Sida

DEPARTMENT FOR RESEARCH COOPERATION, SAREC

Research Cooperation 2004

Research Makes Sense

Research Makes Sense

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Research Makes Sense

Sida research cooperation 2004 has been a remarkable year. For the first time ever, development cooperation has been set in the framework of a coherent Swedish Policy for Global Development. The policy envisages a situation where concerted efforts are made to empower institutions and people in low-income countries to address their domestic problems, combat poverty and engage in regular international interaction. The specific role of development cooperation is to help create conditions that will enable the poor to improve their lives.

At the same time, all areas of Swedish politics are charged with the obligation to contribute to an equitable and sustainable global development as part of their regular mandate. Ideally, this combined approach should hasten the achievement of the millennium development targets, eventually making aid redundant.

Sweden has pioneered efforts towards what is termed "alignment", i.e. aiming for sector-wide programme and budget support in line with national poverty reduction strategies. Domestic analysis and access to relevant knowledge is crucial in this context, both in providing evidence on which to formulate strategies, and in negotiating support and evaluating the outcome.

In this yearbook on Sida research cooperation 2004, we argue that low-income countries need a proper basis for research. All too often, however, development cooperation research targets specific issues and problems on and for development, rarely strategic investments on which to build a basis for research in and by low-income countries. We outline how comprehensive funding for research could be aligned in support of national strategies for research development.

Research does not only produce new knowledge and innovation – it provides tools for dealing with knowledge in a systematic way. Decision makers can turn to the local research community for advice. The researchers have access to international research and can interpret existing knowledge. They may understand and analyse the local situation and problems in such a perspective. They may also bring situated perspectives and analyses to the international research community. Research in universities contributes to a questioning mind in higher education.

In this yearbook, we seek to demonstrate the link between research and the poverty focus and rights perspective, as well as the central elements outlined in the Swedish Policy for Global Development. As there is a time lag between research and its practical use, once knowledge has been brought into practice, its origin in research may have been forgotten. We point to the link between gender studies in East African universities and their adoption of policies to combat sexual harassment. We illustrate the value of situated perspectives in conflict studies, pointing to inequality and external dependence as central factors.

Sustainable use of natural resources can only be realised if available resources are known. Baseline information, taken for granted in rich parts of the world, like mapping of flora and fauna or geological, and marine resources, require research involving research methods in chemistry, chemistry physics, mathematics, biology and geology. Domestic research has led to protection of coral reefs in East Africa, efficient fish farming in Lake Victoria, cost-effective methods of avoiding chemical contamination in vegetable production in Cambodia and decreasing dependence on fossil fuel in small scale industry in Asian countries.

Innovative approaches to capitalise on research findings for economic growth share a common theory but in practice build on local actors and conditions. In Uganda, clay minerals have been found suitable for manufacturing high quality fireclay refractories, in Tanzania different types of bio-composites are produced from local raw material and in Mozambique research has influenced the diversification of the wood manufacturing industry. At regional level, research contributes to understanding economic growth and its determinants.

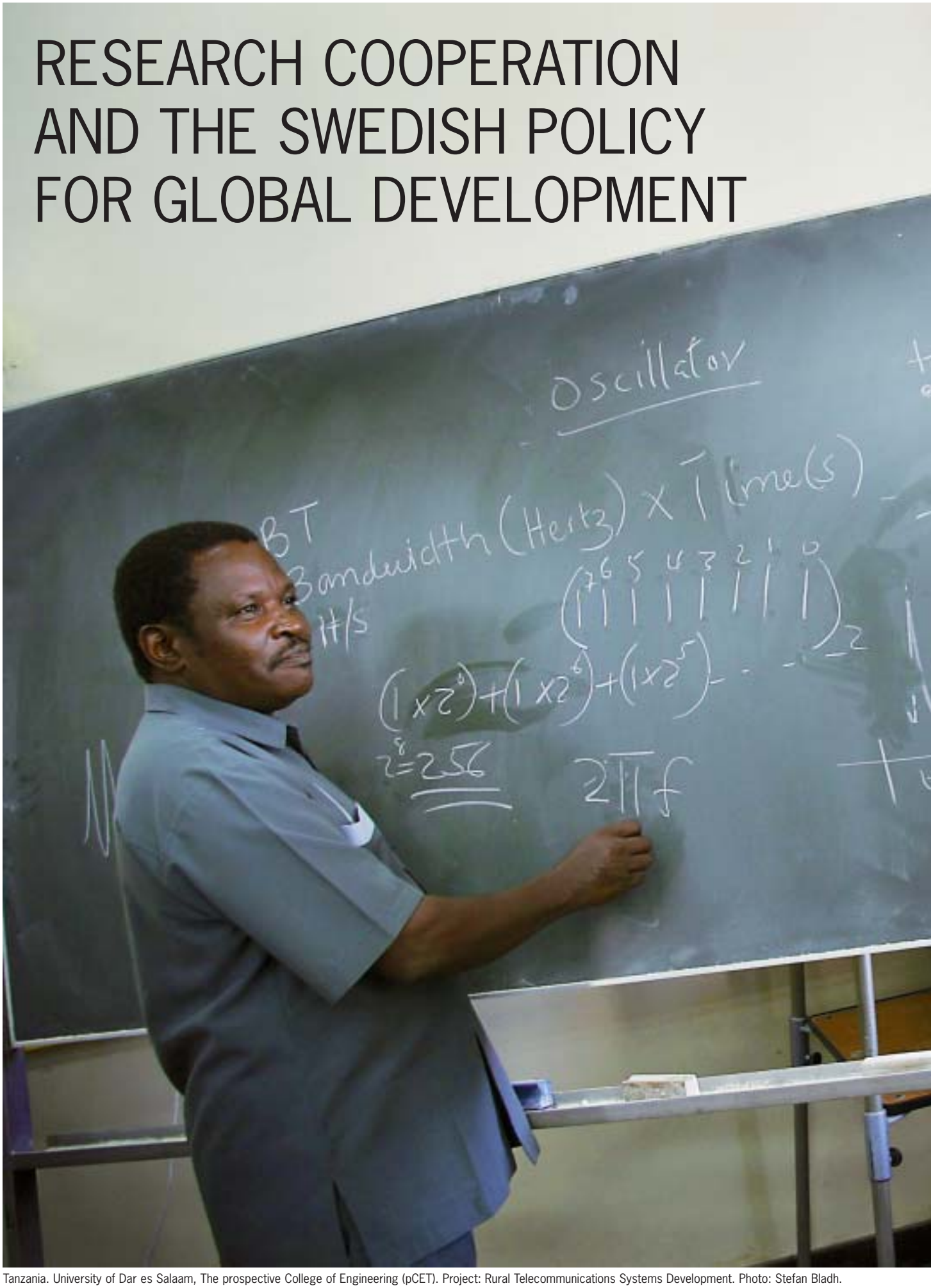
Research for social development range from finding appropriate tools, like HIV diagnostic kits developed in Tanzania and analysing how to sensitise poor people, to health hazards when using contaminated drinking water in urban India. In the absence of proper registers, demographic surveillance sites may provide important information to policy-makers. Recent findings point to the increasing threat of "modern" diseases like diabetes and heart conditions also in low-income countries.

Having underlined the importance of national research structures, I would also like to stress the value of their interaction with international research. One example is the propagation of orange sweet potatoes in Uganda. Developed in cooperation with the International Potato Centre, CIP, the orange fleshed sweet potato is rich in beta-carotene and may prevent vitamin A deficiency. Another example is the vital breakthrough in malaria research, following from the determining of the entire genetic code of the malaria mosquito. Not only does it open for new research, it has also meant the development of skills in functional genomics in African institutions.

Developing research skills and institutions for research in low-income countries, enhances the capacity to address immediate research needs as well as the capacity to engage in research cooperation contributing to global public goods. We hope that this Year Book illustrates our conviction that research makes sense.

Berit Olsson
Stockholm, summer 2005

RESEARCH COOPERATION AND THE SWEDISH POLICY FOR GLOBAL DEVELOPMENT



Tanzania. University of Dar es Salaam, The prospective College of Engineering (pCET). Project: Rural Telecommunications Systems Development. Photo: Stefan Bladh.

Tanzania. The Chalinze Health Centre, Bagamoyo. Photo: Stefan Bladh.

Research as a Shared Responsibility

In 2003, the Swedish parliament approved a new bill for global development, making Sweden one of the first countries in the world with an integrated policy for global development. It underlines that the responsibility for global development is not merely a task for development cooperation, but shared among many actors. The new bill encompasses all areas of policy and proposes a common objective by which to contribute to an equitable and sustainable global development. Trade, agriculture, the environment and security are examples of policies that must pull in the same direction and reinforce each other. Swedish actors should also contribute. Universities have an important role and are expected to embrace global issues in research and higher education.

The policy sees research as an important feature of development cooperation, mandated to help create conditions that will enable the poor to improve their lives. Thus, research collaboration emerges from Swedish domestic ambitions as well as from efforts of strengthening capacity in low-income countries. On one hand the policy challenges Swedish universities to expand their activities in this direction. On the other hand, research cooperation through Sida must further sharpen and develop ways of supporting institutions and capabilities for research in low-income countries.

The role of Swedish development cooperation is to focus on the poor, their development and right to be respected partners in international cooperation. Poor people and countries must be in charge of their own situation and able to benefit from opportunities brought about by increased global interaction. In the era of globalisation, knowledge is becoming increasingly important. Those who are cut off from the global knowledge process will be left even further behind. All development is generated by people within their own societies. It can never be created from the outside. Research is – and should constitute – an integral part in achieving such locally based development. It is as important for poor nations to have capability to produce their own knowledge as it is for them to be able to share, access, interpret and adapt knowledge

RESEARCH AND DEVELOPMENT

"Research contributes to knowledge-driven development. Only a small proportion of all research is carried out in developing countries or deals with the development or specific problems of poor countries. The lack of information and researchers in many developing countries makes it difficult for them to provide higher education and build up research institutions of their own. Another obstacle is the increasing privatisation of knowledge, for example in the form of patents. Only a fraction of the world's patents are taken out in developing countries. At the same time, their contribution in terms of raw materials is of great importance for the patenting of crops, drugs etc. Sweden should support the development of research and the utilisation of research findings in developing countries. Support should also continue to be given to Swedish development research and to the establishment of a resource base for development cooperation in Sweden".

Government Bill 2002/03:122
Shared Responsibility:
Sweden's Policy for Global Development.
5.5.7. Education policy

Uganda. Photo: Mats Widén.

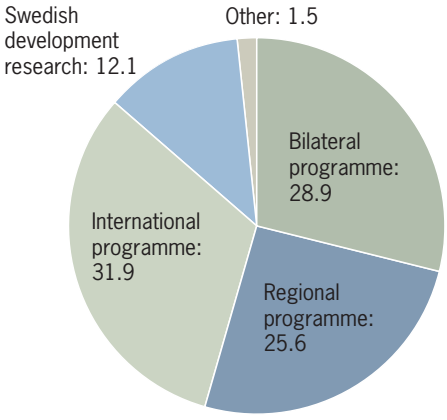
POVERTY REDUCTION AND RESEARCH

"The task of reducing poverty rests not only with partner countries and development cooperation funds and agencies; it also requires consistent and coherent pro-poor policies at international level and in many areas such as trade, agriculture, research and intellectual property rights. The role of Sida is to assist in creating optimal conditions that help poor people and countries in their struggle to reduce poverty."

Sida, Perspectives on Poverty

Sida disbursements 2004 by programme:

Percentage of total SEK 773.7 million.



from other parts of the world.

Thus research contributes to the central policy perspectives, human rights and priorities of the poor. Research is also essential for the eight major components emphasized in the Swedish policy. Three of these are fundamental values like democracy and good governance, respect for human rights and equality between women and men. These three areas do not only form conditions for a sound research culture, but are also subjects of research. There are obvious connections between the three components grouped under sustainable development: sustainable use of natural resources and protection of the environment, economic growth, and social development and social security. Here, research develops new knowledge, tools and insights. The role of research for conflict management and human security is more indirect but no less important. Finally knowledge belongs to the key elements of global public goods, the final major component underlined in the Swedish policy. This relates not only to the products of research but also to the process of enabling participation by low-income countries in the international research community.

Strengthening the research capacity in developing countries enhances the ability to negotiate, choose technologies, make use of natural resources and develop the social sector. It also enhances the possibilities for countries to make constructive use of the coherent Swedish Policy for Global Development.

International negotiations

Negotiating on the international arena is more difficult for low-income countries due to their limitations and gap in knowledge and experience in this area. The risk of receiving advice from external experts who are ignorant of the particular situation or specific consequences may put the country in jeopardy. Low-income countries participate in a number of negotiations within the UN system and in other multilateral organs. Of particular interest are negotiations within the World Trade Organisation, where countries that find themselves in similar situations could formulate joint positions through sharing knowledge. Bilateral negotiations concerning aid, relations or investments also require country representatives with a good level of knowledge and negotiating skills.

Sida supports research in connection with world summits and international conferences arranged by the UN system. Such research serves to highlight perspectives from low-income countries in the preparatory processes and to influence the declarations or plans of action. Researchers with local knowledge and perspectives, have been mobilised to contribute, either through international or regional research organisations or in coopera-

A RIGHTS PERSPECTIVE ON RESEARCH?

The International Covenant on Economic, Social and Cultural Rights addresses scientific knowledge as a right. In Article 11 concerning the right of everyone to an adequate standard of living, parties agree to make full use of scientific knowledge to improve production, conservation and distribution of food. Article 15 on science and culture recognises the right of everyone to enjoy the benefits of scientific progress and its applications and the protection of material and moral interests of scientific authors. States undertake to respect the freedom indispensable for scientific research and creative activity. Finally, States should encourage and develop international contacts and cooperation in the scientific and cultural fields.

Tanzania. Hanna Nassif, Dar es Salaam. Urban and Regional Planning. Photo: Stefan Bladh.

Vietnam. Railway to Hanoi. Photo: Johan Resele.

tion with Swedish researchers. For example, local researchers involved in cooperation with Sweden were greatly involved in the formulation of their own country's position at the World Summit on the Information Society in 2004.

Choosing technologies

Attracting foreign direct investments (FDI), technology transfers and infrastructure investments is crucial for low-income countries. Such negotiations involve a number of choices which need to be based on evidence. Usually external experts are commissioned, often by development partners, who contribute with generalised assessments. Local researchers and experts could, in contrast, contribute with knowledge on the particular conditions prevailing in the country. For technology choices, local expertise is particularly important as both adoption and adaptation of an external technology requires the sources of knowledge to be found within reasonable distance. Being in charge of such an innovation process where external technologies are adapted to new uses in new contexts, improves the position to attract and negotiate FDI.

Exploiting natural resources

Innovations in low-income countries to a large extent derive from exploitation and new uses of natural resources, and processes to refine them. Again a number of concerns need to be raised

in negotiation with potential investors or collaboration partners. Support for geology research, for instance, has given Tanzania a better opportunity to localise and assess the value of mineral resources. The authorities in the country will stand better prepared for negotiations on concessions in such cases. In the area of biotechnology, opportunities are better protected if there is local research capacity to evaluate potential values of products or processes. In this area intellectual property rights are of particular concern.

Again the need for a national capacity to analyse the situation in which the country and its people finds itself, is crucial. With an increasing part of aid directed as support to sector-wide programmes, such analytical capacity must be mobilised within each of the social sectors. Advanced knowledge is required to formulate policies for sectors like health, welfare, education, labour market, as well as advanced knowledge to evaluate, elaborate and maintain the systems of social provision. As these systems, with few exceptions, are co-financed by external aid, extensive negotiations with the donor community must take place. Decision makers rely on knowledge based on internal expertise to safeguard that nationally grounded positions guiding the use and evaluation of the external assistance.

RESEARCH AND POLICY DIALOGUES

The long-term nature of knowledge production and the immediate need of policy can cause friction between researchers, who are perceived to be sitting in their ivory towers, and policymakers faced with day to day operational decisions. Therefore, it is important to establish and sustain communication between the community of researchers and the community of policymakers. Researchers have to be responsive to policymakers' pressing need for practical policy guides emanating from research and policymakers should be ready to consider research results to inform their decision. In 2004 there have been a number of such dialogues between research organisations supported by Sida and policymakers including:

1. UNRISD Conference on social knowledge and international policy In Geneva addressing questions like whether researchers address issues and questions of concern to policy and whether research findings reach policymakers and inform policy making.

2. AERC Senior policy Seminar on mobilisation of resources for financing pro-poor growth held in Kampala, Uganda where participants shared critical policy issues and made practical suggestions to bridge the gap between research and policymaking. Among other things participants emphasised the need to move away from "continent-wide generalisations in the research results to practical aspects of how to implement research recommendations with emphasis on best practices and use of appropriate language".

Vietnam. Research on Arabica coffee in Bavi. Photo: Johan Resele.

Developing the society

The international influence on the development of societies in low-income countries has been strong, both through the colonial experience, and through the history of development aid. Currently, National Poverty Reduction Strategies are developed in order to safeguard national ownership of the to development processes.

Sida Support for Research Cooperation

Uganda. Makerere University, Faculty of Technology.
Photo: Mats Widén.

Research cooperation aims to support the building of strong national institutions and enhances access to international research findings. Active research groups at national universities and in regional research organisations become part of the international research community and can access and interpret available scientific information.

However, only a fraction of international research addresses development issues. Therefore, Sida supports a number of research programmes which address neglected research areas of major importance for poverty reduction and development. They promote cooperation, exchange of information among researchers and communicate research findings to

Uganda. Makerere University, main library. Photo: Mats Widén.

potential users. Regional research networks address issues of common concern. International research networks mobilise researchers from the South as well as from the North, and thus facilitate the integration of research in global development efforts.

We have now outlined challenges and intentions of Sida support for research, but how do we work to meet the objectives? The following sections describe strategies and practice in Sida support for research capacity in low-income countries and strategies for developing new knowledge as global public goods. A final section deals with engaging Swedish researchers for development objectives.

Research capacity

Sida supports the strengthening of research capacity through international and regional organisations, but mainly through bilateral research cooperation with low-income countries. Sweden is one of few donor countries to have acknowledged the need to strengthen research capacity at an institutional level, rather than limiting the support to training of individuals and research project support.

The process of selecting target institutions moves through a chain where country development cooperation strategies identify needs of and challenges for interventions. Surveys analyse the research landscape leading to the identification of key institutions. Usually, Sida supports the development of research environments in national universities.

The emphasis on ownership and poverty reduction has always been a guideline for Swedish research cooperation. The Swedish Policy for Global Development puts these efforts into a coherent context. This calls for a sharpening of the strategies for research cooperation and the tools used.

Ideally, external support for the strengthening of research environments should be aligned with policies and strategies for research, both at

Uganda. Makerere University – one of East Africas largest universities with 35,000 students. Photo: Mats Widén.

"Sida's strategy to fund the basic prerequisites for research at universities has produced a number of research environments in low-income countries which contribute to development and poverty reduction".

national and university level. In some universities, Sida has supported the formulation of strategic plans which include strategies for research. Currently efforts are underway to support national strategies for research. The need for research must be recognised, not only by the university management but also by the government. The long term benefits of research are not always recognised and conditions for making use of research findings are not always in place. In the absence of such strategies, the general ambition has been to support at least one researching university to cater for the needs of the country and eventually become a resource for the creation of a more extended university system and for national innovation systems.

The main methods used by Sida have been through research training of academic staff and support for infrastructures and equipment. The Swedish engagement in bilateral research cooperation has been a learning process. The first 10 years could be characterised by support to national research councils. An evaluation of this period showed that, in most cases, these bodies lacked the capability to make priorities of research based on scientific criteria. A countermeasure during the next period was to strengthen research capacity through research training using the so-called sandwich model, which is still in use. This modality differs from ordinary research scholarship systems that detach the student from the local context. In the sandwich model students spend time at Swedish universities for coursework, analysis and writing-up, while the empirical research is formulated with a local perspective and with data collected from the local context.

Swedish support to university infrastructure (libraries, laboratories, ICT solutions etc.) have added to the institutional development. The sum of these should contribute to the establishment of research environments that are attractive for trained researchers. Through these additions the sup-

port gradually became more institutional than individual.

Sida's strategy to fund the basic prerequisites for research at universities has produced a number of research environments in low-income countries that could contribute to development and poverty reduction. However, to realise this potential, governments with support from the development aid community, must formulate and implement national policies and strategies for research.

Academic integrity

The balance between academic freedom and the right to conduct research without an immediate benefit for the society on one hand, and the need for developing countries to make the best possible use of scarce academic resources is in many countries quite delicate.

In many Latin American countries the struggle for university autonomy has been so important for the academic institutions that it has resulted in universities with strong independence but limited resources and little contact with society as a whole. At the other end of the extreme there are universities too dependent, only providing the service required by the financiers, thus lacking the academic freedom essential for the development of research capacity. Some African universities have developed innovative mechanisms to diversify their funding sources through enhanced enrolment of students. How this impacts on the academic and research competence at the university is yet to be evaluated.

In some countries political change may bring about shifts in governmental institutions, with short institutional memory as a consequence. Universities, on the other hand, ought to have a more long-term perspective, or as Telemaco Talavera, president of The National University Council in Nicaragua puts it:

"In a society with many abrupt changes, both political and military, like here in Nicaragua, I believe that the university can play a stabilizing role, strengthening the democratic process. We will be here and continue with our work, no matter who is in power in the country".

Another threat against research and academic freedom might paradoxically come from those seeking to improve education for the country's poor majority and from the donors. "Education for all" means that a country's resources should be allocated to also reach the poor in the most remote areas. Academic work, as a contrast, needs concentration: researchers must have contact with each other; the environment must enable and stimulate research. Spreading out scarce research resources to several universities could therefore jeopardise development of the country's research capacity and academic freedom. This is why Sida tries to achieve a balance between quantity and quality in bilateral research collaboration based on the specific conditions in each country.

"In a society with many abrupt changes, both political and military, like here in Nicaragua, the university can play a stabilising role, strengthening the democratic process".

Nicaragua. Students at the University of León. Photo: Kina Robberts.

Sri Lanka. Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo. Photo: Stefan Bladh.

New knowledge

Research is about knowledge, about understanding nature, human behaviour and society. Research is about collecting and arranging information but it is more than the commonsensical arrangement of facts. Research applies methods which may reveal hidden connections and underlying causes. Findings are presented in scientific papers mostly read by other researchers whose search and research may verify or question the conclusions. Established findings should then find their way to applications and users. Globally, investments in research are larger than ever before as are investments in applications leading to innovations. While findings from basic research in principle are available to all, there are enormous gaps in capacity to develop useful applications. Research towards applications of primary interest to poor societies and people have been underfinanced and neglected.

Sida supports research which may lead to insights, processes or products of particular concern for addressing poverty and promoting sustainable development. Regional and international research programmes establish links with national research in developing countries and draw upon relevant research globally. Swedish research contributes in these efforts, both in its regular interaction with the global research community and in Sida funded initiatives and collaborative arrangements.

Regional research cooperation

Regional research networks may enrich national research through the exchange of ideas and peer support. It can also add comparative analyses; joint undertakings in addressing shared problems and provide a platform for joint advocacy. The strength of the type of regional research organisation supported by Sida depends on its interaction with national research and its capacity to articulate "Southern" perspectives in international research and debate.

Sida supports regional networks for interaction and collaboration among national level research groups. Within

Uganda. Iganga Mayuge Demographic Surveillance. Photo: Mats Widén.

such networks, groups of comparative strength will emerge as "centres of excellence" attracting students and guest researchers from within or external to the network. Based in national institutions, such centres have a clear ownership as compared to externally funded regional centres.

Regional cooperation can create new opportunities for interaction among professionals, institutions or governments, as well as links to international research programmes. One example is social science research. Here Sida puts a strong emphasis on support to regional research, where a substantial part is directed to broad-based social science organisations. These organisations have particular strengths in the areas prioritised by the Swedish Policy for Global Development, namely democracy, human rights, peace and conflict research, gender and social development.

However, overlapping regional and international research initiatives may cause fragmentation of research funds as well as splitting research groups and researchers in competing activities. A range of regional research initiatives exists with unclear structure and ownership. While Sida recognises the value of pluralism in research, there is a need to avoid inefficient duplication and externally driven research agendas. Few regional research organisations and networks could be sustained without donor support. Therefore, Sida has entered into discussions on how to forge regional competitive, merit-based research funding structures.

International research programmes

The principal aim of international research programmes is to identify neglected research areas and promote relevant research in order to fill those gaps. It is also important to ensure that research results come to use in developing countries.

International research programmes may contribute to supporting conditions for poor people to improve their lives and promote fair and equitable global development. Examples are the programmes for research on tropical diseases, TDR, linked to the World Health Organisation, and international agricultural research undertaken within the Consultative Group for International Agricultural Research, the CGIAR system, linked to FAO. In social sciences UNRISD and WIDER have similar roles for research on international social development and development economics respectively.

The purpose of these programmes is to provide an overview of existing knowledge and research, to identify neglected research areas, promote relevant research on such gaps, and to translate research findings into recommendations for various situations. Beyond the rational of enhancing relevant knowledge, there is special value in supporting research linked to the UN special agencies. The research programmes bring the special agencies in touch with current research in their field. Truly international in reach, these organisations may also produce comparative analyses and make research findings available as global public goods. This is particularly important when private interests are strong, as in plant breeding and studies of genetic resources.

"Sida promotes the integration of researchers from weak research environments into international research efforts, using modalities that benefit national capacity".

Sida promotes the integration of researchers from weak research environments into international research efforts, using modalities that benefit national capacity, e.g. through engaging institutions rather than individuals. Another concern is focus and continuity. Research orientation should be based on an agreed research agenda funded over a period of time. As all organisations depending on external funds, donor funded research organisations tend to follow trends and turn towards "hot topics" in their fundraising efforts. Among contributing donors, Sida will continue to promote core funding rather than earmarking for specific research activities or cooperation partners.

Stockholm. Dr. Joseph Kadoma Byaruhanga, Dr. John Baptist Kirabira and Dr. Stefan Johnsson at Royal Institute of Technology (KTH). Photo: Petter Bolme.

"I'm very glad for being a part of the cooperation between Makerere and KTH."

It is a rainy day in June in Stockholm and John Baptist Kirabira can relax because he has just defended his PhD thesis at the Department of Materials Science and Engineering, Division of Mechanical Metallurgy at the Royal Institute of Technology (KTH) in Stockholm.

"I was very nervous, but now I'm very glad for being a part of the cooperation between Makerere and KTH."

Dr. Kirabira has been going back and forth between Sweden and Uganda since 2001. He smiles as he holds up the three clay bricks that he has produced out of Ugandan raw materials. They are of the highest quality, which if commercialised, could lead to an industry in Uganda.

Together with Dr. Kirabira are both of his supervisors, Dr. Stefan Johnsson from KTH and Dr. Joseph Kadoma Byaruhanga from Makerere, equally proud of their student.

"Very few PhD students can finish their dissertation so soon," says Dr. Johnsson.

Dr. Byaruhanga has supervised Kirabira since he first began his master of science:

"Whatever you can do in Uganda you do there, but the things you can't due to the lack of sophisticated equipment you need to bring to Sweden. For example the physical tests of the bricks were made in Uganda but the complicated analyses such as the X-Ray, defraction and scanning the samples in electronic microscopes were done in Stockholm".

"The joint agreement is a win-win situation for both Makerere and KTH. Uganda is considered well endowed with various ceramic raw materials. But most of the ceramic minerals in Uganda are utilised in the manufacture of low-value products".

"Little has been done towards exploiting the materials used in ceramics," Dr. Kirabira explains.

The major objective of his work was to characterise kaolin and ball clay with the aim of developing fireclay refractories and to also consider other applications for the kaolin. Sample powders were collected on location in various Uganda districts and transported to Sweden where the powders were characterised and processed into refractories and beneficiated kaolin.

The conclusions Dr. Kirabira draws are that Ugandan kaolins are highly kaolinitic, highly layered, while ball clay is dominated by quartz and less layered. The kaolins are quite pure and a successful beneficiation of the kaolin from the Mutaka region in particular brings its chemical composition close to that of ideal kaolin.

"The minerals have been found to be suitable for manufacturing fireclay refractories. Properties of the fireclay bricks from the Ugandan minerals compare very well with commercially produced ones," explains Dr. Kirabira.

Dr. Stefan Johnsson agrees:

"The research results show that it is possible to develop a ceramics industry in Uganda. The Swedish company Höganäs is definitely interested in buying bricks from Uganda. They are actually better than the bricks Höganäs produces in Sweden. The next step is to see if the kaolin from Uganda also can be used for paper pulp. Processed kaolin for paper is sold at a much higher price than that which is used for ceramics," says Dr. Johnsson.

Engaging Swedish research for development

Swedish researchers and universities could become even stronger actors in global development, building on current efforts. The interest in research on development related issues, and collaboration with low-income countries, has been growing in practically all disciplines in Swedish universities. Sida provides a number of opportunities to put this interest into mutual advantages. Hence, Swedish researchers contribute to new findings, as part of enhancing global development and to capacity building. In Swedish universities, these links contribute to international awareness and influence curricula. Thus it serves to broaden international perspectives beyond the current OECD dominance.

In an effort to establish and strengthen research environments at national universities in low-income countries Swedish universities have contributed with training of researchers. In 2004 around 400 Ph.D. candidates were enrolled at Swedish universities within the framework of Sida supported bilateral research cooperation. Such training programmes are focused on research issues of mutual interest. Over time such collaboration has matured to develop locally based training programmes that may involve Swedish researchers as lecturers and co-supervisors.

Swedish development research

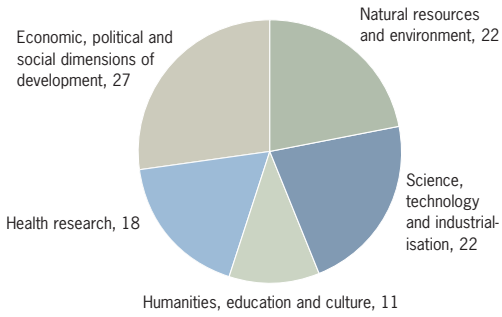
Around 10% of Sida research funds go directly to Swedish development research. Grants are allocated to project proposals annually submitted and subjected to peer review. The purpose of this support is primarily to maintain a Swedish resource basis for development issues and to contribute to international understanding in Swedish universities. The new area focusing on research networks aims to encourage increased contact between researchers and "practitioners" in areas central for development co-operation. The complexity of poverty reduction requires a knowledge-based analysis of social and economic development.

Swedish research links

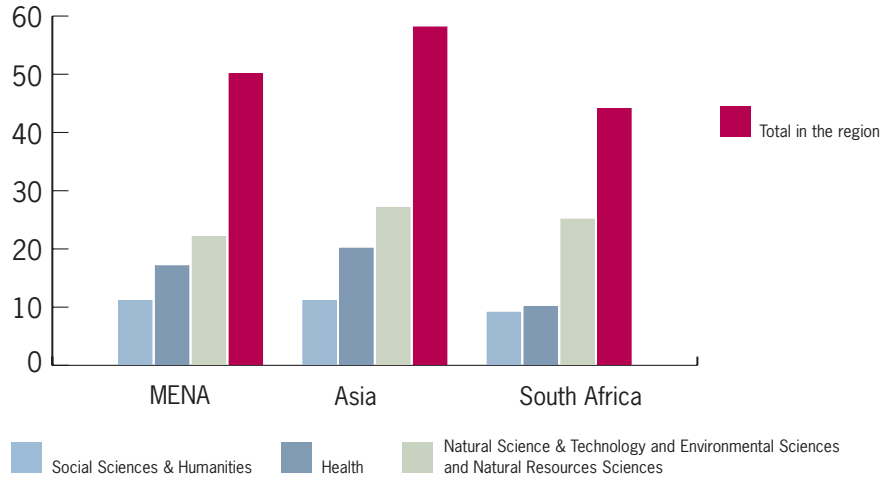
Swedish research links is a comparatively new programme where collaborating Swedish and developing country researchers jointly apply. Proposals are peer reviewed and grants are allocated for visits and joint work. The primary purpose of this programme is to promote relations that reinforce high quality and relevant research, knowledge and technical exchange of common interest between Swedish researchers and researchers in more resource strong developing countries. The programme is currently directed to South Africa, the Middle East and Northern Africa and Asia. It contributes to Swedish efforts of academic internationalisation and adds the dimension of collaboration with developing countries.

Swedish research grants distributed by research area:

Percentage of 2004 total allocation
SEK 94.2 million.



Swedish research links applications for 2004:



Research and ICT

Laos. NAFRI Livestock Research Center. Photo: David Isaksson.

Universities in low-income countries exist in societies where large groups of the population have never made a telephone call or used Internet and e-mail. Seventy percent of the world's poor live in rural and remote areas where access to information and communication technologies is scarce or non-existing. Most of the world's poorest countries lack broadband connection. In fact, in 2004 a country like Rwanda had a total bandwith that was less than what an ordinary Swedish household can get access to. The digital divide is a major obstacle in the integration of the world's poor countries onto the global arena. Overcoming the divide is important for the sharing of information that could help to reduce global poverty.

Universities constitute important focal points for ICT within the society

and contribute to the development of ICT as a means of combating poverty and improving living conditions in the country. At the same time, a developed ICT structure is a prerequisite for strengthening universities in developing countries. Modern research cannot be conducted without access to global information sources. The Internet is absolutely vital for modern research in terms of access to information, data, communication and research networking.

By building and experimenting with systems that are of use to the university, researchers acquire the skills needed to promote the development of ICT within the larger society. In this process universities have learned to cooperate with the private sector and society in general. ICT scholars from the universities have played key roles in the formulation of national ICT policies. Working closely with the private sector has given universities an important role in establishing an emerging ICT industry and has also made it possible for the university to sell services and become more self-sustainable.

Since 1998 Sida has supported universities in developing their ICT capacity with a focus on research cooperation programmes, investments in ICT infrastructures that give access to the Internet and training in the utilisation of ICT tools for academic and administrative purposes. In 2004 the budget for ICT projects at universities in developing countries was approximately 60 MSEK a year.

Projects have been initiated by providing assistance to participative processes leading to the formulation of an ICT policy and an ICT master plan. In 2004, Makerere University in Uganda revised its ICT masterplan for 2005 to 2009 which was originally formulated in 2000. A notable part of the new plan is the development of policies for increased financial contribution by the university to implement the masterplan.

The introduction of ICT into universities is clearly changing the way research is done but also how education is conducted. Not only is it possible to achieve a closer collaboration between different universities and work with distance learning, ICT is also paving the way for a new pedagogical approach where students are expected to play a more active role than before. ICT also gives university teachers the role of facilitator, organiser, manager and adviser on top of the knowledge required within their domain. This, in turn, means that the professors need to acquire new skills.

Scientific information on-line

The development of ICT has also changed the traditional way scientific journals are published. In high-income countries, electronic versions of journals are distributed to university libraries, which has brought about a fundamental change in the role of librarians. It is evident that new skills were required by librarians to address these challenges.

"The Internet is absolutely vital for modern research in terms of access to information, data, communication and research networking".

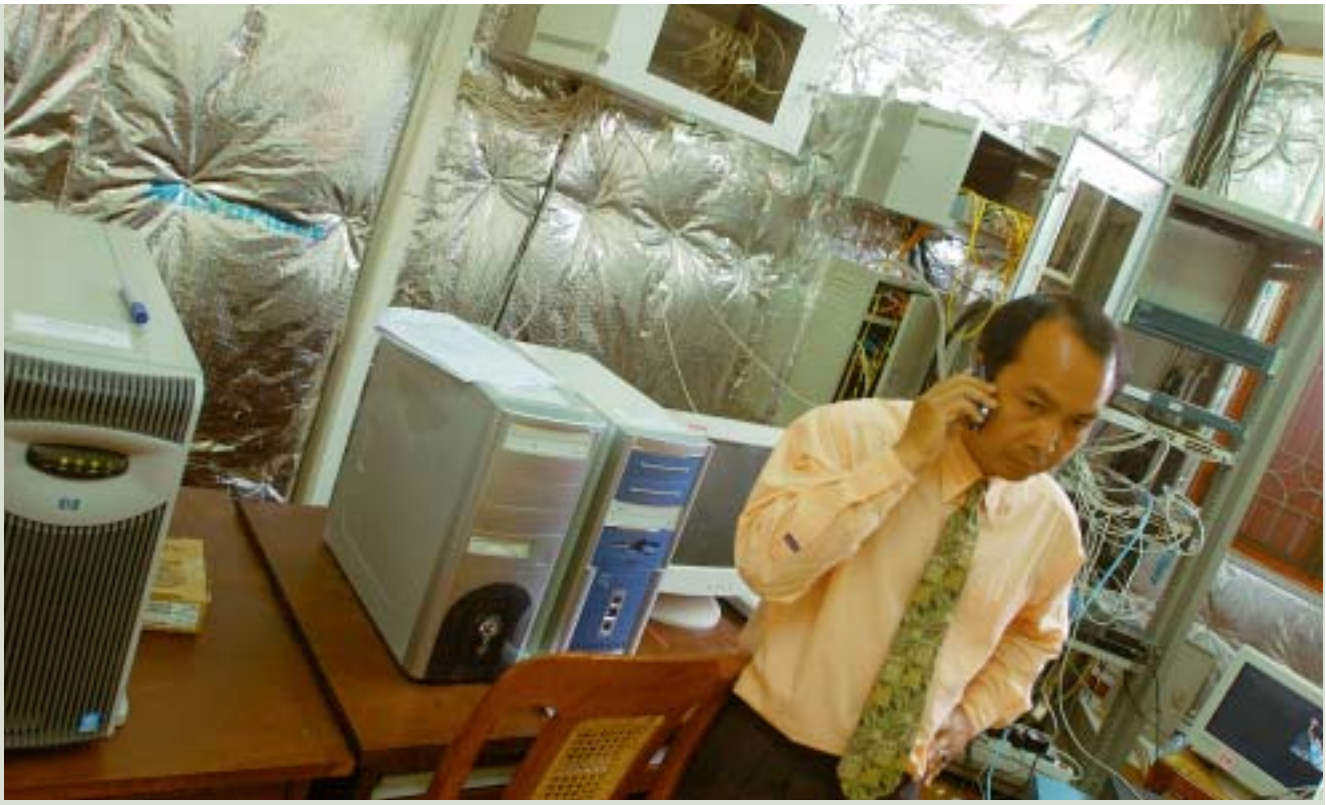
Sida supports various initiatives which address the problem of access to scientific information. One such initiative is the International Network for the Availability of Scientific Publications (INASP). Established in 1992, the INASP has provided technical assistance to libraries receiving university research support from Sida. In January 2001, the INASP launched the pilot Programme for the Enhancement of Research Information (PERI). One component is to provide access to international scientific information through databases and journals, utilising the Internet. The idea of a nationwide licence, open for use by all in the country who access the databases for research purposes, is an all encompassing initiative providing potential benefit for all scientists and not just Sida supported institutions. Country reports of number of downloaded articles show an increase during 2004, an indicator that researchers in many countries are utilising this opportunity.

Other components are strengthening international access to journals from low-income countries, for instance through African Journals OnLine (AJOL), which provides electronic visibility for journals published in Africa. Another important component is training for librarians and researchers in using the Internet in order to benefit from the programme and find other information sources. In the countries supported, the training activities have contributed to re-establishing the university library as a hub of service and know-how.

Sida anticipates that coordinating librarians from the countries will become more directly involved in the negotiation with the publishers on differential pricing. Support is given to consortia building to keep the prices of databases down. Country reports of number of research institutions/ organisations registered per country in 2004 is for Bolivia 28, Ethiopia 24, Rwanda 6, Sri Lanka 28, Tanzania 37 and Uganda 24.

Sida, in conjunction with other development agencies support the Science and Development Network (SciDev.Net) whose goal is to enhance the provision of reliable condensed information on issues related to science that impact on economic and social development. Its main activities are to operate a free access news and policy oriented website providing news, views and information on science, technology and the developing world.

Vietnam. Phone number advertisements in Hanoi.
Photo: Johan Resele.



Laos. Dr. Bounthong Vongxaya, Head of the ICT Centre at the National University of Laos. Photo: David Isaksson.

Developing the National University of Laos through ICT Cooperation

The ICT Centre at the University of Laos looks like something out of a sci-fi movie with walls clad in aluminium foil and cables and computers all over the place. If not the heart itself, the Centre is definitely one of the principal arteries of the university body (and the foil is there to reduce humidity).

Founded in 1995, the National University of Laos (NUOL) remains a young academic institution with nine faculties 2004. Sida began supporting the NUOL in 2000. Support to investments in the ICT structure was identified as a prerequisite in order to strengthen the academic capacity and the administrative structure of the university. At that period, the whole university had only a few telephone lines with dial-up Internet connection. As a first step, emergency funding was provided for hooking up to a satellite link to form a contact between the Swedish and Laotian counterparts. In 2004 the ICT Centre took part in setting up Internet connection on the campus, including a server room. The agenda for 2005 includes a wireless network, videoconference and voice over IP system.

"It was of course obvious that a lack of contact with the outside world would make it difficult for the university to develop. But ICT is not only Internet. The Mission of the ICT Centre is to provide service to the university; student qualification is the responsibility of individual faculties. The ICT cooperation with Sweden has therefore focused on the development of infrastructure and service", says Dr. Bounthong Vongxaya, head of the ICT Centre.

One example of the difficulties, and the necessity to implement ICT solutions, is student registration. All student information is still written manually and the system remains paper-based with old filing cabinets. Another problem is the provision of information to the community regarding courses and activities.

The latter is soon due to change with a new website with a content management system (CMS) that will make it possible for all institutions to publish information in both English and Lao.

Laos might be one of the world's poorest countries, but it is obvious that ICT is changing the Laotian way of life. In the capital Vientiane there is an increasing number of Internet cafés.

"Everyone knows that this is the ICT age, we must learn and make use of the technology. Young people use computers in everyday life even if they don't have computers at home. They look for information and correspond with other countries. Everywhere people speak about computerisation, we have Laotians working with ICT but not enough. Everywhere there is a need for ICT people. The problem is in financing the capacity to maintain the system. To fill the demand, the university is now starting a computer science programme", adds Bounthong Vongxaya.

It could however still be controversial to press the ICT agenda in such a rural country as Laos:

"People say how can you talk about computers when we don't even have chalks or blackboards. But we cannot wait for the countryside to come to our level; we should hurry in order to gain experience. It is not yet time to bring out computers to the countryside, but most families have CD players so CD is a good information carrier for education and capacity building. We must establish links between the technology and the local people so that they can have access to information".

Vietnam. Central Health Clinic in Bavi. Photo: Johan Resele.

RESEARCH ON FUNDAMENTAL VALUES AND SUSTAINABLE DEVELOPMENT

Tanzania. The Chalinze Health Centre. Photo: Stefan Bladh.

Human Rights, Democracy, Good Governance and Equality

Social sciences and the humanities have an important role to play in the process of achieving a more equitable and sustainable development. Research can lay the foundation for more knowledge-based policymaking to achieve social goals, something that could help countries create a development model based on their own conditions and priorities. Human rights, democracy and good governance are fundamental in this regard as is gender. Moreover, research on cultural issues such as anthropology, history, archaeology and linguistics provide a solid base to rebuild the self esteem and identity of people that are marginalised due to poverty, ethnicity, religion etc.

A report was published in 2004, which highlighted the main findings of a special research programme on Democracy and Human Rights supported by Sida since 1995. One of the research programmes was Discourses and Practices of Democracy in South East Asia. The aim was to discuss the development of Asian forms of governance and the programme concentrated on three countries, Cambodia, Malaysia and Indonesia. The Western style of democracy has been questioned in Asia and the research has provided a better understanding of this discourse. The legitimacy of non-democratic governments was clearly linked to their ability to "deliver" economic growth and development. However, the economic crises can result in higher tolerance for authoritarianism and may emerge as a global issue in the struggle for and against liberal democracy.

While scholars in low-income countries to a large extent are engaged in studies commissioned by government and agencies, funds for independent research may be sought from regional organisations. Sida supports organisations that provide grants for an independent research agenda, e.g. CLACSO, the Latin American Council of Social Sciences, CODESRIA, the Council for Development of Social Science Research in Africa, OSSREA, the Organisation for Social Science Research in Eastern and Southern Africa and APISA, Asian Political and International Studies Association. By supporting these networks Sida facilitates funding for research as well as the establishment of platforms for a dialogue and stronger links between researchers and policymakers.

Research on democracy and human rights are at the core of these organisations.

For instance, a study published by APISA in 2004 points to the dangers of decentralisation. It does not necessarily result in better services or democratisation, but may concentrate more power and resources in the hands of the local elite. Another APISA study of Malaysia and Sri Lanka suggests the need for greater democratisation and separation of power through the creation of autonomous associations, which can help to hinder political parties from exploiting ethnicity for vested

Bolivia. Victor Castro, student at the University of San Andrés in La Paz, on a field mission. Photo: Kina Robberts.

Exploring Aymaran Identity

The majority of South Americas 3.5 million Aymara speakers live in Bolivia. The cultural essence of the Aymara permeates Bolivian society: political systems, communal cooperation, economics, traditional medicine, farming, husbandry, religion and moral codes. In spite of this the Aymara language and culture have a very low status and there are still very few studies into native languages and cultures in Bolivia.

Research into the Aymara language and culture studies, has been important for a revalorisation of the Aymara culture. One important tool in this process is the Sida supported research at the University of San Andrés in La Paz. The research has led to the production of an Aymara encyclopedia.

Several Aymara-Spanish dictionaries already exist, but these are constructed as mere instruments for Aymaras to learn Spanish and not the other way around.

The Aymara encyclopedia under production is based on sound theoretical and methodological fundaments explaining the structure and function of the Ayamara language and culture to the reader. It may be used in efforts to raise the level of education and self esteem among the Aymaran population. The encyclopedia will support the ongoing Educational Reform in Bolivia, which states that intercultural and bilingual aspects must be taken into consideration in the Bolivian educational system.

Information is collected through a participatory approach, involving not only in-depth interviews but also a scientific analysis of pictures, songs, artifacts and other expressions of the Aymara culture.

"The encyclopedia will contribute to cultural development within the school curriculum. It will serve as a source of information for culture and language studies in general. It may also have a secondary importance as it can help the development of a community tourism", says project coordinator Zacarias Alavi Mamani at the University of San Andrés.

purposes. According to the author Edmund Terence Gomez "A unified, inclusive nation can only be built when political leaders begin to understand the complex transformations in identity that members of a society constantly undergo".

During 2004 the first steps where taken to establish an "Africa/Asia/Latin America Scholarly Collaborative Programme" to further facilitate for researchers in the South to carry out collaborative research and exchange research ideas and results. Through joint efforts, these organisations have a better chance of having a stronger southern voice in the international debate.

Gender equality

Research on gender issues is part of Sida's strategy for poverty alleviation. Support for gender research dates back to the mid-1980s, with project based support to a large number of researchers, often based at advocacy organisations. Support has later been channelled to universities for further research capacity building, and for mainstreaming of gender into all fields of research and education.

In Makerere University in Uganda and the University of Dar Es Salaam in Tanzania (UDSM), Sida-funded research has led to well-established programmes for gender mainstreaming awareness. Studies on sexual harassment have for instance led to the ratification of a policy to combat sexual harassment at Makerere in 2004 and a similar development at UDSM.

The research environment for women and gender studies in sub-Saharan Africa has developed considerably in recent years. Links to the women's movement are still strong, but gender studies have become a well established field of research. It has become possible to study sensitive issues, such as in-house violence, rape, sexuality and abortion. Locally based researchers are now increasingly looking at possibilities for regional cooperation.

Business Improves for Tanzanian Women

Tanzania. Commerce in Dar es Salaam. Photo: Stefan Bladh.

At the Faculty of Commerce and Management at the University of Dar es Salaam, a research programme is investigating female entrepreneurs in Tanzania and ways in which business networks can influence small and medium enterprise and micro enterprise performance. The study is performed in cooperation with Umeå School of Business & Economics. The research has been part of a staff development programme, with four completed PhDs and more on the way.

Preliminary research findings show that there are many obstacles for women in Tanzania who wish to start businesses. Women have difficulties obtaining financing for their business because they are unable to meet the loan conditions regarding security. They lack access to advice, counselling, and encouragement. Laws and regulations are mainly designed for larger businesses, not micro-enterprises like the ones women normally run. Corruption and bureaucracy make matters worse for women, who do not have the same opportunities as men to meet and negotiate with predominantly male public officials. Moreover, a general gender bias in society constrains the ability of women to forge business networks.

The faculty has provided input into the Small and Medium Enterprise Development Policy of Tanzania, created in 2003, which provides for the special needs of women in terms of business support and services such as training and credit, etc. University researchers have also provided training and counselling services to women entrepreneurs since the late 1990s.

A former staff member of the Gender Study Group at University of Dar es Salaam (UDSM) is now Minister of Community Development, Gender and Children. Laws stopping women from inheriting and owning property are now in the process of being changed, which will make it easier for women with businesses to obtain loans.

"Support to research on conflicts – their causes and dynamics, resolution and termination – is an important part of Sidas efforts to ensure sustainable security".

Sudan. Liberation Army (SLA) soldiers in Darfur. Photo: Silver photo.

Conflict management and security

Support to research on conflicts – their causes and dynamics, resolution and termination – is an important part of Sidas efforts to ensure sustainable security. This support has increased significantly during the past few years.

Confict management is a complex and difficult task. Political and economic or structural causes are entangled with culture, race, ethnicity, religion and history.

In 2004 a review was commissioned on peace and conflict studies in Sida-supported regional research organisations in Africa during the period 1997–2004. Some 100 research contributions where identified and it was observed that "whereas Northern research (on African conflicts) seeks to channel peacemaking efforts into the strengthening and restructuring of the existing structures of authority, African research proposes two important correctives to this approach. First, the reviewed research emphasises the need of first addressing the structural causes feeding and prolonging state weekness, such as poverty, unequal access and external dependence. Secondly, African research points to the necessity of exploring alternative levels of political authority and legitimacy at the local, as well as the regional level. This twofold strategy is argued to be the superior way of enhancing both human and national security in a longer perspective."

One of the African networks under review was OSSREA, the Organisation for Social Science Research in Eastern and Southern Africa. In 2004 the network organised a major international conference on African conflicts in Addis Ababa, Ethiopia, during which OSSREA addressed one of its principal goals – to create a research/policy interface between social scientists and policymakers in the region. The main objectives of the conference were to deliberate on the post-conflict situation in the region and based on the research findings propose viable means of conflict management and resolution.

Since 2001, Sida has also supported the Southeast Asian Conflict Studies Network (SEACSN). One of the network's studies looks at the role of women in conflict resolution in Cambodia. The study shows that the women's desire for conflict resolution, thereby hoping to create a better world for their children, is important for Cambodian society but not without difficulties for themselves. The women have to face major challenges – traditional, as well as social and economic.

The study shows that despite these obstacles the women are seriously involved and play roles in various areas – in networking and providing resources and information, as well as in negotiating and advising. These activities are carried out in both urban and rural areas.

Sustainable Development

Vietnam. Forest research in Bavi. Photo: Johan Resele.

Research contributes to the environmental, economic and social dimensions of sustainable development emphasised in the World Summit on Sustainable Development in Johannesburg in 2002. These are also central aspects of the Swedish policy for global development. Sustainable use of natural resources is a precondition for economic growth and crucial if developing countries are to escape poverty. It involves innovation, development of new products and adaptation of technologies. Economic policies, instutions and systems that are conducive to growth are also important. However, economic growth does not eradicate poverty by itself but needs to be combined with governmental interventions that allow for a fair distribution of resources and investment in sectors such as health, education and social security systems.

Sustainable use of natural resources and environmental protection

Skills in mathematics, physics, chemistry, biology and geology as well as mapping of natural resources are important preconditions for sustainable use and protection of these resources. Sida supports strengthening of knowledge in natural sciences through bilateral institutional cooperation and international research training and scholarship programmes. All bilateral programmes have a strong component of support to research infrastructure, laboratories, libraries and ICT facilities.

Examples of results from the bilateral cooperation are compilation and publication of the Ethiopian Flora, geological surveys in Mozambique, inventory of coastal resources in Eastern Africa, identification of medical plants as well as edible tubers with good nutritional value in Bolivia.

Sida is continuing to support the strengthening of fundamental research resources through bilateral cooperation. Strong institutional resources provide countries with a good basis from which to participate in regional and international research programmes and networks. Sida supports regional programmes within various fields, e.g. marine and coastal resources, biotechnology and biopolicy, energy technology and energy policy, climate change, forestry and farming systems.

Farming Systems Research in Laos

As a sparsely populated country with a lot of land in a rapidly expanding region, Laos has the potential to become an agro-exporting country serving neighbours like Vietnam (with a population of 80 million), Thailand and China.

Sida supports a regional research training network involving 13 universities and research institutes in Vietnam, Cambodia, Laos and Thailand. The research focuses on the role of livestock in agricultural production systems for smallholders, e.g. the recycling of livestock or agricultural waste and various aspects of the use of local fodder species. The National Agricultural and Forestry Research Institute is a partner of this research training network. Several Master and PhD students participate in the courses, held in various countries in the region.

New feeding mixes are being tested for goats, rabbits, water buffalos and other animals. The process usually involves using existing experiences of the different feeds together with methods and research adapting them to Laotian conditions.

"Our aim is to improve the feed. The tradition here is free-grazing livestock. We try to introduce what we call "cut and carry", which means that fodder is grown and brought to animals in the open. This increases the protein content in the meat", says Soukahn Keonouchani, director of the Livestock Research Center.

When it comes to breeding pigs and chickens, Vietnam is far ahead of Laos, having rapidly developed its farming industry during recent years. However, Soukahn Keonouchani sees a long-term potential for growth in Laos, in particular the breeding of goats and water buffalos for export. The training of farmers is however crucial in achieving this. One key area is reaching the farmers and promoting new ways of feeding the cattle developed in local research.

Soukahn Keonouchani explains:

"We are trying to change the old slash and burn methods. Instead of growing rice in the uplands where the land can only produce 1.5–2 tons per hectare compared to 3–5 tons in the lowlands, we try to convince the farmers to raise more animals for sale and to produce cash crops like soybeans. With the money they could buy rice and other necessities. However, this process takes time. But if farmers can see the results for themselves it will be easier for them to change and to embrace the new ideas. For example, the price of buffalos is very high with many buyers coming from Vietnam. The money you get for one buffalo is more than enough to buy a Chinese motorbike. By showing them that example they realise that changing methods can actually improve their way of life."

Laos. A student at the Livestock Research Center. Photo: David Isaksson.

Uganda. Lake Victoria Research Programme, Massese fishing village, Jinja. Photo: Mats Widén.

Jointly exploring marine and coastal resources

Research groups along the coast of Eastern Africa have taken the initiative to cooperate in order to explore sustainable use of the marine and coastal resources. Managing water resources is essential for the survival of all species including humankind. Population growth in coastal zones, the expansion of land-based activities, such as tourism, and increased pollution from industries and agriculture has put enormous pressure on resources and sensitive ecosystems in the coastal areas. The marine environment is showing clear signs of degradation with a decline in coastal resources and marine biodiversity. This is particularly noticeable in the Western Indian Ocean region underlining the need for regional cooperation, multi-disciplinary research, comprehensive policies and management systems. Sida supports a marine science programme coordinated by the Western Indian Ocean Marine Science Association (WIOMSA). One result of the research programme is that the connection between environment, poverty and development is better understood. This has led to improved conditions for coral reefs, reduced fishing with dynamite and extensive replantings of mangrove.

Coral reefs provide food and income for many people in developing countries. A special programme, Coral Degradation in the Indian Ocean, (CORDIO) was set up to monitor and analyse the recovery after the catastrophic mass bleaching and death of corals in 1998.

Research on reef use patterns, available reef resources, and best practices for the development of value added products, formed the basis for subsequent alternative livelihood projects in some coastal villages in Tuticorin, India. Today hundreds of people have improved their living conditions through these projects and governmental agencies are showing great interest in expanding the programme to other areas.

Lake Victoria – a shared resource

Another way of working regionally is the Lake Victoria Research initiative in East Africa, which brings together research groups from the surrounding countries. Lake Victoria provides a livelihood for around 30 million people, but problems in the shape of overpopulation and overfishing are increasing. The lake is also threatened by overfertilisation due to effluents and badly functioning treatment plants. VicRes, the Lake Victoria Research Initiative, coordinated by the Inter University Council for East Africa (IUCEA), has been established with the aim of

"Lake Victoria provides a livelihood for around 30 million people, but problems in the shape of overpopulation and overfishing are increasing".

Tanzania. The Institute of Marine Sciences (IMS), Zanzibar. Photo: Stefan Bladh.

Mariculture in Zanzibar

The demand for fish on the island of Zanzibar is greater than the supply. The fishermen's boats are too small to go far out, which means that the waters surrounding the island are being overfished. At the Institute of Marine Sciences (IMS), located in Zanzibar and part of the University of Dar es Salaam, researchers have developed methods to farm fish, shellfish and seaweed in an ecologically sustainable manner. This is a way for them to contribute to Tanzania's food security programme and to poverty alleviation.

For many years poor women have collected shellfish at low tide along the coasts of Zanzibar. They pick both big and small shells, and sometimes there are no shellfish to be found.

"We looked for new markets for produce from the sea. Through a survey, we found that hotels were willing to add shellfish to their restaurant menus provided that they could be assured to get deliveries every day. We saw this as a possibility for women to do business." Dr. Flower Msuya is a researcher at IMS and she proudly explains that the institute has offered courses about how to make wooden enclosures in the water where the women can leave the smallest shellfish and let them grow. "This makes harvesting easier and assures a regular supply at the same time as it prevents overfishing in the areas near shore waters."

Flower Msuya drives us through the lush and beautiful island, on small bumpy roads, to Makoba on the northwest coast where IMS develops and tests new methods for milk fish cultivation.

"With an increasing population and demand for food, mariculture is one of the potential areas for more production of proteins", she explains.

The fish ponds are constantly provided with sea water through a system of channels. Fingerlings of milk fish are caught in the mangrove areas and put in a first row of ponds to grow. The next row of ponds contain shellfish in cages fastened to poles. They live off the surplus food that gets washed away from the fish ponds thereby cleaning the water of organic matter. A third row of ponds and some nets on the water's way back to sea contain a sea weed that thrives on nutrients which are produced by the milk fish and the shellfish. Without this biofilter the fish farm would have been a serious polluter of the sea. The sea weed becomes very rich in protein and the last step is to use the sea weed to produce the fish feed.

"We have created this integrated system as a model for fish farming and people come from all around Tanzania, Africa and even from other continents to study it. We invite people from the villages to workshops, and the first fish and shellfish farms by local communities have already started in Zanzibar as well as mainland Tanzania. This is an opportunity that seems to interest young people", explains Dr. Flower Msuya.

Flower Msuya's own field of research concerns two kinds of seaweed from which the Carrageenan gel is produced. The gel is used for beauty products, shampoo, toothpaste and ice cream etc. The seaweed accounts for about 30 per cent of Zanzibar's exports. Flower Msuya is experimenting with seasonal variations of various physical chemical parameters to see what conditions give the highest seaweed growth, gel quantity and quality.

Orange Sweet Potatoes Save Lives

"Up to 60,000 children die every year of diseases related to vitamin A deficiency," says Dr. Mwanga who works on the Sweet Potato Programme at the Namulonge Agricultural and Animal Production Research Institute NAARI, located outside the Ugandan capital Kampala. The aim of the initiative is to provide new, orange-fleshed sweet potato varieties which are rich in beta-carotene, a nutrient the body uses to produce vitamin A.

"If the orange-fleshed sweet potato substituted the white-fleshed sweet-potato types on a wide scale, the vitamin A deficiency could be reduced to almost zero," says Dr. Mwanga.

Up to 90 per cent of the Ugandan population consume sweet potato as their primary or secondary food. "To get their supplement of vitamin A, children would need to eat only 40 grammes of the dark orange-fleshed sweet-potato a day," says Dr. Mwanga waving his arms as to emphasise the importance of his work.

It is easy to understand his enthusiasm. The lack of Vitamin A weakens the immune system, making people more vulnerable to deadly diseases such as measles, malaria, and diarrhoea. In sub-Saharan Africa, around 3 million children under the age of five suffer from a vitamin A-related form of blindness known as xerophthalmia, or dry eye and other serious diseases. Children below the age of 6 and pregnant and breast-feeding mothers are most vulnerable to vitamin A deficiency.

Among others the Sweet Potato Initiative at NAARI is funded through CIP, the International Potato Center (known worldwide by its Spanish acronym CIP). CIP is one of the institutes within the CGIAR, the Consultative Group on International Agricultural Research.

The Sweet Potato Initiative is an example of many years' research in areas like plant breeding, plant husbandry, nutrition, economics, social aspects etc. It is also an example on how long term research planning can have an impact on poverty reduction.

Dr. Robert Mwanga, who has researched on sweet potato since 1978, shows different samples of the potato. "As the colour intensifies from white to orange the higher is the amount of beta-carotene," he explains. Current emphasis on sweet potato research is to improve nutrition through increasing the beta-carotene content of the roots and, also, to promote the orange-fleshed sweet potato among communities in Uganda.

By 2004, an estimated two million Ugandans were eating the new varieties of sweet potato. The VITAA Project won the prestigious CGIAR Partnership Award during the 2003 CGIAR Annual General Meeting held in Nairobi, Kenya.

Uganda. Doctor Robert Mwanga, the Sweet Potato Programme at NAARI. Photo: Mats Widén.

A Strong Cup of Coffee

Professor Le Thi Anh Hong relaxes with a cup of coffee, one of five she normally drinks every day. The Agricultural Genetic and Biotechnology Institute is situated in a beautiful old building on the outskirts of Hanoi. Here, the development of the Vietnamese coffee industry is taking place, with Mme Hong as the responsible professor.

Vietnam has a long tradition of both drinking and growing coffee. The type grown is mostly Robusta, a coffee often grown in western Africa which can also be cultivated on lowlands in hot climates. Robusta is considered lower quality than Arabica and fetches a lower price on the world market.

During the past ten years, Vietnam has become a major coffee exporter on the world market. Robusta coffee is widely used in instant coffee products. The total area of cultivation is approximately 500,000 acres and Vietnam has become one of the largest coffee producers on the world market.

But increased production also puts a strain on the environment. In 2000 a plant diseases control project began in cooperation between the Agricultural Genetic and Biotechnology Institute in Vietnam and SLU in Sweden. The aim of the project was to strengthen the capacity for national plant pathology research in Vietnam, be of relevance to crop improvement programmes and cater for testing bacterial, fungal and viral resistance and for controlling planting material.

In 2004, the non-chemical control of coffee production project began in cooperation with the Department of Crop Science at the Swedish University of Agricultural Sciences in Alnarp. Through Swedish support, Vietnam aims to develop the production of eco-coffee, which fetches a much higher price on the world market.

"In order to develop a high quality coffee and a sustainable coffee production we need good management and a better understanding of fungus infections and other diseases. Step by step we aim to reduce the use of chemicals in order to replace it with organic fertilisers", says Professor Le Thi Anh Hong.

But why would coffee growers in Vietnam want to cooperate with Sweden, a country where coffee is not cultivated?

"Sweden has a long experience of studying tropical diseases. In Alnarp, our students are given a great deal of support and attention. When they return from Sweden they are more dynamic and active, and can work in a more independent way".

Vietnam. Professor Le Thi Anh Hong. Photo: David Isaksson.

encouraging regional and multidisciplinary research that will provide practical solutions to poverty and environmental degradation in the Lake Victoria Basin. Universities in Tanzania, Kenya and Uganda are participating in the programme in which VicRes acts as a research council. The research covers a range of disciplines from pollution, fish farming and medicinal plants to gender and socio-economic issues.

Research findings will be taken to political and other decision-making levels. One of the aims is to draw up guidelines for sustainable utilisation of the lake, such as how fish-breeding can increase income without having a negative effect on the water, how to improve the possibilities for the poor fishing community and the measures required to reduce discharges. It also involves reducing the wear and tear on Lake Victoria's wetlands.

One important research project, presented at the 2004 annual meeting for VicRes in Uganda, is aiming to overcome the costly and labour intensive obstacle of egg production when farming catfish. The catfish (*Clarias spp.*) is highly appreciated as food for the population around Lake Victoria. It is fast growing and has modest demands for food and space when kept in captivity. A major problem for farming, though, is that fertilisation must be made artificially. Females in captivity do not produce the necessary spawning hormone, which has to be extracted from the wild population and then injected into mature females to produce eggs for the farms.

The research is made along two lines – to find out what natural stimuli is needed to induce spawning, and to develop methods to mass produce the hormone.

The two-day annual meeting for VicRes in Uganda gathered about 130 participants. These represented a majority of projects funded by VicRes, several East African universities,

national research councils and the East African Community.

Linking with international research

Sida promotes links between national research and the Consultative Group for International Agricultural Research (CGIAR) which is the most important of the international research organisations in the field of natural resources. Swedish support through CGIAR dates back to 1973 and the association is co-sponsored by FAO, The World Bank, IFAD and UNDP.

Its 15 specialised institutes keep an overview of international research in their respective field, and identify and conduct research in neglected research areas of key relevance to poverty reduction. The traditional orientation of the research conducted by the CGIAR and its partners focuses on improving the critical components of the agricultural sector including agroforestry, biodiversity, food, forage and tree crops, pro-environment farm technologies, fisheries, forestry, livestock, food policy and agricultural research services. Increasingly, research is also addressing economic conditions and driving factors for production, as well as sustainable development in society as a whole. A major challenge for the new Science Council established in 2004 will be to balance and set overall research priorities for the CGIAR system, envisioning that donors will be directing 80–90 per cent as core funding on the agreed-upon system priorities.

Economic growth

In industrial countries, the role of research in relation to social progress and economic growth is well recognised. In developing countries, governments are currently showing an increased interest in science and technology. Investments will have a clear direction at innovation as a means of reducing poverty. Research within natural sciences and technology has the potential for producing commercially interesting results as shown by the following examples. In Uganda, clay minerals have been found to be suitable for manufacturing high quality fireclay refractories, in Tanzania different types of biocomposites are produced from local raw material, in Mozambique, research on the utilisation of tropical wood may improve and diversify the country's manufacturing industry. Chemical and biotechnological research is supported by Sida in several cooperating countries. This has resulted in the identification of and production of compounds of medical, agricultural and environmental interest.

Vietnam. Coffee farmer in Bavi. Photo: Johan Resele.

"Research within natural sciences and technology has the potential for producing commercially interesting results".

Innovation strategies

A term that is used diligently is "innovation", in particular in an attempt to intensify cooperation between universities, authorities, politicians and the private sector in order to convert research into practical solutions.

One of the challenges for cooperating countries is in building a national capacity to modernise innovation structures and policies. Research councils and universities have central roles, as do the private sector and authorities.

In order to establish a dialogue with cooperating countries concerning innovation, Sida has supported seminars and workshops with researchers, politicians and representatives of the industrial sector in Eastern Africa and in Bolivia, Nicaragua and Honduras. The main purpose of the workshops has been to stimulate awareness, cooperation and debate on the role of clusters in the development of innovations.

Engineering sciences, technological skills and analytical capacity are required for direct and indirect ways of combating poverty. It is therefore important for low-income countries to reinforce their capacity in finding their own niche for product development. Research may lead the way to production suitable for local conditions, as well as for export. A significant extension of the Sida support to strengthening research capacity at three faculties in Eastern and Southern Africa (Makerere University in Uganda, University Eduardo Mondlane in Mozambique and the University of Dar es Salaam in Tanzania) was approved in 2004. This will focus on technology given national priority within the countries, i.e. environmentally friendly technology for sustainable utilisation of natural resources, development of rural and urban infrastructure, renewable energy and energy systems and development of ICT.

Decreasing dependency on fossil fuels

Renewable Energy Technologies in Asia, RETS, is a regional programme aimed at decreasing energy-poor countries' dependency on fossil fuels. The programme has been carried out in three phases during 1996–2004 through a research network of AIT with 13 national research institutes from six Asian countries.

Activities carried out by the participating institutions include development of solar and solar-biomass hybrid dryers, micro-utility systems, briquette stoves and gasifiers, all designed and adapted to the local conditions. Adaptive research has helped reduce imported items and enhanced capacity of the institutions to design, fabricate and commission systems.

These cleaner technologies have contributed to pollution reduction by replacing the use of fossil fuel for lighting and fuel wood for cooking. They have also contributed to increasing small business income. As an example, entrepreneurs can earn their living by producing and selling briquettes. The programme's awareness

"Engineering sciences, technological skills and analytical capacity are required for direct and indirect ways of combating poverty".

Tanzania. University of Dar es Salaam, The prospective College of Engineering (pCET). Photo: Stefan Bladh.

Tanzania. Seaweed in Zanzibar. Photo: Stefan Bladh.

and demonstration programmes coupled with seminars and workshops have highlighted the feasibility of renewable energy technologies among users, policy personnel, entrepreneurs and the general public. In Bangladesh, as an example, taxes on the import of solar modules have been exempted and issues of RETS are being included in the National Energy Policy.

The overall impact of the programme can be summarised as awareness of renewable energy technologies among rural people, improved standard of living with opportunity for income generation and less environmental pollution. As a concluding activity in October 2004 a regional Renewable Energy Technology Transfer Workshop was organised in order to transfer the technologies and accessories developed by the programme to interested entrepreneurs, institutes and organisations of developing countries. Seventy participants from 18 Asian and African countries attended the workshop. It included presentations on the technologies developed, demonstration of the technology packages and accessories, hands-on training sessions, and a discussion forum for further promotion of the technologies packages.

"Understanding the process of economic growth and its determinants is of great importance in designing economic policies, institutions and systems".

Growth strategies and economics

Governments need to create conditions that are favourable for economic growth if there should be any chance of poverty elimination. A sound business climate needs to be created to promote the establishment of companies. Governments also need to be well informed about the best ways of utilising and protecting natural resources from an economic point of view. This calls for strong analytical capacity and research with a base in the local context.

The African Economic Research Consortium (AERC), an African research and training organisation, has received Sida funding for over a decade. Its research focuses on macroeconomics, growth studies, poverty and the African economics in a global context. In 2004 AERC had 21 member universities in 16 countries, and provided formal training on an MSc and PhD level.

The second phase of one thematic research project, "Poverty, Income distribution and Labour Market Issues in Sub Saharan Africa", was launched in 2004. Findings from its first phase has been used by policymakers in their elaboration of poverty reduction strategies. Another example is AERC's research project "African Imperatives in the New World Trade Order". The project provides knowledge and insight which is used when African governments in various constellations negotiate trade agreements with the EU and the USA, which can result in increased exports and improved conditions for foreign trade.

The political economy of growth which takes into account institutional, political and governance aspects as important determinants of growth has received increased interest. Understanding the process of economic growth and its determinants is of great importance in designing economic policies, institutions and systems which are conducive to growth and create conditions for sustainable eradication of poverty. The AERC research project "Explaining African Economic Growth" involves some 30 African countries. One consistent result emerging from the project is the key role of reforms and political stability as major determinants of economic growth. Market-based reforms and improvements in public sector management provided a strong basis for renewed growth among African countries that established or maintained political stability during the turbulent 1990s. Where reforms or political stability failed, however, so did growth. Creating a political economy of sustained growth therefore represents a critical input to achieving poverty reduction and long-run development in Africa.

India. Drinking water tap in New Delhi. Photo: Silver photo.

Safe Drinking Water Practices

The demand for potable water and sanitation is often presumed to be low in developing countries due to poverty. But is poverty the only reason for the low demand on environmental quality or is it also lack of adequate information about environmental hazards?

A study from 2004 by The South Asian Network for Development and Environmental Economics, SANDEE, demonstrates that the demand for clean water and consequent adoption of safe drinking water practices is as strongly dependent on awareness and education as on wealth. The authors Jyotsna Jalan, E. Somanathan and Saraswata Choudhuri of the Indian Statistical Institute examine the determinants of clean drinking water practices by using a national data set up from urban India.

Contaminated drinking water is a major health hazard in developing countries. In India alone, there are more than a million child deaths per year as a result of waterborne diseases such as diarrhoea (Parikh, 1999). The WHO estimates that universal availability of piped and regulated drinking water would result in a reduction of some 7.6 billion diarrhoea cases annually. However this type of infrastructural intervention is unlikely to expand rapidly in the short-term. A substitute short-term solution is disinfection at point of use, such as boiling water or straining contaminants.

Household specific interventions can have a large health impact, the SANDEE study reveals. The authors state that providing poor people with information about problems associated with dirty water can prevent health hazards such as diarrhoea and other waterborne diseases.

In their study the authors examine different sources of awareness – formal schooling, exposure to massmedia and occurance of diarrhoeal diseaeses. According to the authors, educational attainment and wealth both significantly increase the likelihood of households adopting safe drinking water practises. The study also reveals that listening to the radio and reading the newspaper raise awareness of purification techniques. The authors state that if a female adult household member reads a newspaper at least once a week, the likelihood of adopting safe drinking water practices incresases by some 8 per cent. A prior bad health experience, from diarrhoea for example, also raises the probability of households boiling their drinking water by about 5 percentage points.

From a policy perspective it is important to understand how much people are willing to pay for purification technologies. In their study the authors estimate this willingness using data from a sub-sample of households from Delhi. They estimate that the average person in Delhi is willing to pay approximately 25 rupees per month to ensure that drinking water is clean.

One of the conclusions in the study is that awareness campaigns about clean water should be increasingly used as tools for public health interventions. The authors also state that media can play a powerful role in sensitising people to health hazards from unsafe drinking water. However the authors underline that these strategies do not negate the need for an increased supply of regulated pipe water. Every possible policy to make water safe needs to be considered and adopted.

Based on SANDEE working paper entitled "Awareness and the Demand for Environmental Quality: Drinking Water in Urban India" by Jyotsna Jalan, E. Somanathan and Saraswata Choudhuri.

Environmental economics

Economic growth is often based on the use of land and natural resources. However, utilisation of these resources needs to be planned and based on efficiency and sustainability criteria. South Asian Network for Development and Environmental Economics (SANDEE) and Environmental Economics and Policy in South East Asia (EEPSEA) are two research networks focusing on policy relevant environmental economics research. One project in Cambodia studied chemical contamination of vegetables grown in Phnom Penh. The researcher came to the conclusion that the most cost effective and feasible solution to this problem is to re-locate farmers who are currently cultivating polluted wetlands and to set up an irrigation system for their new fields that would use treated household water. Another study focuses on wastewater management in industrial estates in Vietnam and shows that many industries have not invested in wastewater treatment and fall short of necessary compliance. It then makes recommendations on how to handle the situation: tightened pollution monitoring and assessment, stricter legislation and stiffer penalties.

Social development

Social development is both a goal in itself and a necessary condition for achieving success in other policy areas like human rights, democracy, gender equality, sustainable utilisation of natural resources and sustainable economic growth. Therefore, research on the social aspects of development is essential to understand the context, constraints and opportunities for socio-economic transformation and for designing an appropriate development strategy. Research findings published by the UN Research Institute for Social Development, UNRISD, in 2004 "Social Policy in a development context" addresses broad issues of social policy and draws lessons from an extensive survey of theoretical work and country experiences. It argues for a strong link between the economic and social dimensions of development and emphasises the importance of context specific analysis in the design of appropriate developing policy. It also argues for the necessity of diverse strands of analysis and approaches to issues of development and stresses "the fundamental values of social inclusion, equity, human rights and widening of human capabilities". The main conclusion is that social policy and economic policy should be designed simultaneously and in a holistic way, and that social policy should not be seen as providing a safety-net from the negative consequences of macroeconomic policies.

Sri Lanka. Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo. Photo: Stefan Bladh.

Health

The global health research gap has widened into a chasm, separating developed countries from developing nations. This is often known as the "10/90 gap" – in reference to the estimate made in 1990 that less than 10 per cent of global health research resources were being applied to 90 per cent of the world's health problems. At the Ministerial Summit on Health Research in November 2004 the exercise of political commitment was seen as the necessary prerequisite to ensure the implementation of a health research agenda required to support the achievements of the Millennium Development Goals.

The Statement from the meeting highlights, among other things, the need for more research on the determinants of child and maternal health as well as greater attention to sexual and reproductive health. Additionally, it includes the need for more research in biomedical and social sciences, and research into providing access to health systems and services, and their increased utilisation.

To provide the resources necessary for essential research within developing countries, the governments of these countries were urged to spend at least 2 per cent of their national health expenditures on health research.

HIV/AIDS – a global threat

AIDS is no longer just a health problem. In Africa, above all, the pandemic has become the biggest threat against development and growth. Sida has therefore intensified its efforts in combating the HIV/AIDS pandemic throughout 2004. HIV/AIDS is now in focus for all development cooperation initiatives involving the worst hit countries. SAREC began supporting HIV/AIDS research not long after the virus was first identified just over 20 years ago. Since then special research programmes have evolved under the supervision of an international group of scientific experts. Research projects receiving support within the programme include vaccine development and the study of disease transmission from mother to child.

In October 2004, Sida invited researchers and HIV/AIDS experts to a symposium to determine how far HIV/AIDS biomedical research had come and where it was heading. The symposium was arranged in cooperation with the Royal Swedish Academy of Sciences and the Swedish Research Council and was attended by researchers, experts and politicians.

The debate focused on the possibilities of producing a vaccine against the disease. Many agreed that while it was unlikely that any future vaccine would provide 100 per cent protection,

"Aids is no longer just a health problem. In Africa, above all, the pandemic has become the biggest threat against development and growth".

Vietnam. Information Campaign on HIV/AIDS. Photo: Johan Resele.

Nicaragua. Reyna Vargas Salazar at Centro de Investigación en Demografía y Salud. Photo: Kina Robberts.

Researching and Reducing Poverty

The CIDS programme in Nicaragua is one very visible example of how research can play an active role in poverty reduction and at the same time produce a – for the country – very valuable research material.

CIDS (Centro de Investigación en Demografía y Salud) is a multidisciplinary health and demography research centre at the University of León in Nicaragua. CIDS has been building up a database since 1993 consisting of health information from around 70,000 people in the city and 30,000 from a rural area. Three to four times a year investigators have been asking questions about the number of children, deaths and births in the family and health situation for each family member. Many important indicators such as domestic violence, suicidal rates, birth rates etc. are included. The system includes a mapping, household by household, on a number of indicators. Many of the indicators are useful for other researchers as well as for local authorities, for example the number of latrines in a community. The result is a goldmine of information, ready to be studied also by researchers in other fields.

"Through the programme we have seen many examples of how small improvements benefit the health situation. One example is that children are not dying in areas where all households have access to clean water," says Elmer Zelaya Blandón, PhD and researcher at CIDS.

Since the outset, researchers have been working closely with the communities where the research is taking place. All contacts in the areas are first discussed with local leaders. As data and findings are reported back, the community people are able to discuss and find solutions for their problems. One such example were the figures on domestic violence, that led to a discussion on violence and its causes in the community and made people act against the violence.

Reyna Vargas Salazar belongs to the demographic surveillance project's field team. For a number of years she has regularly returned, asking questions about the situation in the household. This day she is visiting the households in the poor outskirts of the city of León, just beside a small creek that often overflows. Most households here are living informally, without title to the land. Some of the houses are just shacks, others a little bit better.

One of the daughters in the family visited is pregnant. She is not much more than 20 but this is her third child. Reyna asks about her health situation. Has the mother to be been to the clinic? If not, why? Besides collecting data the investigators sometimes give advice and encourage people to make use of the health services provided.

Gabriela Mercedes Lopez Santana is a 23–year-old mother of one. The household has access to clean water, which is one reason why she believes that her child has not been sick so often.

"They are asking how the children are, if they have any illnesses and other things. They also tell us what we can do, when we should go to the doctor and so on. I think it's very good that they come here and ask questions", she says.

60 per cent would nevertheless be a great help in the fight against the pandemic. Opinions varied as to when some form of vaccine would be available.

The long-term investments in capacity building at Muhimbili University College for Health Sciences, Dar es Salaam, Tanzania have resulted in a group of researchers within several diciplines which are ready to participate in collaborative research teams.

Vaccine trials are planned for Africa and developed for the virus strains that exist there. The trials start out in Sweden where the reactions of 40 injected volunteers are registered for nine months. The first phase investigates the effects of the vaccine on the volunteers, not its protection against infection. The trials will then take place in Tanzania – hopefully at the end of next year.

"We are now building capacity in all aspects in Tanzania in, for instance, laboratories", explains Eric Sandström, professor in venereology at Stockholm Söder Hospital, and research leader of the vaccine trial HIVIS. "Our philosophy, which we share with Sida, is that everything can be done locally. We are also building clinics and our first volunteers have been recruited from within the Tanzanian police force."

Vaccine is not the only solution to the HIV/AIDS enigma; greater knowledge is required of the virus and there is a need to test new ways of designing the vaccine. Increased support to HIV/AIDS research is needed and Sida announced a new call for proposals in November 2004 directed at a new generation of HIV/AIDS researchers. Younger researchers and new research teams are prioritised.

Environmental medicine

Sida has supported the Centre for Health and Population Research (ICCDR,B) in Bangladesh, since 1981. The centre specialises in child health. According to WHO, acute diarrhoea-related illnesses rank as the third most common cause of child mortality in developing countries. Sida supports projects aimed at acquiring knowledge of the common bacterial pathogenic microorganisms that causes diarrhoea, Shigella, Vibrio cholera and Escherichia coli, and to develop vaccines to prevent the illnesses.

One of the centre's latest projects studies the effects of arsenic in the groundwater on foetus growth and birth weight. Since arsenic was discovered in the ground water in Bangladesh in 1993, 60–70 per cent of all wells are thought to be contaminated with arsenic at levels over the local limits. This means that around 30 million people in Bangladesh are chronically exposed to arsenic.

Little is known about the effects of arsenic in drinking water on human reproductive outcome and the possible aggravating role of malnutrition. Understanding the role of nutrition in the toxicity of arsenic provides a rationale for intensifying ongoing supplementation programmes.

The research has been nested into an ongoing food and micronutrient supplementation trial involving around 4,500 women. Skin lesions, skin cancer, diabetes and hypertension have already been associated with arsenic exposure in Bangladesh. Experimental studies have shown that high doses of arsenic induce severe malformations in the foetus. Arsenic is also toxic for the ovaries.

Demographic surveillance sites

Many developing countries do not have National Demographic Registers. The lack of appropriate registers and data relating to nativity, mortality and the health situation of many low-income countries results in decisions and policies founded on unreal and often wrong premises.

To address this, individual health ministries and donor agencies have invested in Demographic Surveillance Sites (DSS) in a number of countries. In 1998 these sites established an inter-

"Individual health ministries and donor agencies have invested in Demographic Surveillance Sites (DSS) in a number of countries".

national network, INDEPTH. The network currently consists of 31 field sites in 17 developing countries that collectively monitor over 1.8 million people at household level. The vision is to provide a better, empirical understanding of health and social issues, and to apply this understanding to alleviate the most severe health and social deterioration. Several sites in the network are supported within Sidas bilateral research capacity building efforts.

Research in low-income countries has traditionally focused on infectious diseases and child health. Statistics on adult morbidity and mortality are practically unavailable in most settings. The impact of HIV/AIDS and the increasing emergence of incidence of non communicable diseases makes it pertinent to monitor adult health.

During 2004 INDEPTH published Model Life Tables for sub-Saharan Africa. Model life tables provide ways of deriving accurate mortality schedules or predicting future trends from scanty data. In settings where accurate data are unavailable, these provide invaluable tools for estimating mortality conditions among populations epict the different patterns of age-specific risks of death in the populations covered. The book presents model life tables for Africa using accurate empirical data from 19 INDEPTH demographic surveillance system sites throughout sub-Saharan Africa. A modified Brass logic system is used to produce mortality models that are unique in that they, for the first time, incorporate empirical and accurate data representing prevailing mortality patterns in sub-Saharan Africa, taking into account the effect of the HIV/AIDS epidemic.

In the light of the growing demand to test drugs and vaccines for the many public health diseases in Africa and Asia, INDEPTH launched the Health Intervention Trials Platform in 2004. The network is initially focusing on the four diseases malaria, HIV/AIDS, TB and rotavirus.

"Experimental studies have managed to change the genetic code in a species of malaria mosquito so that it can no longer transmit the malaria parasite".

WHO shows the connection between health and development

Sexual and reproductive health is an area of urgent concern. In addition, maternal health is one of the UN Millennium Development Goals. A high level of ill health and mortality among mothers and children in connection with pregnancy and childbirth has attracted considerable attention. This also applies to the exposure of young people to sexual abuse and prostitution. WHO's Human Reproductive Programme (HRP) focuses on these issues and Sida has financed the programme since it began in 1972.

Via WHO, Sida also supports the Tropical Disease Research Programme (TDR). The increased focus on malaria research was largely due to the WHO Roll Back Malaria Initiative and the Multilateral Initiative on Malaria (MIM). The vital breakthrough for malaria research in determining the entire genetic code of the malaria mosquito in 2002, has resulted in new lines of research. The aim is to exploit the information coming from genome sequencing activities on insect disease vectors. TDR has during 2004 been facilitating the development of a network of research training centres for functional genomics in Africa, Asia, and Latin America. This will open the way for promising young scientists in disease endemic countries to learn the skills necessary for using genome data, and for developing partnerships to produce more effective tools to interrupt disease transmission.

In addition, experimental studies have managed to change the genetic code in a species of malaria mosquito so that it can no longer transmit the malaria parasite. Several promising drug candidates have been developed for e.g African sleeping sickness. Several clinical trials have with positive results been carried out to study the effects of a combination treatment involving malaria, schistosomiasis, leprosy and tuberculosis.

Tanzania. The Chalinze Health Centre, Bagamoyo District. Photo: Stefan Bladh.

Malaria Treatment Closer to Households

Asha Hasani is lying in her mother's arms, too tired to speak or move. She is two years old and for two days she has run a high fever and has been vomiting and coughing.

The laboratory assistant has taken a blood sample from her finger to see if she is suffering from malaria, but Dr. Billy Ngasala, a PhD student from the Muhimbili University College of Health Sciences (MUCHS) in Dar es Salaam, says that malaria treatment must start right away. "Otherwise she might not survive the day".

Asha´s mother has taken her daughter to the Chalinze Health Centre in the Bagamoyo District around 80km from Dar es Salaam. The centre is included in MUCHS' programme to improve malaria case management in under fives. This means that the little girl will receive treatment for free. Around 70 women and children are waiting to see the medical staff this morning – many of them have fever.

Through the project all the health workers in the Bagamoyo and Kibaha districts have been educated about malaria and have received manuals for treatment. However, every fever is not malaria. Research at MUCHS has shown that the best diagnosis is done with the help of a microscope, which makes it easy to see if there are parasites in the blood. Six health centres have been provided with microscopes. Treatment without a proper diagnosis increases the risk of quickly making the parasites resistant, and should be avoided.

"Malaria is widespread in Africa because of the climate and because of poverty. The parasite is here to stay, the climate suits it well and poor people cannot afford to take preventive measures or to buy medicine", explains Amos Massele, Professor of Pharmacology at MUCHS.

"Eighty percent of the population of Tanzania lives in rural areas and the majority of them live on less than a dollar a day. They do not have enough to eat and can of course not afford to buy mosquito nets and mosquito repellents. New more expensive drugs have to be introduced as the parasite becomes immune to the old ones. This is not sustainable."

Professor Massele coordinates the Malaria Case Management Programme supported by SAREC since 1995. MUCHS works together with Huddinge University Hospital and the Karolinska Institute in Sweden.

Malaria is the illness which takes most lives in Africa today. Surprisingly, many do not recognise the symptoms as malaria:

"In some of the rural areas, where this study was conducted, there is a belief that malaria fever accompanied by convulsions in children under five is caused by witchcraft. The patient is taken to a traditional healer. It is only when this treatment does not work that they go to a hospital – but by then it is often too late to save the patient."

The next step is to bring diagnosis and treatment closer to the households through local health workers. The researchers at MUCHS are now working on a 'Rapid Diagnostic Test'; a simple and accurate way to determine malaria infection which does not require a microscope.

"Our aim is to reduce mortality through better diagnoses. It is sad to see children dying from malaria. Research projects should help the community – that is definitely the case with this one", says Professor Amos Massele.

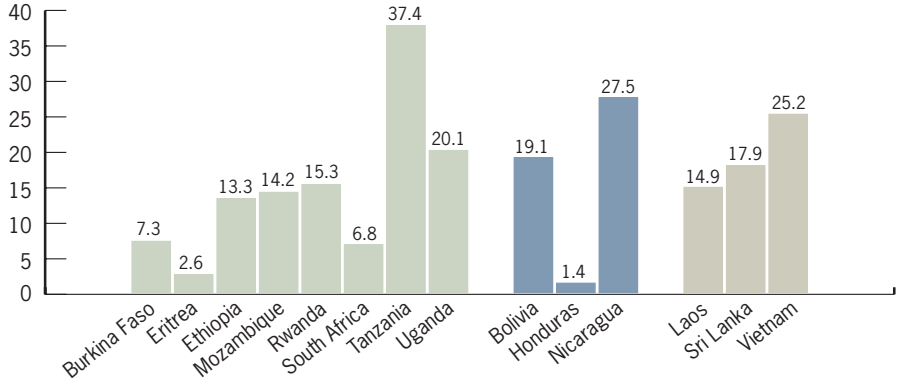
Tanzania. Photo: Stefan Bladh.

Nicaragua. The CIDS programme (Centro de Investigación en Demografía y Salud), the University of León. Photo: Kina Robberts.


FACTS

The Bilateral Research Cooperation

Bilateral programme disbursements 2004 by country:
Total bilateral disbursements SEK 223.2 million.




Burkina Faso. Photo: David Isaksson.

Burkina Faso

Sida commitment for current agreement period 2004–2008: SEK 66 million.
Disbursed 2004: SEK 7.3 million.

Burkinabée institutions:
OU – University of Ouagadougou
UPB – Polytechnic University of Bobo-Dioulasso
CNRST – Central National Research Institute, Ouagadougou

Collaborating institutions in Sweden:
SLU – Swedish University of Agricultural Sciences, Uppsala and Umeå
Uppsala University


Honduras. Photo: David Isaksson.

Honduras

The project will start on July 1st, 2005. Disbursements during 2004 refer to the preparation process.
Sida commitment for current agreement period July 2005 – June 2008: SEK 39.5 million.
Disbursed 2004: 1.4 million, as part of the preparation process.

Honduran institutions:
Universidad Nacional Autonoma de Honduras (UNAH)

Future collaborating institutions in Sweden:
The Swedish Institute for Infectious Disease Control (Smittskyddsinstitutet), departments for virology and bacteriology, Stockholm
Uppsala University, Department of Earth Sciences

Mozambique

Sida commitment for current agreement period 2001–30th June 2005: SEK 79.1 million.
Disbursed 2004: SEK 14.2 million.

Supported areas:
Anthropology, Archaeology, Biotechnics, Chemistry, Engineering, Geology, History, Informatics, Law, Linguistics, Mathematics, Marine Biology, Marine Science, Medicine, Veterinary Medicine, Physics

Mozambican institutions:
INIVE – National Veterinary Research Institute, Maputo
UEM – Eduardo Mondlane University, Maputo

Collaborating institutions:
CTH – Chalmers University of Technology, Göteborg
GU – Göteborg University
KI – Karolinska Institute, Stockholm
Kristineberg Marine Biological Station, Fiskebäckskil
KTH – Royal Institute of Technology, Stockholm
LTH – Lund University of Technology
LU – Lund University
SLU – Swedish University of Agricultural Sciences, Uppsala
UU – Uppsala University
University of Northumbria, Newcastle upon Tyne
University of Natal, Durban
University of Pretoria
Witwatersrand University

Mozambique. Photo: David Isaksson.

Rwanda

Sida commitment for current agreement period 2003–2005: SEK 7 million.
Disbursed 2004: SEK 15.3 million.

Supported areas:
Information and Communications Technologies (ICT), Environment, Conflict Resolution, Democracy and Human Rights, Human Resource Development, Economic Reforms

Rwandan institutions:
NUR – the National University of Rwanda, Butare

Collaborating partners:
Linköping University, Sweden
Blekinge Institute of Technology, Sweden

Rwanda. Photo: ScanPix.

Tanzania. Photo: Stefan Bladh.

Tanzania

Sida commitment for current agreement period 2004–2007: SEK 188 million.
Disbursed 2004: SEK 37.4 million.

Supported areas:
Architecture, Education, Energy and Engineering (Electricity, Electrotechnology, New Materials), Health (HIV/AIDS, Malaria, Reproductive Health), Information and Communication Technology, Languages, Law, Natural Resources and Environment (Agropesticides, Coastal Zone, Drylands), Social and Economic Development, Institutional Support

Tanzanian institutions:
UDSM – University of Dar es Salaam
UCLAS – University College of Lands and Agricultural Studies
MUCHS – Muhimbili University College of Health Sciences

Collaborating institutions:
GU – Göteborg University
KI – Karolinska Institute, Stockholm
KTH – Royal Institute of Technology, Stockholm
SMI – Swedish Institute for Infectious Disease Control, Stockholm
Swedish Environmental Research Group, Stockholm
SU – Stockholm University
UmU – Umeå University
UU – Uppsala University

Uganda. Photo: Mats Widén.

Uganda

Sida Commitment for current agreement period 2002–2004: SEK 104 million.
Disbursed 2004: SEK 20.1 million.

Supported areas:
Agriculture (Environment), Health (HIV/AIDS, Malaria, Mental Health, Reproductive Health, Pharmacology), ICT, Technology (Architecture, Energy, Engineering, Environment), Social Sciences (Gender, HIV/AIDS, Political Science, Sociology), Epidemiology, Library Science

Ugandan institutions:
Makerere University, Kampala

Collaborating institutions:
GU – Göteborg University
KI – Karolinska Institute, Stockholm
KTH – Royal Institute of Technology, Stockholm
Luth – Luleå University
SLU – Swedish University of Agricultural Sciences, Uppsala
UU – Uppsala University
BU – Borås University

Bolivia

Sida commitment for current agreement period 2000–2003: SEK 57 million.
Disbursed 2004: SEK 19.1 million.

Supported areas:
Biotechnology, Chemistry, Food Science, Water Resources Engineering, Regional Planning, Social Economics, History, Anthropology, Archaeology, Linguistics (Aymara)

Bolivian institutions:
UMSA – San Andrés University, La Paz
UMSS – San Simón University, Cochabamba
Vice Ministry for Higher Education, Science and Technology, La Paz
CEBEM – Bolivian Center of Multidisciplinary Studies, La Paz
CERES – Center of Studies of Economic and Social Reality, Cochabamba

Collaborating institutions in Sweden:
LU – Lund University
UU – Uppsala University
FLACSO – Latin American Faculty of Social Sciences (network), Peru


Bolivia. Photo: Kina Robberts.

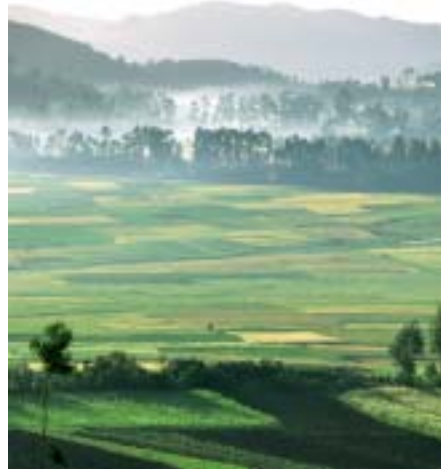
Ethiopia

Sida commitment for current agreement period 2002–2005: SEK 103 million.
Disbursed 2004: SEK 13.3 million.

Supported areas:
Agriculture, Biology, Environmental Economics, Health, Natural Products Chemistry, Solar Energy, Water Resources

Ethiopian institutions:
AAU – Addis Ababa University
AHRI – Armauer Hansen Research Institute, Addis Ababa
AU – Alemaya University, Dire Dawa
ESTC – Ethiopian Science and Technology Commission, Addis Ababa

Collaborating institutions:
GU – Göteborg University
ISP – International Science Programmes, Uppsala
KI – Karolinska Institutet, Stockholm
KTH – Royal Institute of Technology, Stockholm
SLU – Swedish University of Agricultural Sciences, Uppsala and Alnarp
SU – Stockholm University
UmU – Umeå University
UU – Uppsala University


Ethiopia. Photo: Silver photo.

Nicaragua. Photo: Kina Robberts.

Nicaragua

Sida commitment for current agreement period July 2004 – June 2008: SEK 100 million.
Disbursed 2004: SEK 27.5 million.

Supported areas:
Agriculture, Health, Engineering and Environmental Sciences
Nicaraguan Institutions
UNA – National University of Agriculture, Managua
UNAN-Léon – National Autonomous University of Nicaragua, Léon
UNAN-Managua – National Autonomous University of Nicaragua, Managua
UNI – National University of Engineering, Managua

Collaborating institutions in Sweden:
HS – Huddinge University Hospital
KI – Karolinska Institute, Stockholm
KTH – Royal Institute of Technology, Stockholm
LU – Lund University
SLU – Swedish University of Agricultural Sciences, Uppsala
SMI – Swedish Institute for Infectious Disease Control, Stockholm
UmU – Umeå University

Sri Lanka. Photo: Stefan Bladh.

Sri Lanka

Sida commitment for current agreement period 2003–2007: SEK 84 million.
Disbursed 2004: SEK 17.9 million.

Supported areas:
Archeology, Biotechnology, Biochemical Pest Control,
Electrical Engineering, Health, Library, Marine Biology,
Regional Development/Poverty Alleviation, Social Sciences,
University Staff Development, ICT & Postgraduate Studies in ICT

Sri Lankan institutions:
NARA – National Aquatic Resources Agency, Colombo
NSF – National Science Foundation, Colombo
UoC – University of Colombo
UoJ – University of Jaffna
UoK – University of Kelaniya
UoP – University of Peradeniya
UoR – University of Ruhuna, Matara
UoSJ – University of Sri Jayawardenepura

Collaborating institutions in Sweden:
CTH – Chalmers University of Technology, Göteborg
GU – Göteborg University
ISP – International Science Programs, Uppsala
KU – Kalmar University
KTH – Royal Institute of Technology, Stockholm
SLU – Swedish University of Agricultural Sciences, Uppsala
SU – Stockholm University
UU – Uppsala University
INASP – The International Network for the Availability of Scientific Publications, London

Laos

Sida commitment for current agreement period 2003–2005: SEK 16.0 million.
Disbursed 2004: SEK 14.9 million.

Supported areas:
Social Sciences, Education, Agriculture, Forestry, Physics, Chemistry, Biology, Mathematics and IT

Lao institutions at the NUOL – the National University of Laos:
FOSS – Faculty of Social Sciences
FOE – Faculty of Education
FOS – Faculty of Science
FOF – Faculty of Forestry
FOA – Faculty of Agriculture

Collaborating institutions:
SLU – Swedish University of Agricultural Sciences, Uppsala and Umeå
UMU – Umeå University
KTH – Royal Institute of Technology


Laos. Photo: David Isaksson.

Vietnam

Sida commitment for current agreement period: 2004–2007: SEK 100 million.
Disbursed 2004: SEK 25.2 million.

Supported areas:
Health, Biotechnology, Rural Development including Environment

Vietnamese institutions:
CLST – Central Library for Science and Technology, Hanoi
CTU – Can Tho University
Hué University
University of Agriculture and Forestry, Ho Chi Minh
Institute of Material Sciences, Hanoi
Institute of Oceanography, Nha Trang
Institute of Oceanology, Haiphong
MOST – Ministry of Science and Technology, Hanoi
NCSSH – National Centre for Social Sciences and Humanities, Hanoi
NIAH – National Institute for Animal Husbandry, Hanoi
NISTPASS – The National Institute for Science and Technology Policy and Strategy Studies, Hanoi
RCFTI – Research Centre for Forest Tree Improvement, Hanoi
Hanoi Medical School
Agricultural Genetics Institute, Hanoi

Collaborating institutions:
ISP – International Science Programs, Uppsala
KI – Karolinska Institute, Stockholm
KTH – Royal Institute of Technology, Stockholm
Skogforsk – The Forestry Research Institute, Uppsala
SLU – Swedish University of Agricultural Sciences, Uppsala
SSE – Stockholm School of Economics
SU – Stockholm University
UmU – Umeå University
UU – Uppsala University
CMC – Coastal Management Centre, Manila


Vietnam. Photo: Johan Resele.

Thematic Research Programmes

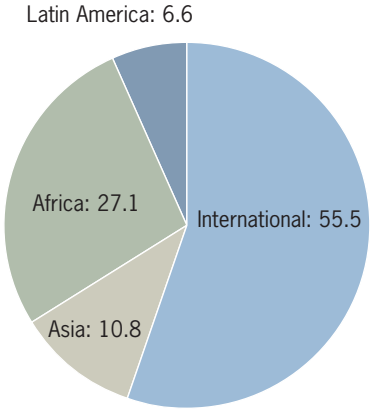

Tanzania. Photo: Stefan Bladh.


Vietnam. Photo: Johan Resele.


Sri Lanka. Photo: Stefan Bladh.

Regional and International Programmes:

Percentage of total SEK 444.7 million.



NATURAL SCIENCES & TECHNOLOGY

Collaborating institutions:

Basic Sciences:
International Science Programs, ISP, Uppsala, Sweden
Third World Academy of Sciences, TWAS, Trieste, Italy
International Centre for Theoretical Physics, ICTP, Trieste, Italy
Third World Organisation for Women in Science, TWOWS, Trieste, Italy
Biotechnology, Biosafety and Biopolicy in East Africa (BIOEARN):
Ugandan National Council for Science and Technology, UNCST, Kampala, Uganda
Stockholm Environment Institute, SEI, Stockholm, Sweden

Energy, Climate and Environment:
African Energy Policy Research Network, AFREPREN, Nairobi, Kenya
Food Woodstove Dissemination, FWD, Kilimani, Kenya
Asian Institute of Technology, AIT, Klongluang Pathumthani, Thailand
Asian Regional Research Programme in Energy, Environment and Climate (ARRPEEC), administered by AIT
Renewable Energy Technologies in Asia (RETS in Asia), administered by AIT
Asian Regional Research Programme on Environmental Technology (ARRPET), administered by AIT

SOCIAL SCIENCES AND HUMANITIES

Collaborating institutions:

Social Sciences:
United Nations Research Institute for Social Development, UNRISD, Geneva, Switzerland
Council for Development of Social Science Research in Africa, CODESRIA, Dakar, Senegal
Organisation for Social Science Research in Eastern and Southern Africa, OSSREA, Addis Ababa, Ethiopia
African Association of Political Science, AAPS, Pretoria, South Africa
Union for African Population Studies, UAPS, Dakar, Senegal
Consejo Latinoamericano de Ciencias Sociales, CLACSO, Buenos Aires, Argentina
Facultad Latinoamericana de Ciencias Sociales, FLACSO, San José, Costa Rica
Facultad Latinoamericana de Ciencias Sociales, FLACSO, Guatemala City, Guatemala
Facultad Latinoamericana de Ciencias Sociales, FLACSO, San Salvador, El Salvador
Asian Political and International Studies Association, APISA, Kuala Lumpur, Malaysia
Institute of Southern Africa Studies, ISAS, University of Lesotho, Roma, Lesotho

Economy:
African Economic Research Consortium, AERC, Nairobi, Kenya
The Beijer Institute of Ecological Economics, Stockholm, Sweden
Economy and Environment Program for Southeast Asia, EEPSEA, Singapore
South Asian Network for Development and Environmental Economics, SANDEE, Kathmandu, Nepal
UNU/WIDER – World Institute for Development Economics Research, Helsinki, Finland

Democracy and Human Rights Programme:
Jawaharlal Nehru University, New Delhi, India
Utkal University, Bhubaneswar, Orissa, India
University of Witwatersrand, Johannesburg, South Africa
Centre for Research and Documentation, Kano, Nigeria
Institute for Free Flow of Information, Jakarta, Indonesia
Institutt for Statsvitenskap, Oslo University, Oslo, Norway
Centre for East & Southeast Asian Studies, GESEAS, Göteborg University, Göteborg, Sweden
Peace & Development Research Institute, PADRIGU, Göteborg University, Göteborg, Sweden
Department of Political Science, Stockholm University, Stockholm, Sweden
Department of Peace & Conflict Research, Uppsala University, Uppsala, Sweden
Department of Government, Uppsala University, Uppsala, Sweden
Cambodian Researchers for Development, CRD, Phnom Penh, Cambodia
Institute for Malaysian and International Studies, IKMAS, National University of Malaysia, Bangi, Malaysia
Research and Education for Peace Unit, University of Science of Malaysia, REPUSM, Penang, Malaysia
The Centre and Programme for Southeast Asian Studies, Indonesian Institute of the Sciences, PSEAS/LIPI, Jakarta, Indonesia
Department of Sociology, Uppsala University, Uppsala, Sweden

Archaeology Programme:
Faculty of Arts and Social Sciences, Department of History, Archaeology Unit, University of Dar es Salaam, Tanzania (Pan African Association, PAA)
Department of Archaeology and Ancient History, Uppsala University, Uppsala, Sweden

Swedish multidisciplinary networks:
Gender and Development Network, GADNET, Centre for Global Gender Studies, Göteborg University, Göteborg, Sweden
Swedish South Asian Network, SASNET, Lund University, Lund, Sweden

HEALTH RESEARCH

Collaborating institutions:

Health research and policy:
Global Forum for Health Research, Geneva, Switzerland
Council on Health Research for Development, COHRED, Geneva, Switzerland
Alliance for Health Policy and Systems Research, AHPSR, Geneva, Switzerland
Research Policy and Cooperation, World Health Organisation, Geneva, Switzerland

Child health:
Child and Adolescent Health and Development, WHO, Geneva, Switzerland

Sexual and reproductive health:
UNDP/UNFPA/WHO/World Bank Special Programme on Research, Development and Research Training in Human Reproduction, WHO, Geneva, Switzerland
East, Central and Southern African Organisation for Obstetrics and Gynaecology, ECSAOG

Tropical and other infectious diseases:
UNDP/World Bank/WHO/UNICEF Special Programme for Research and Training in Tropical Diseases, WHO, Geneva, Switzerland
Centre for Health and Population Research, ICDDR,B, Dhaka, Bangladesh
Department of Medical Microbiology and Immunology, Göteborg University, Göteborg, Sweden
Department of Immunology, Microbiology, Pathology and Infectious Diseases, Karolinska Institute, Stockholm, Sweden
Vaccines and Biologicals, WHO, Geneva, Switzerland
European Malaria Vaccine Initiative, EMVI, Copenhagen, Denmark
International Vaccine Institute (IVI), Seoul, Korea
Multilateral Initiative on Malaria, MIM, Stockholm, Sweden

HIV/AIDS and related sexually transmitted diseases:
National Public Health Laboratory Bissau, Bissau, Guinea-Bissau
Muhimbili University College of Health Sciences, Dar es Salaam, Tanzania
Department of Medical Microbiology and Immunology, Göteborg University, Göteborg, Sweden
Swedish Institute for Infectious Disease Control, Stockholm, Sweden
Microbiology and Tumour Biology Centre, Karolinska Institutet, Stockholm, Sweden
International Aids Vaccine Initiative (IAVI), New York, USA
Department of Medical Microbiology, Dermatology and Infection (MMDI), Lund University, Lund, Sweden

Research training and networking in biomedicine in Central America:
Fundación para el Desarollo Económico y Social de Centroamérica, FUNDESCA, Panamá,
The Karolinska International Research and Training Committee, KIRT, Karolinska Institutet, Stockholm, Sweden
Network for Research and Training in Parasitic Diseases at the Southern Cone of Latin America, RTPD, Porto Alegre, Brazil

Regional programme for environmental and health research in Central America:
Central American Institute for Studies on Toxic Substances, Heredia, Costa Rica
Department for Systems Ecology, Stockholm University, Stockholm, Sweden

Other:
Non Communicable Disease Surveillance, World Health Organization, Geneva, Switzerland
WHO, Geneva, Switzerland
International Network of Field Sites with continuous Demographic Evaluation of Populations and their Health in Developing Countries, INDEPTH, Accra, Ghana

ENVIRONMENTAL SCIENCES & NATURAL RESOURCES

Collaborating institutions

Regional marine research programmes:
Western Indian Ocean Marine Science Association, WIOMSA, Zanzibar, Tanzania
Coastal Management Research Centre, COMREC, Södertörn University College, Stockholm, Sweden
Coral Reef Degradation in the Indian Ocean, CORDIO, Kalmar University, Kalmar, Sweden
University of Dar es Salaam, Institute of Marine Science, Zanzibar, Tanzania
National Aquatic Resources Agency, NARA, Colombo, Sri Lanka
Göteborg University, Göteborg, Sweden
Stockholm University, Stockholm, Sweden
University of Ruhuna, Matura, Sri Lanka

Other regional programmes:
African Research Programme on Sustainable Use of Dryland Biodiversity, RPSUD, Nairobi, Kenya
Pastoral Information Network Project, PINEP, Department of Range Management, University of Nairobi, Kenya
Research Programme for Environmental Policy and Society, EPOS, Linköping University, Linköping, Sweden
African Forestry Research Network, AFORNET, African Academy of Science, AAS, Nairobi, Kenya
Lake Victoria Research Initiative – VicRes, Inter-University Council for East Africa, IUCEA, Kampala, Uganda
Regional Farming Systems in Asia, Ho Chi Minh, Vietnam

International agricultural research, food security and genetic resources:
Consultative Group for International Agricultural Research, CGIAR:
International Potato Center, CIP, Lima, Peru
International Centre of Insect Physiology and Ecology, ICIPE, Nairobi, Kenya
International Food Policy Research Institute, IFPRI, Washington, USA
International Rice Research Institute, IRRI, Manila Philippines
International Maize and Wheat Improvement Center, CIMMYT, Mexico City, Mexico
International Institute of Tropical Agriculture, IITA, Ibadan, Nigeria
International Center for Tropical Agriculture, CIAT, Cali, Colombia
International Crops Research Institute for the Semi-Arid Tropics, ICRISAT, Andhra Pradesh, India
International Center for Agricultural Research in the Dry Areas, ICARDA, Aleppo, Syria
International Livestock Research Institute, ILRI, Nairobi, Kenya
International Plant Genetic Resources Institute, IPGRI, Rome, Italy
West Africa Rice Development Association, WARDA, Bouaké, Ivory Coast
World Agroforestry Research Centre, ICRAF, Nairobi, Kenya
Center for International Forestry Research, CIFOR, Jakarta, Indonesia
World Fish Centre, Penang, Malaysia
International Water Management Institute, IWMI, Colombo, Sri Lanka

Other international organisations:
African Centre for Technology Studies, ACTS, Nairobi, Kenya
International Foundation for Science, IFS, Stockholm, Sweden

Members of the Sida Research Committee 2004

Professor Gunnar Öquist, Chairman *Permanent Secretary to the Royal Swedish Academy of Sciences*

Professor Lotta Mellander *the Institute for the Health of Women and Children/ Department of Paediatrics Gothenburg University*

Professor Barbara Ekbom *Institution of Entomology Swedish University of Agricultural Sciences, Uppsala*

Professor Malin Falkenmark *Stockholm International Water Institute – SIWI*

Professor Sven Hessle *Department of Social Work Stockholm University*

Professor Olle Stendahl *Division of Medical Microbiology Linköping University*

Professor Inga Persson *the Institute of Economic Research/ Department of Economics, Lund University*

Professor Lena Trojer *School of Technoculture, Humanities and Planning Blekinge Institute of Technology*

Assistant Professor Måns Lönnroth *Foundation for strategic environment research, Stockholm*

Ingemar Gustafsson *Advisor, Department for Policy and Methodology, Sida*

Berit Olsson *Director, Department for Research Cooperation, Sida*

Staff 2004

Berit Olsson	Director
Kerstin Alksäter	Financial Officer
Karin Ringberg	Controller
Anne Sisask	Programme Officer, Editor Sida Studies
Ingrid Svensson	Information Officer
Maria Wibom-Willén	Secretary to the Director and the Sida Research Committee

Division for University Support and National Research Development

Tomas Kjellqvist	Head of Division
Hannah Akuffo	Deputy Head of Division, Senior Research Advisor, Uganda, health research
Karin Afli	Financial Officer
Renée Ankarfjärd	Research Advisor, Laos, natural resources and environment
Maria Teresa Bejarano	Senior Research Advisor, Honduras, health research
Håkan Berg	Senior Research Advisor, Nicaragua, natural resources and environment
Ulla Brundin	Programme Administrator
Ros-Mari Bålöw	Senior Research Advisor, Sri Lanka, health research
Måns Fellesson	Research Advisor, Tanzania, Rwanda, social sciences
Solveig Freudenthal	Senior Research Advisor, Vietnam, health research
Kwame Gbesemete	Research Advisor, Burkina Faso, social sciences
Zinaida Iritz	Research Advisor, Mozambique, natural sciences and technology
Tussi Lovén	Registration Officer
Håkan Marstorp	Senior Research Advisor, Ethiopia, natural resources and environment
Irene Opira	Registration Officer
Ester Tewolde-Berhan	Programme Administrator
Annelie Tillberg	Programme Administrator
Bertil Wahlund	Research Advisor, Bolivia, natural sciences and technology
Sven Widerberg	Financial Officer

Division for Human Sciences for Social Development

Barbro Carlsson	Head of Division
AnnaMaria Oltorp	Deputy Head of Division, Senior Research Advisor, social sciences
Marianne Boqvist	Research Advisor, social sciences
Michelle Bouchard	Programme Officer, Sida Council for Development Research
Anders Gerdin	Research Advisor, social sciences
Marianne Lindqvist	Programme Administrator, health research
Nina Löfquist	Programme Administrator, social sciences
Bertil Odén	Senior Advisor, social sciences
Viveka Persson	Research Advisor, health research
Andrés Rivarola	Research Advisor, social sciences
Pär Svensson	Research Advisor, health research

Division for Natural Sciences for Sustainable Development

Eva Ohlsson	Head of Division
Maija Lindroos	Deputy Head of Division, Senior Research Advisor, natural sciences and technology
Gity Behravan	Research Advisor, natural sciences and technology
Ellinor Gillberg	Assistant
Johan Wennerberg	Research Advisor, natural sciences and technology
Staffan Wiktelius	Senior Research Advisor, natural resources and environment

Persons employed with SAREC on December 31st, 2004 are included in the list.

In May, the Division for Thematic Programmes was divided in two: the Division for Human Sciences for Social Development and the Division for Natural Sciences for Sustainable Development.

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.

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