Gordon Conway, the recently appointed chief scientist at the UK Department for International Development (DFID) and former president of the Rockefeller Foundation, who used his first public speech to call on scientists and politicians to listen more attentively to the needs of the world’s poor. In his view, it is imperative that development agencies such as DFID listen closely to the demands of the poorest in developing countries — and not only to scientists and politicians there. See ‘Six components for science in poor nations’, Ehsan Masood, 2 February 2005. Source: Scidev.net
employ participatory methods and techniques to assist communities in assessing their needs and how to translate these needs into research questions. The challenge is to introduce this approach into the mainstream of current scientific thinking and practice.

A slow learning curve
Have current ways of delivering knowledge for development failed, or are we in fact making progress? On the whole, there is progress – positive changes are taking place – but this particular learning process is a slow one. New research approaches that integrate disciplines and involve end-users and the local population in the research process have been adopted; there is more recognition of the need to foster local ownership, to enhance local capacity, to respond to locally defined research needs and to promote equal partnerships; the sandwich model for PhD training is now widely being applied, and more attention is being paid to mechanisms to retain researchers in developing countries. Progress in all these areas has to be not merely sustained but accelerated by better communicating and sharing experiences, practices and the lessons learned. Both successful and less successful experiences provide lessons from which much can be learned. Documenting, analysing and sharing these experiences is important from the viewpoint of joint learning among all the actors concerned.

2.3 The development-related research landscape in the Netherlands

Mapping the research landscape
As the RAWOO overview study clearly demonstrated, development-related research in the Netherlands covers a wide array of institutions, research domains and topics. The study also made it clear that it is increasingly difficult to delineate the landscape and identify what falls within or outside the field of development-related research. This is partly because development issues and global issues are increasingly interrelated. In principle, all research efforts that have a bearing on issues of poverty, hunger, disease, conflict and environmental change in the developing world, could be included in a survey intended to map out the development-related research landscape in the Netherlands. The efforts undertaken by RAWOO show that a considerable amount of research related to development issues cannot be easily retrieved through tapping into the Dutch Research Database (NOD). This particularly concerns development-related research conducted in the agricultural, health, environmental, technical, education, economic and management sciences: such research is often not labelled as ‘development related’ and is increasingly being mainstreamed in more general disciplinary programmes. Furthermore, NOD does not provide information on staff input and funding.

Diversity, focus and critical mass
That it is not easy to get a detailed and complete picture of the research landscape is therefore not surprising. What emerges from the overview study is a landscape characterized by a great deal of diversity. Such diversity is a strength – a source of richness and creativity – that should be nurtured. But the other side of the coin is a lack of focus and of critical mass resulting from the fact that the human and financial resources are too thinly spread over too many themes. Greater cooperation among institutions and disciplines in key MDG-related research areas might help to create a sharper focus and a greater critical mass, and to increase the visibility of Dutch research.
internationally and make it more competitive. Another related policy issue is whether sustaining the home-country knowledge base and maintaining adequate capacity in the Netherlands requires making strategic choices and identifying areas in which the Netherlands has a competitive advantage and added value. This issue is even more relevant when one apprehends that a strong national knowledge base is a precondition for participation in European research programmes. Greater cooperation and a greater critical mass at the European level might also be needed to provide research at multilateral institutions with countervailing power, in particular to counteract the dominance of the knowledge produced by the World Bank.

**Dutch research capacity and the MDGs**

In terms of the available capacity and expertise, some of the fields in which Dutch development-related research has much to offer in relation to the MDGs are: research in the area of agricultural production, food security and nutrition (MDG 1); research on poverty-related diseases (malaria, TB, HIV/AIDS), health systems and reproductive health (MDG 6); research on natural resources management, water, biodiversity and climate change (MDG 7); and research on North-South interface issues related to trade, aid and finance (MDG 8). Research capacity in these areas refers to a broad array of disciplines, including the natural and the life sciences, technical sciences, environmental sciences and the social sciences. Some of the fields in which Dutch development-related research has less to offer in relation to the MDGs, in terms of the available capacity and expertise, are: education (MDG 2), gender issues (MDG 3), child health (MDG 4), maternal health/safe motherhood (MDG 5) and some of the targets related to the global partnership for development (MDG 8). Education clearly stands out as a neglected area in Dutch research: although it ranks among the highest policy priorities, research expertise on educational issues is extremely weak. In the past two decades, development-related knowledge and expertise in this area in the Netherlands has almost disappeared. The government’s intention to raise its annual expenditure on education to 15 per cent (approximately EUR 500 million) of the aid budget raises some questions pertaining to the role of knowledge and Dutch expertise in the formulation and implementation of its educational policies.

**Drawing on the wider potential of Dutch science, technology and research**

The material collected for the overview study suggests that there is a pool of knowledge and expertise outside the traditional domain of the development sciences that could be useful and relevant to development purposes. Where appropriate, a special effort should be made to mobilize research groups that are currently not involved in development-related research to bring their knowledge and expertise to bear on MDG-related needs. For example, opportunities emerging from scientific and technological advances in genomics and related biotechnologies, ICT and nanotechnology might have a crucial role to play in achieving the MDGs.9] Technology is an important driving force of

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9] For example, according to the *Genomics and Global Health Report* (University of Toronto, 2004), genomics and related biotechnologies have a crucial role to play in achieving five out of the eight MDGs. See also: the final report of the UN Millennium Project Task Force on Science, Technology and Innovation (2005), *Innovation: Applying Knowledge in Development*, London.
economic and social development, but the potential of applying technological knowledge to the needs of developing countries is currently underutilized. Yet, there are no quick technical fixes to development problems. Technological innovation must go hand in hand with social, cultural, institutional and organizational change and innovation, and it must be directed to work for the poor.

Another example comes from the health-related social sciences, which have an important contribution to make when it comes to understanding and improving health systems. While in the past disease-oriented biomedical science dominated research into health problems, there is now increased emphasis on the role of the health-related social sciences in improving health and health systems in low- and middle-income countries. It can thus be expected that there will be an increased need for social-science research and knowledge related to issues of health equity and access to health services, quality of care, health economics and health policy research. Mobilizing this kind of expertise in the Netherlands – even though it is not always ‘development-related’ expertise – could be very relevant to development purposes, while it would also open up opportunities for comparative research on the challenges facing health systems in both developing countries and the Netherlands, as well as opportunities for a two-way process of knowledge sharing and learning.

2.4 Lack of an enabling environment

Reward systems
Because of its focus on measuring scientific performance by means of the number of publications and citations, the academic reward system hampers the emergence of research approaches that are focused on critical development needs. The issue is not one of scientific quality or of relevance for development; rather, it is a matter of ensuring that both are assessed in a balanced way. In some research schools, particularly in the hard sciences, there is a tendency to emphasize scientific excellence and to ignore relevance for development. In other schools, there is more balance between these two aspects of the quality of research. Research schools should institutionalize ways of research assessment that acknowledge both excellence and relevance.

Linking the domestic innovation agenda to the international development agenda
The MDG-related knowledge agenda encompasses a broad spectrum of global poverty and development issues, ranging from hunger and food security to education, gender inequality, infant and child mortality, safe motherhood, killer diseases, water management, environmental protection, urbanization, sustainable energy and North-South interface issues. As such, it extends beyond the domain of DGIS and touches on the responsibilities of other government ministries as well as private actors. A greater share of public R&D funding in the Netherlands should therefore be allocated to addressing global poverty and development issues. Such a shift would not only benefit developing countries but also serve national interests. The total government R&D

investment in 2004 amounted to EUR 3.4 billion, of which EUR 68 million (2 percent) was spent on development-related research.\footnote{This information is based on figures presented in the Science Policy Progress Report 2004, published by the Ministry of OCW.} By linking the domestic innovation agenda to the international development agenda, more public R&D resources could become available to increase the spending level to 5% in the coming ten years.\footnote{The Canadian government has already committed itself to increase spending on development-related research to 5% of total public R&D funding by using resources from the innovation budget. DFID is also seeking to link up its future ‘science for development strategy’ to the UK’s ten-year investment framework for science and innovation.}

If the Dutch government were to decide to substantially increase its expenditure on knowledge, technology and innovation in the coming years (as was recently recommended by the Innovation Platform, which is chaired by the Prime Minister), it would be appropriate to use part of these additional resources to step up MDG-oriented research.\footnote{See the report of the Innovation Platform on shifting ICES resources from physical infrastructure to knowledge and innovation. Innovatieplatform (2005), Grenzen zoeken, grenzen verleggen.}

**The government’s research aid policy**

The government does not have a comprehensive research strategy framework outlining goals, priorities, approaches, support mechanisms and resource allocations. The government’s policy for development research lacks openness and transparency. There is hardly any public information available about the policies that are being pursued, the projects and programmes that are being supported or the budgets that are being spent on research. Decision-making on the funding of research proposals is not transparent. Grant-making largely takes place on the basis of the personal contacts of researchers and programme officers. Proposals are reviewed internally and are not subjected to external scrutiny by peers and experts.

DGIS does not have adequate inhouse research expertise; it has a short institutional memory, mainly as a result of high staff turnover in the central departments in The Hague and the country embassies. On the whole, embassies are not specifically equipped to undertake the research-related tasks that are being expected of them. They are, by the very nature of their primary function, inclined to see things from a government perspective, one that encourages good bilateral relations between the government of the Netherlands and the host government. They have difficulty in working with universities, knowledge institutions and NGOs.

Until recently, DGIS paid little systematic attention to the results, effectiveness and impact of its research policy. There is a need to specify what has been achieved, to highlight best practices, experiences, achievements and successes, to build on positive results and the lessons learned, and to integrate these into future policies.

A chief scientist could play an important role in drawing up a comprehensive research strategy framework, in improving research management and coordination, in improving the learning function and in creating awareness of the use of knowledge across DGIS and the embassies.
3 Recommendations

To better gear Dutch research efforts to MDG-related needs, policy responses and actions should focus on the following five main policy directions.

3.1 Forge strategic knowledge alliances in support of the MDGs

Collaborate with partner countries and like-minded research donors to give science, technology and innovation a prominent role at the September summit meeting on the MDGs

Internationally, the momentum for the increased global support of science, technology and research in support of the MDGs is building up. The ‘Investing in Development’ report of the UN Millennium Project leaves no doubt that increased investment in knowledge production and greater efforts to build capacity for absorbing, generating and using knowledge in the poorest countries must be an integral part of strategies designed to achieve the Goals.

DGIS should seek collaboration with partner countries (e.g. through NEPAD) and the International Forum of Research Donors to create broad support for a joint initiative to step up efforts to harness knowledge and to strengthen science, technology and research capacities in order to achieve the MDGs. This particularly refers to DFID – which is currently working closely together with developing country partners to get science and higher education a higher position on the international development agenda – and to donors with a proven track record in funding development research that has a strong focus on capacity building, such as IDRC and SIDA.

Engage knowledge institutions, the government, civil society and the private sector in an alliance for boosting MDG-related knowledge production and capacity development

In the Netherlands, there is a growing interest in looking at the MDGs from a knowledge perspective. The Development Policy Research Network (DPRN) recently organized a meeting that brought together scholars and practitioners from development organizations to discuss the challenge of the MDGs. NWO/WOTRO has started to rethink its policy in the light of the MDGs, while civil society organizations and the private sector are showing increased interest in the role of knowledge in achieving the MDGs. RAWOO will proactively follow up the MDG + 5 September summit by making a collaborative effort with knowledge institutions, the government, civil society and the private sector to promote the knowledge and MDG agenda. Through its involvement, the Council aims to incorporate the Southern perspective into exercises aimed at developing new research and capacity building initiatives focused on specific MDG-related needs. As a first step, RAWOO will hold a seminar to conclude its present lecture series on ‘The MDGs: Rethinking Science and Aid’.
3.2 Strengthen developing countries’ own capacity for MDG-related knowledge production

Develop country-specific strategies for capacity development using a systems of innovation perspective

The systems of innovation perspective could be applied to countries in various developing regions and in various stages of development to see whether it provides new insights into where capacity building interventions would be most effective. The results could be used to give direction to strategies for knowledge production, innovation and capacity development in specific sectors of government policy. The results could also be used as an input for PRSPs. A comparative approach could be considered, since there are big differences between low-income and middle-income countries and between countries in Asia, Africa and Latin America. DGIS should support countries that show a keen interest in the systems of innovation approach to apply and adapt the methodology to the developing country context. With the support of RAWOO, Research for Poverty Alleviation (REPOA) in Tanzania will hold a workshop in the autumn of 2005 to discuss how knowledge and innovation systems in developing countries can be strengthened in order to make them engines for development.

Initiate a European-wide response by launching a special collaborative programme between European and developing countries aimed at developing science and technology capacity in support of achieving the MDGs

Building and strengthening science, technology and research capacity in support of the MDGs requires a European response. There is currently no EU programme specifically aimed at supporting the development of science and technology capacity. DGIS should explore whether there is support for such a programme among developing country partners, EU Member States and the European Commission and, if appropriate, take the necessary steps to put the issue on the European development agenda.

3.3 Improve the use of knowledge and adopt innovative approaches

Create a mechanism that absorbs, processes and synthesizes MDG-related research outcomes and acts as a linking pin between research, policy and practice

In the Netherlands, there is currently no mechanism to bridge the gap between research, policy and practice. The aim of such a mechanism would be: (i) to absorb, process and synthesize research outcomes on specific MDG-related topics and to translate these into implications for policy- and decision-making, and (ii) to ‘close the loop’ by reaching out to policy makers, practitioners and the wider public through easily accessible policy briefings, presentations to policy audiences, websites for different audiences, etc. DGIS should consider establishing a linking pin function in the Netherlands. Alternatively, the issue of research-to-policy dynamics could be included in the partnership arrangements that are currently being established through the IS Academy between DGIS and Dutch universities.
Develop methodologies and tools for articulating research demand, in particular for including the voice of the local communities and the poor in setting the agenda and identifying research priorities

The voice of the local communities and the poor is weakly represented in exercises that aim to set research agendas through consulting a wide range of stakeholders. There is widespread agreement that this is a basic issue that needs further attention. DGIS is advised to keep this issue on its agenda and to support new ideas and approaches to tackle it. RAWOO and the Advisory Council on Health Research (RGO) are planning to embark on a joint project aimed at developing methodologies and tools for articulating the voice of the patients and clients of health services both in developing countries and in the Netherlands. Such a comparative project would also create opportunities for a two-way (i.e. South-North and North-South) learning process.

Improve the learning curve by better documenting and sharing experiences and the lessons learned

There is a need for a more systematic approach to sharing innovative experiences, dos and don'ts, and successes and failures in producing and applying knowledge for development, and in the related capacity building. In the past decade, important lessons have been learned but more needs to be done to ensure that these lessons are actually taken up and acted upon both in policy and in practice. DGIS is advised to investigate, possibly in cooperation with other key players, ways to better document and analyse innovative experiences in delivering knowledge for development, for example through a publication series or an annual event intended to facilitate the sharing of experiences and the lessons learned and at stimulating reflection and debate.

3.4 Support knowledge networks and mobilize the wider potential of Dutch science, technology and research

Stimulate the production and use of knowledge on critical MDG-related problem areas by supporting knowledge networks

Supporting various forms of knowledge networks is key to policies that aim to boost knowledge production and capacity development on MDG-related themes. The Council recommends that DGIS introduce a specific grant programme or instrument to support international knowledge networks that link research, policy and practice and facilitate cooperation among partners in developing countries and the Netherlands. Such a new instrument should be guided by open and transparent procedures for submitting, assessing and awarding proposals.

Make use of existing capacities in Dutch development-related research to address MDG-related needs

In terms of the available capacity and expertise, the fields in which Dutch development-related research has much to offer in relation to the MDGs include: research in the area of agricultural production, food security and nutrition (MDG 1); research on poverty-related diseases (malaria, TB, HIV/AIDS), health systems and reproductive health (MDG 6); research on natural resources management, water, biodiversity and climate change (MDG 7); and research on North-South interface issues related to trade, aid and finance (MDG 8). Research capacity in the areas mentioned above refers to a broad array of
disciplines including the natural and the life sciences, technical sciences, environmental sciences and the social sciences.

Unlock and mobilize the wider potential of Dutch science, technology and research to address MDG-related needs
Researchers and research groups with MDG-relevant knowledge and expertise that are currently not involved in development-related work must be encouraged to address MDG-related needs. Funding agencies, such as DGIS and NWO, should create the necessary conditions and incentives to stimulate science, technology and engineering departments – particularly in areas related to biotechnology, genetics, ICT and nanotechnology – to apply technological knowledge to MDG-related needs and to collaborate with developing country partners in adapting this knowledge to the local sociocultural context. As these ‘science’ departments may lack experience in working in a developing country, context linkages should be created with social-science departments and development studies.

Improve the registration of Dutch development-related research through the Dutch Research Database (NOD)
The efforts undertaken by RAWOO to map out the Dutch development-related research landscape show that a considerable amount of research related to development issues cannot be easily retrieved through tapping into the Dutch Research Database (NOD). Furthermore, NOD does not provide information on staff input and funding. The Minister for Development Cooperation is therefore advised to take up this issue with the Minister of Education and Science and to jointly look at ways to improve the registration of development-related research in NOD.

Ensure that the 7th EU Framework Programme has a special programme facility for research cooperation with developing countries
The 7th Framework Programme proposal does not make explicit reference to research for development. DGIS should mobilize support from partner countries and EU Member States to make the case for a special programme facility. It should also try to convince the ministries of OCW and EZ – which are the Dutch bodies with the main responsibility for the Framework Programme – of the importance of such a facility.

3.5 Create a supportive, enabling environment

Make the academic reward system more conducive to linking excellence and relevance
Current reward systems emphasize academic excellence and pay less or almost no attention to development relevance. The challenge is to integrate scientific quality and development relevance into one overall research assessment system. Guidelines and criteria for measuring development relevance will have to be developed and tested in practice. Research schools and research institutes should describe in their self-assessment reports what they have achieved in terms of development relevance and how this relates to their mission. In doing so, they can take advantage of the work done by COS, VSNU and KNAW on measuring the social impact of research.
Establish a long-term commitment to allocate 5 percent of public R&D spending in the Netherlands to MDG-oriented research

The Council takes the view that a larger part of public R&D expenditure in the Netherlands should be allocated to MDG-oriented research, and advocates increasing research spending from the current level of 2 percent to 5 percent within ten years. Boosting MDG-oriented research is the responsibility not only of DGIS but also of other government ministries that have a stake in global issues of poverty, food security, health, water, urbanization, environment and development. By linking the domestic innovation agenda to the international development agenda, the Netherlands government should establish a long-term commitment to allocate 5 percent of its R&D resources to MDG-oriented research.

Placing more emphasis on MDG-related research also concerns NWO/WOTRO, as well as the other NWO departments. NWO is advised to also establish a long-term commitment to spend 5 percent of its budget on MDG-oriented research. NWO/WOTRO is already moving in this direction, which, in the eyes of the Council, is a positive move. However, the Council wants to emphasize once again that research funding organizations must provide enough financial space to support both research that is not tied to specific policy priorities and small-scale, bottom-up curiosity-driven research.

Encourage and enable greater private funding of MDG-related research

Stepping up investment in MDG-related knowledge production requires the mobilization of greater private research funding from industry, civil society organizations, charities, lotteries and private foundations. DGIS should explore innovative ways of financing development research that links up public and private funding by means of matching grants or co-financing. The government could, for example, create financial or tax incentives for private organizations willing to invest in MDG-related knowledge production and research.14]

Make the government’s research aid policy more effective by improving research management, staff capacity, transparency, organizational learning and research coordination

In the view of the Council, adopting the following recommendations would make the government’s research aid policy more effective. Although some of the recommendations have already been made in earlier RAWOO advisory letters concerning the research policy of DGIS, the Council believes that they are crucial for the implementation of the other proposals put forward in this advisory report.15] They include:

- Draw up a comprehensive research strategy framework outlining goals, priorities, approaches, support mechanisms and resource allocations; consult the wider research and development community, including partners in developing countries, on its views and ideas as to how the government should support knowledge production and innovation as part of its aid programme.

14] See the report produced by the Innovation Platform on mobilizing private research funding through creating a fourth funding stream (on top of the three streams already existing). Innovatieplatform (2005), Geven voor Weten: de Vierde Route. Particuliere middelen voor de wetenschap.

• Reappoint a chief development scientist. This person would need to be supported by an adequately staffed bureau.
• Make grant-making procedures transparent through competitive bidding and tender procedures, and introduce external review mechanisms for assessing proposals.
• Create a pool of inhouse expertise in science, technology and innovation at DGIS. The pool should include people with a background in the natural and the life sciences and in technological research. Make DGIS staff, both in The Hague and at the embassies, more research-minded.
• Communicate the government’s research aid policy more effectively.
• Build on experience and improve organizational and institutional learning, strengthen adaptive capacity to learn from experience and extract lessons for future research policy and strategy.
• Improve research coordination i) within DGIS, and particularly between the Hague and the embassies; ii) among the Dutch government ministries most directly concerned with MDG-related research (in particular, the ministries of Education and Science, Health, Agriculture, Environment, and Economic Affairs, in addition to DGIS) and among these ministries and the National Research Council (NWO); and iii) with bilateral, multilateral and other research donors, and among national and European research efforts.

The Council greatly appreciates the new emphasis DGIS is putting on the importance of knowledge. However, donors need capacity too. If not enough human resources are made available to strengthen strategy development, research management and research coordination, and to make the new research policy work in practice, the policy will probably fail to deliver results, despite all the good intentions. The central departments and the embassies will not be able to live up to expectations unless they are better equipped to handle research and knowledge issues.
### Appendix 1

#### Acronyms & abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>COS</td>
<td>Consultative Committee of the Sector Councils for Research and Development</td>
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<td>DPRN</td>
<td>Development Policy Research Network</td>
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<td>DFID</td>
<td>Department for International Development</td>
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<td>DGIS</td>
<td>Directorate General for International Cooperation (Ministry of Foreign Affairs)</td>
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<td>EU</td>
<td>European Union</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>IDS</td>
<td>Institute of Development Studies</td>
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<td>IDRC</td>
<td>International Development Research Centre</td>
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<td>KNAW</td>
<td>Royal Netherlands Academy of Arts and Sciences</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>NEPAD</td>
<td>New Partnerships for Africa’s Development</td>
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<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
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<td>NOD</td>
<td>Dutch Research Database</td>
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<td>NWO</td>
<td>Netherlands Organization for Scientific Research</td>
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<td>OCW</td>
<td>Netherlands Ministry of Education, Culture and Science</td>
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<td>ODI</td>
<td>Overseas Development Institute</td>
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<td>RAWOO</td>
<td>Netherlands Development Assistance Research Council</td>
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<td>R&amp;D</td>
<td>Research and development</td>
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<td>REPOA</td>
<td>Research on Poverty Alleviation</td>
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<td>RGO</td>
<td>Advisory Council on Health Research</td>
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<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<td>SIDA</td>
<td>Swedish International Development Agency</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>VSNU</td>
<td>Association of Universities in the Netherlands</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WOTRO</td>
<td>Netherlands Foundation for the Advancement of Tropical Research, NWO</td>
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Appendix 2

RAWOO publications

General Recommendations 1

General Recommendations 2

General Recommendations 3
International Dimensions of Development Problems; research needs and priorities. October 1983.

General Recommendations 3a
Legal Aspects of International Dimensions of Development Problems; research needs and priorities. June 1984.

Seminar reports

General Recommendations 4
Food Security in Developing Countries, research needs and conditions. January 1986.

Working Paper 1
Towards Autonomy for Women; research and action to support development process. June 1986.

Seminar report

Working paper 2

Policy paper 3

Publication no. 1

Publication no. 2
Criteria for assessing proposals for research in and for developing countries. August 1991.

Publication no. 3

Publication no. 4

Publication no. 5

Publication no. 6
Publication no. 7
A medium-term perspective on research for development. Research needs and Dutch

Publication no. 8

Publication no. 9
Building up and strengthening research capacity in Southern countries. A study prepared

Publication no. 10
Supporting capacity building for research in the South. Recommendations for Dutch

Publication no. 11
Research capacity for sustainable development. Report of a field study in Ghana, Kenya
and Kerala (India) conducted for RAWOO by Wesley Monroe Shrum, Jr. April 1996.

Publication no. 12
Agenda 21. RAWOO/RMNO lectures on sustainable development. Edited by Frans

Publication no. 13
Towards a European Science and Technology policy for development. November 1996.

Publication no. 14
Internal conflicts, security and development. RAWOO lectures and seminar. Edited by

Publication no. 15
Framework for a Ghanaian-Dutch Programme of Health Research for Development.
March 1998.

Publication no. 16
Developing a Ghanaian-Dutch programme of health research for development.
Results of a questionnaire to identify relevant expertise in the Netherlands and

Publication no. 17
Framework for a Philippine-Dutch Programme of Biodiversity Research for Development.
March 1998.

Publication no. 18
Information & Communication Technology and Development. RAWOO lectures and

Building bridges in research for development

Publication no. 19
Mobilizing Knowledge for Post-Conflict Management and Development at the

Publication no. 20
Coping with Globalization. The Need for Research Concerning the Local Response to
Globalization in Developing Countries, September 2000.

Publication no. 21
Utilization of Research for Development Cooperation. Linking Knowledge Production to
Publication no. 22

Publication no. 23

Publication no. 24

Publication no. 24/S
Hacer que las ciencias sociales importen en la lucha contra el VIH/SIDA. September 2002. (in Spanish).

Publication no. 25

Publication no. 26
Colophon

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