

Building Stronger Universities in Developing Countries

Foreword

Modern universities are global players. Knowledge and research results are increasingly shared across borders thanks to international academic networks and the mobility of students and staff at all levels. The university sector in Denmark is no exception. International research cooperation and global partnerships are strategic priorities for all Danish universities.

The eight Danish universities are open organisations that contribute to the economic and social development of society as a whole. By producing knowledge and skilled graduates the university sector *inter alia* underpins economic growth, adds to the solution of environmental issues and provides the backbone for improvements in public health. Danish universities also play a key role in offering research-based policy advice to central and regional authorities. An important element in this regard is advice on how countries with different starting points can fully benefit from globalization.

With the publication of this report the Danish universities emphasise their commitment to development. Danish universities have a long history of cooperation with research and educational institutions in the South. The aspiration is to build on this experience to scale up cooperation and launch new partnerships with developing countries.

The report brings forward a number of recommendations on how the Danish university sector can increase its effectiveness in contributing to building capacity in developing countries within research and higher education. Moreover, it provides an overview of areas in which Danish universities have the capacity and critical mass to provide research-based advice and support. I hope this description of the Danish resource base will be useful for potential partners in developing countries.

I would like to thank the Danish Minister for Development Cooperation, Ulla Tørnæs, for encouraging the Danish universities to formulate a vision for their future role in development cooperation.

The Danish universities now look forward to taking the next steps and forging new partnerships with their counterparts in developing countries.

Lauritz B. Holm-Nielsen

*Chairman of the working group of
Universities Denmark*

1. Introduction

Research and tertiary education as drivers of socio-economic development are becoming increasingly more evident in all parts of society. The World Bank has research and tertiary education on its agenda, donors have increased their support to research and university education, and most important, the developing countries themselves are aware that building a knowledge society and being able to keep pace with the developed world will require investment in the university sector.

In order to contribute to this development, the Vice-Chancellors of the Danish universities have appointed a working group that has outlined recommendations as to how the Danish university sector can support capacity strengthening within research and tertiary education in developing countries in the most effective and constructive way. The working group brings together experts from a wide range of disciplines, all with extensive experience in establishing research and higher education partnerships with developing countries.

The report at hand presents the outcome of the work of this working group. It makes two proposals with respect to the Danish contribution to long-term capacity building within research and higher education in developing countries:

1. Increased national support for the development of 'Networks of Excellence'.
2. More scholarships for M.Sc., MBA and Ph.D. students from developing countries.

In 2000, Denmark signed the United Nations Millennium Declaration and committed itself to the eight Millennium Development Goals. In 2009 the Africa Commission presented a number of recommendations as to how Denmark can help Africa benefit more from globalization. This report reflects the commitment of Danish universities to contribute to the achievement of these two political goals.

A) The Working Group on Capacity Strengthening within Research and Higher Education in Developing Countries

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2. The Role of Universities in Development

It is of paramount importance to the success of poverty reduction strategies and to the achievement of Danish development policy goals that research and tertiary education institutions in the developing world strengthen their capacity dramatically. Well-managed local universities are essential if low-income countries are to develop into modern knowledge societies. Economic growth and increased welfare require availability of highly skilled professionals and a capacity in society to innovate and to adapt technologies and knowledge in a given national context. Therefore, research and higher education institutions in developing countries need to improve their ability to respond to current challenges and to the rapid transitions following changes in, for example, disease patterns, demography, economic and trade policies, climate, agricultural developments and urbanization.

Well-managed universities have the potential to strengthen both the public and the private sectors. National governance structures and civil society organisations can benefit significantly from well-functioning research and higher education institutions. Among other things universities can help strengthen the capacity to effectively implement international aid programmes. Further, universities in developing countries can, in partnership with private sector actors, contribute to the establishment of a larger and more professional private sector. Universities also provide the highly-skilled workforce needed for private sector development. The potential of the youth in low income countries can be realized through larger investment in local higher education institutions.

North-South and North-South-South networks have proven to be an effective way of transferring knowledge and good practices to and between universities in developing countries. Danish universities have a long tradition of partnerships with institutions in the developing world. Already, the strength, good reputation and global recognition of the efficiency, relevance and impact of the contribution by Danish universities towards capacity strengthening have been amply

demonstrated through numerous international reviews and evaluations. However, intensification of the cooperation and coordination between the Danish universities will enhance opportunities for an increased and better focused commitment to the building of stronger research and higher education institutions in developing countries.

If low income countries are to develop into stable and prosperous nations, support for well-managed research and higher education institutions need to be an integral part of a long-term strategy for development and growth.

B) Universities as Development Hubs

Local universities have great potential as 'development hubs' that facilitate sustainable development – socially, economically and ecologically. Universities are not only providers of competent and motivated graduates to fill key positions in society, but also key players in innovation and knowledge production. By liaising and cooperating with partners and organisations from the private sector, the public sector and civil society, universities contribute to economic growth, increased welfare, democratization and environmental protection. If a university is to perform effectively as a development hub, the institution needs to be up-to-date with respect to good governance, high-quality research, new learning methods and information technologies. In this respect, universities in developing countries can benefit significantly from partnerships with other research and higher education institutions.

Source: "Universities as Development Hubs" by J. Hansen, K. Lindegaard and M. Lehmann. In R. Fincham et.al. (Eds.): Sustainable Development and the University. New Strategies for Research, Teaching and Practice, 2004.

"Well-managed universities have the potential to strengthen both the public and the private sectors ..."

The Strengths of Danish Universities

In 2008 the Lisbon Council published an international ranking of university systems. Denmark ranks no. 3 of a total of 17 countries. This is due to particularly high scores in categories such as participation in tertiary education, contribution to lifelong learning and the ability to respond to change. Danish universities are part of a Nordic university tradition where inclusion of many different social groups and responsiveness to the needs of society are important values.

University Systems Ranking - the highest ranks

Overall Rank	Country	Overall Points	Participation in Tertiary Education	Acceptance Threshold	Wage Premium	Top 10 Source Countries of International Students	Lifelong Learning	Ability to Change
		6=best, 102=worst	In %	In PISA score	In %	In %	In %	Bologna Scorecard Grade
1	Australia	30,6	59	535	45,2	75,4	14,0	-
2	United Kingdom	31,1	39	542	54,8	55,5	15,8	1,35
3	Denmark	39,1	46	526	50,7	38,3	7,8	1,19
4	Finland	40,8	47	548	58,4	58,5	13,1	1,43
5	USA	49	34	523	76,8	57,3	5,2	-
6	Sweden	49,2	38	539	35,4	44,9	13,3	1,71

3. The Recommendations of Universities Denmark

To ensure a more effective contribution of Danish universities to capacity strengthening of research and higher education institutions in developing countries, the working group of Universities Denmark recommends the following:

1. Support for the development of 'Networks of Excellence'
2. More Danish scholarships for M.Sc., MBA and Ph.D. students from developing countries.

The focus of the first proposal is to strengthen the capacity of universities in developing countries through so-called 'Networks of Excellence' partnerships with relevant institutions in Denmark and elsewhere. The working group has identified seven areas in which Danish universities experience significant demand for support for capacity building among institutions in developing countries. They will be referred to as 'resource platforms'.

The aim of the second proposal is to increase the support for education and training of future professionals in developing countries. The proposal is to extend existing DANIDA scholarship schemes and hereby ensure that more students and junior researchers from developing countries gain adequate financial means to follow a tertiary education programme and to take part in international flows of academic mobility.

3.1 Strengthening Capacity through Networks of Excellence

The working group of Universities Denmark proposes to the Danish Ministry of Foreign Affairs to support the development of Networks of Excellence. A Network of Excellence is a long term partnership between one or more universities in developing countries and relevant Danish and international partners. The networks should facilitate North-South collaboration as well as North-South-South and South-South partnering. Besides universities the networks should also be open to other types of partners, for example sector research institutes, government agencies, NGOs and private companies. The objectives of a Network of Excellence are to:

- stimulate development, growth, innovation and job creation within areas of particular importance to developing countries
- strengthen the long-term institutional capacity of local universities to undertake research, administration, innovation and knowledge management
- strengthen the local capacity to increase the number and academic quality of future professionals within disciplines of high relevance to developing societies
- support integration of universities in developing countries into international research and educational networks.

The partners and activities of each Network of Excellence will be selected on the basis of needs formulated by the participating developing countries in accordance with the principles laid down in the Paris Declaration for alignment with donor coordination and priority-setting in partner countries in the South. Furthermore, the strengthening of university capacities needs to be coordinated to complement other international initiatives supporting research and tertiary education in low income regions.

The working group has identified seven areas – the *resource platforms* – in which Danish universities are aware of an increasing demand for partnering and capacity strengthening activities.

Danish universities are already involved in many North-South and North-South-South partnerships within the seven areas listed below:

- Human Health
- Management and Leadership
- Water, Land and Biodiversity
- Agriculture and Agribusiness
- Sustainable Technologies
- Economic Development, Growth and Innovation
- Culture, Development and Human Security.

Section 4 describes the resource platforms in more detail and proposes activities and partners. All platforms are multidisciplinary and bring together researchers and experts across institutions and disciplines. The multidisciplinary approach ensures that each platform remains responsive to a large variety of needs.

D Capacity Building and Strengthening Components

1. **Political and Legal Framework**
 - 1.1 The legal framework, i.e. the University Act
 - 1.2 Creation of university boards, identification of external board members
 - 1.3 Financial framework and funding (basic funds and external research grants)
 - 1.4 A national research council system for competitive tendering
 - 1.5 Performance contracts at the university level

- 2. Governance, Leadership, Management**
 - 2.1 Principles of good university governance
 - 2.2 Development programmes for leadership (at all management levels)
 - 2.3 Institutional strategy
 - 2.4 Financial planning, budgeting, and monitoring
 - 2.5 Performance contracts at the department level
 - 2.6 Human resources
 - 2.7 Public relations
 - 2.8 Organisation
- 3. Infrastructure**
 - 3.1 Buildings
 - 3.2 Library
 - 3.3 Laboratories, equipment
 - 3.4 IT-infrastructure
- 4. Research**
 - 4.1 Research leadership and management
 - 4.2 Project management
 - 4.3 Competitive tendering and applications
 - 4.4 Quality assurance and control mechanisms
 - 4.5 Publications and quality standards
 - 4.6 Business and industry collaboration, innovation
 - 4.7 Intellectual Property Rights (IPR)
 - 4.8 Excellence programmes
 - 4.9 Ph.D. education, quality control
 - 4.10 Performance indicators – output versus input
 - 4.11 Priority-setting for research
- 5. Tertiary Education**
 - 5.1 Curriculum development
 - 5.2 Student involvement
 - 5.3 Business and industry collaboration and involvement
 - 5.4 Quality control mechanisms
 - 5.5 E-learning platforms and online resources for training and learning
 - 5.6 Didactics and innovative learning methods
 - 5.7 Learning outcomes
- 6. Dissemination**
 - 6.1 Strengthening national communication platforms
 - 6.2 Building international publication capacity
 - 6.3 Promoting international conferences held in countries in the South
 - 6.4 Increasing access to web-based technologies and communication forums

“Building strong and stable institutions in developing countries requires sustained commitment ...

3.1.1. Building strong institutions

The backbone of a modern university is a solid infrastructure for research and higher education. Administration and management need to work at all levels, and adequate buildings and facilities have to be in place. The importance of institutional capacity building is often underestimated, but if efforts to modernize institutions in the South are to provide long-lasting results, it is essential to take a more holistic approach and focus more on the strengthening of institutional capacity.

Therefore, it will be a core task for each Network of Excellence to support the development of institutional master plans for the partners in the South. The plan should be developed on the basis of a comprehensive institutional analysis and seen as an institution-wide strategy which will govern input from all internal and external sources. The purpose is to facilitate coordination, ensure synergies and align across investments.

Subsequent to the development of a general master plan, activities to enhance research and higher education will be established. Projects and activities should focus on areas of particular relevance to developing countries. Box D lists a number of capacity building components which are to be taken into consideration when formulating the institutional master plan and planning the specific research and education activities.

As already highlighted, national priorities are to be the starting point for the building of particular strengths at the partner institutions in the South. Research programmes, educational activities and related capacity building should build upon and be aligned with already established international partnerships with, for example, private sector actors or international research foundations.

Enhancing tertiary education

The demand for tertiary education is increasing in developing countries. Therefore, the working group of Universities Denmark suggests that the Networks of Excellence pay special attention to support for the design of higher education

programmes at M.Sc., MBA and Ph.D. level. It is essential that these programmes meet the particular local needs for example in terms of scientific content, collaboration with business/industry, community involvement, and pedagogy. Emphasis should be on the transfer of knowledge and good practices with respect to teaching and learning. Danish universities offer significant expertise within problem-based learning and other innovative learning methods. Improving IT-based learning may be part of the effort to build higher education capacity for example by focusing on the development of IT infrastructures, which will enable institutions in the South to tap into the IT-based education systems of network partners as well as international web-based learning and information platforms.

Educational programmes could include study trips to partnering institutions as well as periods of study abroad. If national regulations will allow this, MSc., MBA and Ph.D. programmes could result in a joint or a multiple degree awarded by two or more participating institutions.

3.1.2. Organisation and funding

Building strong and stable institutions in developing countries requires sustained commitment. Therefore, capacity strengthening in research and higher education calls for an ambitious and long term strategy. If the platforms are to contribute effectively and constructively to this development, they need to be available for partnerships beyond the short time span of an average research or educational project. At the same time, it is of paramount importance that the platforms remain dynamic and responsive to the changing needs of partners in the South. Therefore, the working group of Universities Denmark suggests that the resource platforms have basic funding for a minimum of 15 years, but also proposes that the portfolio and activities of each platform should be evaluated every five years by a board of external reviewers.

With respect to organisation, the working group suggests that a secretariat is assigned to each resource platform. The platform secretariat will be responsible for the overall administration of funding and will act as a central contact point for involved institutions, donors and other stakeholders. The secretariat could be located at one of the Danish universities involved or at a relevant organisation in or outside of Denmark. Each resource platform should be governed by a board with representatives from for example the participating universities, donors, involved companies and organisations. Finally, a steering committee representing all seven platforms should be established in order to ensure coordination, cooperation and exchange between the initiatives. Collaboration and interplatform projects should be encouraged.

The working group of Universities Denmark proposes that the Danish Ministry of Foreign Affairs provides basic funding for the seven resource platforms, their establishment and their organisation. The working group estimates that DKK 10-15 million is needed per year per platform to cover the basic operations of each network. Expenses may vary between platforms. Part of the basic costs could be covered by the participating Danish universities. However, financial support from the Danish state is essential if this initiative, rooted in Danish institutions, is to become a reality.

A possible contractual set-up could be an agreement on research-based public sector services between the Danish universities involved and the Danish Ministry of Foreign Affairs.

Fundraising will be a core task for each platform secretariat. In addition to the basic funding for administration and network maintenance, the platforms will provide their own finances via project and research grants from a variety of donors – public as well as private, national as well as international.

3.2. Scholarships for M.Sc., MBA and Ph.D. Students

In addition to support for the development of Networks of Excellence the working group of Universities Denmark recommends that the Danish Ministry of Foreign Affairs increases its investments in scholarships for M.Sc., MBA and Ph.D. students.

3.2.1. Support for students in the Networks of Excellence

First of all the working group proposes to offer financial support for M.Sc., MBA and Ph.D. students enrolled in educational programmes offered by the Networks of Excellence. This could be facilitated by expanding existing DANIDA scholarship and fellowship schemes. The financial situation is particularly critical for students and junior researchers who wish to take a period of study abroad. By studying at a foreign university talented students do not only acquire knowledge and skills within their specific discipline, but also gain new perspectives on cross-cutting issues such as democracy, gender equality, human rights, freedom of expression, public services, welfare etc. If students and junior researchers from developing countries are to benefit from the increasing mobility of academia, financial support is essential.

3.2.2. Extension of Emerging Leaders' Scholarship Programme

Since the launch of 'Emerging Leaders' Scholarship Programme' in 2007, DANIDA has shown continued commitment to supporting the education and training of future leaders from developing countries. The scheme offers financial support for assisting emerging business leaders and entrepreneurs to study in two selected programmes, an MBA and an M.Sc. degree respectively, offered by Danish universities. The competencies gained by studying in Denmark help the emerging leaders advance their own ideas and potential, but also enable them to contribute to the overall development of their

home countries. Previous experience shows that when these graduates return home, they are often strong advocates for progress and improvement in society.

The working group of Universities Denmark suggests that the financial scope of the Emerging Leaders' Scholarship Programme is broadened, and that scholarships are made available within more disciplines. In addition to supporting future business leaders the scheme could also offer financial support for talented students with an interest in public administration or leadership in civil society organisations.

E) Increased Returns on Tertiary Education

»Private and social returns to education have consistently been high. Earlier research found larger returns for primary education than for secondary or tertiary education. However, the picture is changing and the returns to tertiary education have risen appreciably. Private returns to tertiary education in low-income countries are now frequently on par with the returns from primary education. Each additional year of education can yield 10 percent to 15 percent returns in the form of higher wages.«

From »Accelerating Catch-Up. Tertiary Education for Growth in Sub-Saharan Africa«, the World Bank, 2009

3.2.3. From brain drain to brain circulation

Brain drain is an obvious risk when dealing with the mobility of students and researchers from developing countries. However, the concern regarding brain drain should not hinder brain circulation. Mobility is an essential part of modern academic life and the international mobility of students and researchers is increasing. Students and young researchers can benefit significantly, professionally as well as personally, from a stay at a university abroad. To minimize the risk of brain drain special attention should be paid to the selection of students and junior researchers. It is important to ensure that grantees are motivated to return home and apply their acquired skills and knowledge in developing countries. Danish universities have significant experience in evaluating international applicants and are prepared to assist DANIDA in the selection of grantees.

F) Requirements for a More Effective Danish Contribution to Capacity Building

A number of basic requirements need to be fulfilled, if the two proposals of the working group of Universities Denmark are to be realized:

1. A long-term commitment of a minimum of 15 years from participating institutions as well as major donors
2. A partnering concept that encourages North-South collaboration as well as North-South-South and South-South partnerships
3. A focus on institutional capacity strengthening, education, and research, listed in order of priority
4. Sufficient basic funds for the establishment and maintenance of the seven resource platforms
5. More scholarships for M.Sc., MBA and Ph.D. students from developing countries
6. Sufficient options for external grants made available by Danish and international donors

G) Improving the Conditions of Danish Universities for International Cooperation

Compared to the situation in many other countries, internationalisation of research and higher education in Denmark is regulated by a detailed legal framework. For this reason it can be challenging for Danish universities to take part in partnerships with institutions in other countries, including developing countries. Therefore, the working group of Universities Denmark recommends the following:

1. Danish universities should be given a high degree of autonomy with respect to forming international partnerships with research and higher education institutions outside Denmark. Partnerships should focus on quality and capacity building in research and higher education, not on fitting into a detailed legal framework.
2. Danish universities should be allowed to co-issue joint degrees at B.Sc., M.Sc., MBA and Ph.D. levels. Today, a Danish university can participate in joint educational programmes, but cannot co-issue a so-called joint degree where all participating universities sign a common diploma. Instead, the participating institutions each issue a degree, and the students receive a multiple degree and several diplomas.
3. Danish universities should be allowed to take part in joint programmes at Ph.D. level and to co-issue double and joint degrees at this level, which is not the case today.

4. The Resource Platforms

The Danish universities possess significant expertise with respect to institutional capacity building (please see section 1-3). In the specific field of capacity strengthening within research and higher education the working group of Universities Denmark has identified seven areas where Danish universities can offer significant support. The following section will describe the seven resource platforms in more detail and propose activities and partners.

The proposed content and activities of the platforms are to be discussed further with the Danish Ministry of Foreign Affairs, partners in the South and other stakeholders.

Please visit www.dkuni.dk for more detailed descriptions of the proposed seven resource platforms.

4.1. Human Health

To implement a successful poverty reduction strategy and to achieve the national targets for social and economic development in Sub-Saharan Africa and other low income regions of the world it is of paramount importance to achieve improvements in human health. To accomplish such improvements in the health status, the universities would need to

dramatically increase their capacity to train many more health professionals and to achieve a greater capacity to develop, innovate and adapt technologies and knowledge to address problems particularly relevant e.g. in an African context. Capacity building should take into account the expected epidemiological transition in low income countries, which will have an impact on future challenges as to health and the health services with a likely double burden of disease from both communicable and non-communicable diseases.

4.1.1. Capacity strengthening activities

Subsequent to the development of the general master plan for the partners in the South and a more detailed needs assessment, specific educational activities would be designed. This may include support to the further development of administrative management systems, curricular development at Master's and Ph.D. levels, support for the international accreditation of courses, faculty and external examiner exchange between partner universities, joint thesis supervision, developing distance-based e-learning approaches and student IT support, laboratory training infrastructure, and on-line library services.

In accordance with national priorities within the health care services, the research collaboration and research capacity building efforts will focus on a limited number of long-term research programmes of a high international standard, on basic sciences as well as applied research, and the building of a high quality Ph.D. programme.

Collaboration with the Danish institutions would focus exclusively on areas in which the Danish institutions are internationally competitive, with a special emphasis on the prevention, control and management of major public health problems. It is recommended that research includes all disciplines relevant to health sciences and often with an interdisciplinary focus.

4.1.2. Proposed partners

Involved Danish universities

The Faculty of Health Sciences, the Faculty of Pharmaceutical Sciences, the Faculty of Social Sciences, the Faculty of Life Sciences, the Faculty of Theology, the Faculty of Science and the Faculty of Humanities at the University of Copenhagen; the Faculty of Health Sciences, the Faculty of Humanities and the Danish School of Education at Aarhus University; the Faculty of Health Sciences at the University of Southern Denmark; the Faculties of Engineering, Science and Medicine at Aalborg University; the National Food Institute at the Technical University of Denmark.

It is suggested that the Copenhagen School of Global Health (University of Copenhagen) hosts the platform secretariat.

Partner institutions in the South

University of Ghana, Ghana; Kilimanjaro Christian Medical College, Tanzania; University of Nairobi, Kenya. A number of potential partners can also be identified in Mozambique and Uganda as well as one to two partners in Vietnam, Bangladesh, India or Bolivia.

Ministries and governmental agencies

Ministries of health, education, science and technology in partner countries are considered important stakeholders. In Denmark the Ministry of Foreign Affairs will be a key partner, and so will DANIDA's Health Sector Support programmes and other sector programmes which normally play a major role in influencing determinants of health.

Other Danish partners

University Hospitals (Skejby, Rigshospitalet, Odense University Hospital and Hvidovre Hospital); Statens Serum Institut; Steno Diabetes Centre; Danish Institute for International Studies; International Rehabilitation Council for Torture Victims; Danish Research Network for International Health.

Other partners

World Diabetes Foundation; Wellcome Trust; Bill & Melinda Gates Foundation; World Health Organization, tropEd Europe network and a host of relevant NGOs, UN specialised agencies and national ministerial research institutions.

“The workgroup of Universities Denmark has identified seven areas where Danish universities can offer significant support ...”

4.2. Management and Leadership

The shortage of appropriate management and leadership capabilities has been a challenge frequently experienced in connection with many development efforts. A sustainable solution can be found only by strengthening the capacities and capabilities of the developing countries' higher education institutions in this field. The shortage of skilled management capacity - particularly in many Sub-Saharan African countries – is apparent both in public and private organisations. To take a leadership position requires not only skills within the professional area concerned; management qualifications as well as innovative and entrepreneurial abilities are also essential.

In many countries the tertiary education and research institutions are still in a developing phase. They lack capacity and resources to undertake appropriate education and research in management, leadership and entrepreneurship in the local context and lack being exposed to the international professional and academic environments.

The Africa Commission pointed at entrepreneurship and business competitiveness as key factors for the business sector to create jobs and sustain economic development.

4.2.1. Capacity strengthening activities

The activities offered by this platform would have to be based on the specific needs expressed by the partner institutions in developing countries. The activities are expected to develop over time and only a limited range of initial activities are suggested here:

- Programme and curriculum development of master level studies in management, leadership, innovation and entrepreneurship, including problem and project-based learning relating to the national and regional institutional environment.
- Development of executive programmes (MBA and MPA) including programme development, curriculum development, as well as case writing and case-based teaching, faculty exchange and training for capacity building and strengthening.
- Joint research projects that take their point of departure in the contextual setting and the needs of the partners in the South. Joint research activities would include research capacity building.
- Ph.D. fellowship projects, which would be considered well-suited for strengthening the research capabilities in the partner institutions, and which would be embedded in the research environment of the Danish partners.
- The research and education activities would be combined with support to institutional capacity building, where
- Danish universities would be able to provide administrative teaching programme support and research policy and management training.

4.2.2. Proposed partners

Involved Danish Universities

The Department of Business Studies at Aalborg University (the Research Group for International Business Economics); the Centre for Entrepreneurship at Aarhus University; the Centre for Business and Development Studies at Copenhagen Business School; the Department of Society and Globalization and the Department of Communication, Business and Information Technologies at Roskilde University; the Department of Entrepreneurship and Relationship Management, the Danish Institute of Rural Research and Development and the Department of Law at the University of Southern Denmark.

Partner institutions in the South

Partners in the South will be universities, business schools and faculties. The Danish core partners already have partnerships and cooperation with a number of universities and business schools in developing countries including Ghana, Kenya, Tanzania, Zambia, Rwanda, South Africa, Vietnam, India, China, Central America (Costa Rica, Nicaragua, El Salvador), Iran a.o. In the field of management international networks already exist, such as the Association of African Business Schools (AABS) and the Global Business School Network (GBSN), representing an important link to partner institutions.

Ministries and governmental agencies

The Danish Ministry of Foreign Affairs.

Other Danish partners

The Danish universities have a long tradition of cooperating with Danish private enterprises as well as business and public organisations, and they will be involved in the different activities, individually or in a group of corporate partners to the platform. On the training side relevant cooperation has been established with Danish consultancy firms and the DANIDA Fellowship Centre. Such partnerships will be a resource for the platform.

Other partners

The Danish universities involved have ongoing long-term cooperation with the following international organisations: The International Finance Corporation (IFC), United Nations Industrial Development Organization (UNIDO), Forum for Agricultural Research in Africa (FARA).

4.3. Water, Land and Biodiversity

Africa and other developing regions face substantial challenges regarding freshwater, land and biodiversity resources and environmental sustainability. The challenges are a result of the ongoing climate change and of the steadily increasing and partly migrating global population. Local research and development of management capacity as well as integrated holistic approaches are the way forward to meet these challenges, and also of pivotal importance to poverty reduction in rural areas. Danish universities, research and consulting organizations have a strong international profile on basic and applied aquatic and terrestrial research and management, and on research-based education and capacity building. They are, therefore, highly skilled to assist in the development of a world leading Centre of Excellence (and act

as a role model) within the proposed field. Thus, such a centre will have the potential of becoming a very strong educational centre for future scientists, administrators and policy-makers in developing countries.

4.3.1. Capacity strengthening activities

The focus of this platform is to develop a world leading university centre on integrated management of water, land and biodiversity in developing countries, rooted in Africa, however with strong South-South and North-South networking, and with a strong focus on research and teaching capacity development, applied research issues and their application, as well as local engagement.

The capacity building would take a holistic and cross-disciplinary approach and would include: (i) research, modeling and management of soil, land, water, nutrients and biodiversity at local, landscape, and regional scales, (ii) urban and rural water-resource planning and waste-water management, (iii) interlinkages between land-use planning and water management practices and environmental and social determinants of health and poverty, and (iv) ecosystem and biodiversity conservation strategies as well as their conversion into enforceable natural resource and quality management practices.

A general master plan for the Centre would be followed by a more detailed needs assessment, including educational activities, support to the further development of administrative management systems; curricular development at Master's and Ph.D. levels; support for the international accreditation of courses, faculty and external examiner exchange between partner universities, joint thesis supervision, developing distance-based e- and problem-based learning approaches and student IT support, laboratory and field-study training infrastructure, database facilities and on-line library services. As the integration of research into development projects and policy formulation is a recognized challenge, a special effort will be made to build capacity to bridge the gap between R&D through joint training programmes and seminars involving a diversity of stakeholders.

4.3.2. Proposed partners

Involved Danish Universities

The National Environmental Research Institute, the Faculty of Agricultural Sciences and the Faculty of Science at Aarhus University; the Faculty of Life Sciences and the Faculty of Science at the University of Copenhagen; DTU Environment at the Technical University of Denmark; the Department of Biotechnology, Chemistry and Environmental Engineering at Aalborg University. It is suggested that Aarhus University will host the platform secretariat.

Partner institutions in the South

We propose the centre to be established in Tanzania, with close links also to groups in particular in Uganda and Kenya. The participating Danish universities have collective experience and ongoing projects in the following focal countries for Danish development support: Tanzania, Kenya, Uganda, Zambia, Botswana, Burkina Faso, Nigeria, Mali, Benin, Senegal, Ghana, South Africa, Bolivia, Nicaragua, Vietnam, Thailand and Malaysia. Relevant institutions or research groups from these countries could be affiliated with the centre (South-South networks). Further, collaboration with private sector institutions and regional organisations is envisioned.

Ministries and governmental agencies

Ministries of environment, agriculture, education, science and technology in partner countries are considered important stakeholders. In Denmark the Ministry of Foreign Affairs will be a key partner. Relevant DANIDA sector programmes will also be considered.

Other Danish partners

GEUS - Geological Survey of Denmark and Greenland, COWI, DHI.

Other partners

Global Biodiversity Information Facility.

4.4. Agriculture and Agribusiness

In the South 75 percent of the poor live in rural areas and most of them depend directly or indirectly on agriculture. A strong agricultural sector would alleviate poverty, but would require strengthened competencies in agriculture and agribusiness to become economically viable at local, national and global levels.

Production and management chains provide a useful framework for addressing the challenges faced by the agricultural sector in the developing countries. The chains range from input (including technology) and primary production through post harvest handling, processing and marketing to the end user. It also includes industries supporting the sector and sector policy frameworks where the exchange of commodities and services could take place.

A holistic approach with multi-institutional collaboration would provide very strong inter-disciplinary alliances to ensure efficient capacity strengthening of research and higher education based on needs in the developing countries. Problem-

based learning and research-based education would help solve concrete problems and strengthen research and educational capacities for a sustainable long-term development.

4.4.1. Capacity strengthening activities

Capacity strengthening covers both the ability of the individual to cope with and manage “shocks and risks” as well as the ability of institutions to support the development of an independent national agriculture and agribusiness sector. Research partnerships would be developed, existing M.Sc. and Ph.D. courses would be offered or new courses developed. The following areas would most likely be the major thematic components of partnerships:

- Improved resource utilisation in agricultural production under new climatic conditions
- Rural livelihoods and risk diversification strategies
- Food production, food quality and human health
- Economics and management of agricultural commodities and services
- Food, agricultural and environmental policy.

It is envisaged that the platform should have a one-stop entry point in Denmark and in Africa as well as in other developing countries, representing relevant universities to monitor and facilitate activities including fund raising. The platform will collaborate with the FARA-Danida initiative “Linking university education, research and business in sustainable agriculture”.

Activities to be carried out would most likely be selected on the basis of the following criteria:

- activities must involve at least one participant from the South as well as one participant from a Danish university with different but complementary competencies,
- activities must be inter-institutional and use multi-disciplinary approaches whenever possible,
- activities must address agrifood value chains and institutional constraints within these chains, and
- proposals for activities should be evaluated by a joint South-North committee.

4.4.2 Proposed partners

Involved Danish universities

Aarhus University, Aalborg University, Copenhagen Business School, Technical University of Denmark, University of Copenhagen, University of Southern Denmark.

It is suggested that one of the Danish key universities will be identified as the host of the secretariat alongside a limited number of scientific hubs located at other relevant Danish universities.

Partner institutions in the South

Central players: Forum for Agricultural Research in Africa (FARA), Pan African Agribusiness Consortium (PanAAC) and African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE).

Furthermore, a range of universities are currently working with Danish university partners: Sokoine University of Agriculture (Tanzania), University of Nairobi (Kenya), Makerere University (Uganda), University of Ghana (Ghana), Kwame Nkrumah University of Science and Technology (Ghana), Universidade Eduardo Mondlane (Mozambique), University of Ouagadougou (Burkina Faso), University of Dar-es-Salaam (Tanzania), The Directorate of Studies and Policy Analysis, Faculty of Forestry, Sokoine (Tanzania), Forestry Research Institute of Ghana (Ghana), National School of Forestry, (Morocco), Hawassa University (Ethiopia), University of Cape Town (South Africa), University of the Western Cape Town (South Africa) and many others.

Ministries and governmental agencies

Ministries of agriculture, ministries of finance and economy, ministries in charge of regulating the private sector and ministries of education, science and technology in partner countries are natural partners. In Denmark the Ministry of Foreign Affairs will be key partner.

Other Danish partners

The Danish Development Research Network (DDRN) should play a role as an information window. Industrial networks within agricultural production and processing already exist in Denmark. Such networks and individual companies within these will be invited.

Danish science parks such as the Agribusiness Park will provide inspiration for the establishment of similar entities in Africa.

Other partners

FAO, WB, IFPRI, CIRAD, ILRI, ICRAF, CILSS, NGOs (non-exhaustive list).

The Seven Resource Platforms

- Human Health
- Management and Leadership
- Water, Land and Biodiversity
- Agriculture and Agribusiness
- Sustainable Technologies
- Economic Development, Growth and Innovation
- Culture, Development and Human Security

4.5. Sustainable Technologies

Global warming is an increasing challenge calling for an effort by all countries to develop and implement plans for climate mitigation and adaptation. In order for developing countries to meet this challenge, transfer of technology and competencies, capacity building, collaborative research projects between universities and educational collaboration are necessary.

Danish research institutions and enterprises have excellent experience in combining different technologies into integrated solutions to these complex problems. In several cases, the technologies are well known, reliable and affordable. In other areas the needed and appropriate technologies are all new. Sustainable solutions integrate contextual and research-based knowledge within specific areas such as decentralised, renewable energy systems, value adding use of crop residues, agroindustrial side streams and municipality waste, sustainable buildings and urban planning, green ICT as well as sustainable ICT services related to local development and capacity building. In order to secure efficiency and functionality in the long run, it is necessary to go beyond simple technology transfer and secure local development of competencies and capacity building. Furthermore, the institutional set-up is an important factor for long-term sustainability, since local ownership and commitment by existing institutions often precondition the functioning of the implemented solutions.

Sustainable technologies imply a broader scope than just environmental protection. Involvement of local enterprises could form the basis for economic development, employment and poverty alleviation. Besides, the social dimension of sustainability is also integrated, so the technologies in question are "reinvented" - with a view to the challenges, needs and capabilities in the local communities.

4.5.1. Capacity strengthening activities

All platform activities would be locally requested and based on needs expressed by partner institutions in developing countries. For this reason, the research themes and educational programmes will be specified and developed over time in collaboration between the different partner institutions. So far, research and educational activities are envisioned within the following themes:

- Sustainable energy systems
- Sustainable buildings and urban sustainability
- Sustainable agriculture, bio-energy and bio-refineries
- Greening of ICT services and infrastructures
- Clean technologies and innovation for the Base-of-the-Pyramid
- ICT for sustainable development and capacity building.

Research-based education is important within all of the above mentioned research areas. Besides, these areas offer excellent opportunities for problem-based learning and field studies, where students can actively engage in local demonstration projects, field investigations, and experiments. Local capacity building, combined with active participation of existing institutions in developing countries would constitute a cornerstone for securing long-term functioning of sustainable technologies.

"All platform activities would be locally requested and based on needs expressed by partner institutions in developing countries ..."

4.5.2. Proposed partners

Involved Danish universities

The Department of Development and Planning, the Department of Electronic Systems, the Department of Business Studies, the Department of Biotechnology, Chemistry and Environmental Engineering and the Department of Communication and Psychology at Aalborg University; the Faculty of Agricultural Sciences and the Department of Agricultural Engineering at Aarhus University; the Department of Management Engineering at the Technical University of Denmark; the Department of Geography and the Faculty of Life Sciences at the University of Copenhagen; The

Department of Environmental, Social and Spatial Change at Roskilde University; IT University of Copenhagen; Copenhagen Business School. It is suggested that the Department of Development and Planning at Aalborg University will host the platform secretariat.

Partner institutions in the South

Partners in the South will be determined in collaboration with DANIDA sector programmes, embassies in DANIDA programme countries and relevant ministries in partner countries, as well as universities concerned. The Danish universities have a long tradition for collaboration with universities in Africa (South Africa, Kenya, Ghana, Mozambique, etc.), in Asia (Bangladesh, Vietnam, Laos, Cambodia, Thailand and Malaysia) and in Latin America (Costa Rica, Nicaragua, Columbia and Bolivia).

Ministries and governmental agencies

The Danish Ministry of Foreign Affairs, the Danish Ministry of the Environment and the Danish Ministry of Climate and Energy.

Other Danish partners

Aarhus School of Engineering, and the School of Architecture of the Royal Danish Academy of Fine Arts, Department of Human Settlements. For several years Danish universities have been engaged in long-term collaboration related to environment and development through the Danish Development Research Network (DDRN). The experience and network of DDRN would be useful in facilitating this platform.

4.6. Economic Development, Growth and Innovation

Reduction of poverty can be achieved through sound human development and economic growth which are socially and environmentally sustainable. This requires (i) a better understanding of the critical constraints and drivers of development, and (ii) coming more fully to grips with the many intricate linkages between ecosystems and human well-being. The former involves economic research into the potential roles of the different sources of growth and development. The latter includes in-depth analysis of the complex interplay between poverty, the environment and development outcomes. Generating such knowledge, and contributing effectively to addressing the need across Africa and other developing regions for training and capacity building in economic analysis and policy formulation are central activities of the proposed economic development, growth and innovation initiative.

4.6.1. Capacity strengthening activities

In a rapidly changing world economy, understanding why some countries have grown rapidly and others have not remains a major goal of development economics, with many potential explanations and little firm agreement. Two themes are singled out for particular attention in research activities under the economic development, growth and innovation platform: (i) Africa's economic performance, and (ii) technology and innovation. These focus areas will involve researchers across a range of Danish universities in collaboration with partners in the South and in international organisations.

The platform will also be used to launch joint M.Sc. and Ph.D. programmes within the field of development economics in collaboration with universities in Africa, through the African Economic Research Consortium (AERC), other Nordic universities and international institutions, including the United Nations University (UNU). The educational capacity building will include curriculum development, assistance in teaching and funding of students from a variety of countries in order to ensure a solid intake of students from developing countries.

4.6.2. Proposed partners

Involved Danish universities

University of Copenhagen, Aarhus University, Copenhagen Business School, University of Southern Denmark, Aalborg University and Roskilde University. It is proposed that the Faculty of Social Sciences at the University of Copenhagen hosts the platform secretariat.

Partner institutions in the South

The key institution in the South will be the African Economic Research Council (AERC). In addition to running a comprehensive policy relevant research program, AERC provides effective links to a wide range of African universities, through the Collaborative Master's Program in Economics, the Collaborative Ph.D. Program in Economics, and the Collaborative Masters Program in Agricultural and Applied Economics. Further, research units in individual Ministries of Development and Planning would be invited to take part. These are particularly well placed to further training and capacity building in economic analysis and policy formulation.

Ministries and governmental agencies

The Danish Ministry of Foreign Affairs.

Other partners

Cornell University, USA Other universities in the Nordic countries Links to the UN will be through the UNU World Institute for Development Economics Research (WIDER).

4.7. Culture, Development and Human Security

Development processes do not only involve technological input and achievements; the population making up a given society forms social and cultural structures, processes and resources that significantly influence societal change. Social inequality is strongly associated with social conflict and collapse of growth. Inequity increases vulnerability of large population groups both in terms of daily living and in terms of coping with man-made or natural disasters. Seemingly, sector-specific barriers to development need to be addressed on the basis of a thorough analysis of cross-cutting social dimensions such as gender, migration, education, citizenship, employment, group identity formation and welfare. Strong academic milieus within humanities and social sciences are required to provide society with core knowledge about its social dynamics, history and culture.

The state-building contribution of the humanities and social sciences in medium-income and high-income countries is important and should be highlighted. This initiative will help universities in the developing countries in Africa and in other parts of the world build local capacity to analyze social dynamics and their positive and negative impact on development processes. This implies broad capacity building in social sciences and humanities with a focus on areas such as anthropology, sociology, history, language studies, communication studies, educational research, political science, economy and psychology. On this basis, and in parallel, specific research milieus that work with high priority areas such as migration studies, conflict studies and human security would develop in accordance with the local demands from the specific country or region.

4.7.1. Capacity strengthening activities

The educational dimension of the proposal would be characterized by integrating educational and research activities. Danish researchers would contribute to curriculum development and to the strengthening of production of local text books and to the development of web-based learning tools to increase utilization of and access to high-level knowledge. Exchange of faculty and teaching collaboration in courses of common interest would create more dynamic learning environments at graduate, postgraduate and Ph.D. levels.

Research would form the necessary basis for development of new knowledge and for dynamic university teaching. Therefore, all major research projects should also include educational activities. Research collaboration will provide built-in capacity enhancement for all participating researchers. The capacity to utilize research findings in policymaking and in the public debate must be strengthened. Knowledge translation will be integral to research activities supported under the platform. Specific research activities would be developed in close collaboration between researchers from the South and the North who are part of the platform activities.

4.7.2. Proposed partners*Involved Danish universities*

The initiative will seek to involve all Danish universities, and the network approach will ensure that the resource base can expand in accordance with the demands formulated by partners in the South. At this stage, the initiative involves the Faculty of Humanities, the Faculty of Social Sciences and the Danish School of Education at Aarhus University; the Faculty of Social Sciences, the Faculty of Health at the University of Copenhagen; the Department of Society and Globalisation at Roskilde University and the Faculty of Humanities at the University of Southern Denmark. It is suggested that the platform secretariat is jointly hosted by Aarhus University and the University of Copenhagen.

Partner institutions in the South

Partners in the South will be determined in collaboration with DANIDA sector programmes, embassies in DANIDA programme countries and relevant ministries in partner countries, as well as universities concerned. It is foreseen that South partner universities outside Africa may also contribute in valuable ways to this knowledge network.

Ministries and governmental agencies

The Danish Ministry of Foreign Affairs.

Other partners

Strategic research institutes and NGOs.

4.8. Contact Information

Please contact the secretariat of Universities Denmark for further information on the proposed resource platforms and the Danish university sector:

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