



**BUILDING
STRONGER
UNIVERSITIES
2011 - 2013
PLATFORM
ON
HUMAN
HEALTH**

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List of abbreviations

BSU	Building Stronger Universities
CBSU	(PHH) Capacity Building Support Unit
Danida	Danish International Development Agency
DU	Danish universities
HSPS	(Danida) Health Sector Programme Support
JMP	Joint Malaria Programme
KCMCentre	Kilimanjaro Christian Medical Centre
KCMCollege	Kilimanjaro Christian Medical College
KCRI	Kilimanjaro Clinical Research Institute
KNUST	Kwame Nkrumah University of Science and Technology
MCDC	Malaria Capacity Development Consortium
MoH	Ministry of Health
NACTE	National Council for Technical Education
NIMR	National Institute for Medical Research
PHH	Platform on Human Health
RCH	Reproductive and Child Health
SUA	Sokoine University of Agriculture
SUZA	State University of Zanzibar
TOT	Training of Trainers
UG	University of Ghana
UD	Universities Denmark
WP	Work Package
ZCHS	Zanzibar College of Health Sciences

Summary of proposal

Poor health constitutes a significant barrier to the economic and social development and places a tremendous burden on millions of individuals, in developing countries. As a consequence improved health status is a prerequisite for achieving many of the Millennium Development Goals. Support to the health sector has been and remains a main focus area for Danish development assistance, and Danish universities already have a long-standing tradition in research for health and capacity building in partnership with institutions in sub-Saharan Africa and Asia. Improvements to health in developing countries rely on a comprehensive knowledge of the biological, economic, political, sociological and environmental determinants of health as well as a profound understanding of the important role that health systems play in the process. Therefore in its efforts to build strong capacity in research and post graduate education the PHH will work across sectors, disciplines, institutions and departments.

The Platform on Human Health supports universities and institutions of higher learning in developing countries to produce the next generation of even better qualified health professionals and to support evidence-based policy making at all levels of society. A robust higher educational system is also needed to facilitate the transfer of knowledge about international advancements in science and to enable developing countries to contribute to the body of global research on important health topics affecting their lives, thus becoming a voice for change. Despite increased demand for research and research based education in the developing world, investments in building the institutions required to deliver these services have not been sufficiently prioritized and too often capacity development efforts have focused solely on training individuals and on individual research projects. The Platform on Human Health's approach advances previous capacity development efforts by applying a coherent strategy that integrates support for strengthening postgraduate education, creating sound research environments and developing institutional capacity based on needs, both current and future, as identified by partner institutions and relevant to the national context in which they operate.

During first phase (2011-2013) of the BSU initiative, the Platform on Human Health will focus on forming partnerships with four groups of universities and research institutions including one in mainland Tanzania (Kilimanjaro Christian Medical Centre and the National Institute for Medical Research), one on Zanzibar (State University of Zanzibar and Zanzibar College of Health Sciences), and two university partnerships in Ghana (The Kwame Nkrumah University of Science and Technology and the University of Ghana). The partnerships in the South are located in countries where Denmark already provides support to the health sector and build on strong existing collaboration between the Danish and African institutions that provide a solid foundation where upon new initiatives can be built. The activities presented in this proposal for 2011-2013 have been selected in close consultation with all involved partners. In this process, strategic plans and shortcoming of the partner institutions, the possibility for alignment with existing programs, national health priorities, strategies for Danish development assistance and the areas of strength in research and capacity building among Danish partner universities were all considered.

It is of great importance to acknowledge that investments aimed at institutional capacity development will be specific to the given context and the capacity of the individual institution. In Ghana and in mainland Tanzania, priorities include upgrading the academic qualifications of existing staff members, building a stronger PhD program and supporting an enabling good research environments. In Zanzibar establishing research based Master postgraduate education programs was identified as a priority area, in addition to upgrading the competencies of existing staff members in research methodologies. In all partnerships institutional capacity building takes center stage. and the program outlined in this proposal is seen as initial steps in a long-term collaboration.

A detailed governance structure has been developed to manage, monitor and evaluate the partnerships and activities under the Platform on Human Health and an innovative web-based project management tool will be introduced to support these procedures and will connect all PHH partners across the countries.

Introduction

Global inequities in human health are excessive and place an enormous burden on the poorest members of society. They constitute a significant barrier to the economic and social development of nations. Thus, improved health status is a prerequisite for achieving many of the Millennium Development Goals. Danish development support to the health sector continues to be a main focus area and is seen as one of the most important cross cutting themes in Danida supported programs. Furthermore, Danida has maintained a specific focus on reproductive and child health and sees women's health as a core element to promote women's rights.

It is well known that infectious diseases disproportionately affect the poor. At the same time, the transition in disease burdens is resulting in a shift to chronic and non-communicable diseases, which are greatly affecting underprivileged societies. Many developing countries are challenged to respond to these new health problems due to weak health systems, inadequate food safety, nutritional deficiencies, irrational drug use and cultural, societal, gender-based and environmental barriers to health improvements.

Evidence-based decision making to improve health relies on a comprehensive knowledge of the biological, economic, political, sociological and environmental determinants of health. Knowledge about the capacity of the health system and society at large is also needed to implement changes. Most global health research resources (90%) are aimed at solving health problems facing people in affluent parts of the world. Only 10% of the global research and development portfolio is directed towards the health problems of the poor, despite the obvious need to generate new tools and implement new health improvement strategies in developing countries.

In order to ensure sustainability and decrease Northern dependence, leadership of high quality health research in developing countries should be the domain of local public institutions and private industry. Unfortunately during the past 25 years many developing countries have not achieved to make the required investments in higher education resulting in a weak tertiary education and research environment. Despite increased demands for research and research based education in the developing world, the human resources needed to deliver these services are insufficient and the researchers trained during the 70s and 80s are retiring and the local cadre of junior and mid level researchers is thin.

Over the past 25 years Danish institutions have, increasingly invested resources in developing partnerships with institutions to support research, institutional and human resources in the field of human health in developing countries. Danish partners have a long tradition of collaboration through joint projects and for the past ten years have worked together in a formalized network with a common secretariat. Today, Denmark has leading international research and educational units across many disciplines addressing key health challenges in developing countries. Therefore, the Danish research for health community appreciates the goals established for the Building Stronger Universities (BSU) and has initiated the formation of the Platform on Human Health (PHH). The PHH advances the previous efforts of capacity development by applying an even more coherent focus on institutional capacity development. The investments in human development and research programs undertaken as part of the PHH will always aim to increase the institutional capacity of the partner institutions in response to identified needs and future demands.

During the first phase (2011-2013) of the BSU initiative, the Platform on Human Health (PHH), will focus on forming partnerships with universities and research institutions in Tanzania mainland, Zanzibar and Ghana, locations where Danida provides substantial support to the health sector. The Danish partners of the PHH represents six Danish universities (DU), University of Aarhus, Aalborg University, University of Copenhagen, University of Southern Denmark, Roskilde University and Technical University of Denmark, the university hospitals in Copenhagen, Odense and Aarhus, and one sector research institution, State Serum Institute.

Building on already existing collaborations between the Danish and African universities provides a solid foundation upon which new initiatives can be developed. The PHH's planned activities reflect national and institutional priorities, with the exclusion of major infrastructural investments, and are based on intensive consultations between partners. All partners see the two-year programs outlined in this application as initial steps in a long-term collaboration.

The PHH has established a set of principles to guide the proposal development process and the implementation of activities:

- As a first priority the PHH considers the institutional needs of partners in the South, secondly, reflects on the current and expected future priorities within the health sector of the countries where the partner institutions are located
- The PHH relates to the priorities for Danish development assistance at overall, country and sector levels
- The institutional, educational and research priorities of the PHH should match areas where the Danish partner institutions have significant and relevant international expertise
- Activities supported by the PHH must focus on achieving long-term sustainability, taking into consideration human capacity and managerial, infrastructural and financial aspects
- The partnerships between Southern and Danish institutions will build on established partnerships and will include transparency and equality in decision making
- The PHH will initially focus on a limited number of countries partners to increase impact and may gradually increase the number of partners
- Activities of the PPH must have the backing of the top management of the Southern partner institutions, be aligned with other ongoing national or international initiatives and must never be stand alone activities but designed to become fully integrated within the programs of the partners
- To foster knowledge sharing and increase development impact, partners from government, private sector and civil society will be consulted and considered partners in defining research and educational strategies and as users of research based knowledge and education

1. Relevance of the scientific focus areas and proposed activities for development

1.1. Relevance of the chosen scientific focus areas vis-a-vis national South priorities

The scientific focus areas reflected in the activity plan of the first phase of the PHH align the institutional and health systems priorities and needs in partner countries with competences at the Danish partner institutions. The research areas chosen can be addressed from the biomedical, public health and social science perspectives and activities outlined are designed to engage a sound mix of researchers from different institutions and departments.

1.1.a. Tanzania mainland

The scientific focus areas in the first phase of the PHH in Tanzania mainland will include:

- Prevention, management and control of major infectious diseases (HIV/AIDS, malaria, tuberculosis, selected neglected tropical diseases and human papillomavirus) with a focus on the relevance to sexual and reproductive health and child health
- Interaction between these major infectious diseases and emerging non-communicable diseases (metabolic diseases).

The scientific focus areas are in line with national strategies. The "Tanzanian National Health Research Policy" from 2007 lists major infectious diseases, sexual and reproductive health, child health and non-communicable diseases as the top health research priorities. The focus areas are also aligned with the Tanzanian Health Sector Strategic Plan III (HSSP III 2009-2015), supported by Danida, which also lists reproductive and child health, and communicable and non-communicable diseases as priority areas.

Tanzania's health policy recognizes the importance of research and the use of research findings in improving health service delivery. The National Strategy for Research for Health presented in the document "Tanzania National Health Research Priorities" highlights the continued need for research on major infectious diseases, but also a need for research on non-communicable diseases in the light of their emergence as being of major importance. The need for addressing the consequences of the so-called double burden of diseases is repeatedly emphasized. In addition, the need for a dramatic increase in the availability of health care professionals is highlighted, presenting a significant challenge for the national institutions of higher education.

1.1.b. Zanzibar

The scientific focus areas in the first phase of the PHH in Zanzibar will include

- Reproductive and child health
- Environmental health with a focus on water supply, sanitation and personal hygiene

These scientific focus areas are in line with national health priorities. Reproductive health carries a high priority in Zanzibar as indicated by its prominence in key strategies including the "Zanzibar Strategy for Growth and the Reduction of Poverty", the "Health Sector Reform Strategic Plan II (2009-2015)" and in the "National Essential Health Care Package". The Government of Zanzibar is particularly committed to meet Millennium Development Goal 5: "Reduce by three quarters the maternal mortality and to increase the proportion of births attended by skilled health personnel." An important point of reference for the work in Zanzibar is a comprehensive strategic plan entitled "The Road Map to Accelerate the Reduction of Maternal, Newborn and Child Mortality in Zanzibar 2008-15" recently developed by the MoH in collaboration with supporting development partners, including Danida. Environmental health is considered by the MoH and other key ministries as one of the main priorities of the collaboration within the PHH, with a particular emphasis on water supply, sanitation and personal hygiene. It is an increasing national priority to strengthen preventive measures and preparedness in relation to outbreaks of epidemics and natural disasters. In addition, the need for increased capacity to produce health care professionals, across all fields, is highlighted by the MoH.

1.1. c. Ghana

The scientific focus areas in the first phase of PHH in Ghana will include:

- Prevention, management and control of major infectious diseases
- Environmental health with a focus on sanitation, hygiene and waste management
- Health services and financing.

Health is an important strategic element in the development plan for Ghana as formulated in "Ghana Shared Growth and Development Agenda 2010-2013". Similarly, tertiary education is considered crucial and the plan presents key issues in relation to the limited access to quality tertiary education. The growing demand for specialized university programs in Health and Allied Sciences is especially highlighted. Research is an important element in the Health Sector Medium Term Development Plan for 2010-2013. One of the seven key challenges identified here is inadequate monitoring processes and research for tracking progress and outcomes and for developing evidence-based policies. The need to strengthen research capacity cuts across most strategies.

The selected scientific focus areas are in line with the health research agenda developed in relation to the Danida supported Health Sector Program of Work for 2007-2011. A priority action for 2011 is to develop a national health research agenda through the preparation of a new "Strategy and Action Plan for research for health in Ghana". This will include a comprehensive framework for monitoring and evaluation. This task is in the hands of the MoH in collaboration with other stakeholders in Ghana. It is strongly anticipated that the focus areas selected for PHH will remain of high priority in the new Strategy and Action Plan under development.

1.2. Relevance of the scientific focus areas vis-a-vis Denmark's development cooperation

As evidenced by Danida's Guidance Note on Health and Development, support to the health sector has been one of the key focus areas for Danish development assistance and continues to be so. Human Health is seen as one of the most important cross cutting themes in all Danida support with an allocation of approximately

9-10% of the overall development assistance. Danida has a strong focus on reproductive and child health as well as HIV/AIDS and has seen women's health as a core element to promote women's empowerment. It is thus stated that "Denmark will step up its effort to improve sexual and reproductive health and rights" and that women must have access to essential health services during pregnancy and child birth from qualified healthcare staff. The Guidance note on Health and Development also places emphasis on research into health systems and financing, control of major infectious diseases, human nutrition, water and sanitation, neglected tropical diseases and the emerging epidemic of non-communicable diseases. There is a clear match between these priorities and the scientific focus areas of the PHH collaboration.

Other areas of priority in Denmark's Development Cooperation strategy include growth and employment and climate change in relation to sustainable management of natural resources. Activities within these areas may have either positive or negative consequences for human health. In fact, improved human health should be among the key performance Indicators when assessing impact of activities within other sectors. Issues related to stability, democracy and rights are also given priority in the strategy, and human health is an extremely crucial related element. With an inter-sectorial and inter-disciplinary entry point, the health sector remains a central element of Denmark's development cooperation. The PHH South partners' choice of environmental health in Ghana and Zanzibar as a scientific focus area bridges the different sectors well and provides a relevant entry point for collaboration between the different BSU Platforms.

1.2.a. Tanzania mainland and Zanzibar

Denmark has supported the health sector in Tanzania mainland for decades and in Zanzibar since 2004. The fourth phase of Danish support to the Tanzanian health sector covering the period 2009-2014 comprises a budget of DKK 910 million divided between Tanzania mainland, Zanzibar and the multi-sectorial response to HIV/AIDS. As described above, the scientific focus areas selected by PHH South partners for mainland Tanzania and Zanzibar are in agreement with Danida priorities as well as national strategies. In Zanzibar, reproductive health features prominently in the Danida Health Sector Program Support to Zanzibar. In response to a direct request from the MoH, Danida supported activities include documenting the magnitude of maternal mortality and morbidity in health facilities in Zanzibar, implementing a maternal death audit and a research project aimed to improve skilled delivery attendance.

1.2.b. Ghana

All PHH project activities will aim to strengthen health research capacity and provide the basis for evidence-based policies and indirectly enhance the effectiveness of the Danish Health Sector Program Support. In Ghana the Health Sector Advisory Office recently closed and the huge documentation center was transferred to the University of Ghana, School of Public Health. The strengthening of the School of Public Health as a key player in the health sector will thus directly contribute to the sustainability of the development contribution of the Danish Development Cooperation.

Danish support is intrinsically linked to the implementation of "Ghana's Health Sector Medium-Term Development Plan". In addition to financial transfers, long term technical assistance has been provided in relation to health economics, public financial management, and institutional development and health system strengthening. Key focus areas in the policy dialogue have included sexual and reproductive health and rights, service delivery to the poor and primary health care. The scientific focus areas chosen by PHH for Ghana, combined with the project activities aiming at institutional strengthening, are thus fully coherent with the strategies of Denmark's development cooperation with Ghana.

In a medium-term perspective the proposed activities will result in improved tertiary education in health, which will strengthen the human resource base of the MoH and relevant public health institutions. This will sustain and improve a meaningful policy dialogue and increase the capacity to translate international research to the benefit of public health in Ghana, a priority of Danish support.

2. Addressing the needs of the partner institutions

2.1. Relevance of involved South partner institutions

A detailed analysis was conducted of previous and ongoing Danish research and research capacity building collaborations to identify which universities would be most appropriate for inclusion in Phase I of the PHH.

The University of Ghana (UG) and Kwame Nkrumah University of Science and Technology (KNUST) in Ghana and Kilimanjaro Christian Medical Centre (KCMCentre) in Tanzania mainland emerged as obvious choices based upon the frequency, relevance and impact of previous and ongoing collaboration with DU partners. The inclusion of the MoH entity National Institute of Medical Research (NIMR) in Tanzania mainland provides a unique opportunity for bringing research into practice and for research based strategy and policy development. In order to make use of the entire resource base in Zanzibar the PHH partners have chosen to unite as a consortium of partners including the State University of Zanzibar and the College of Health Sciences directly under the Ministry of Health.

2.1.a. Tanzania mainland

Kilimanjaro Christian Medical Centre (KCMCentre): KCMCentre hosts the Kilimanjaro Christian Medical College, KCMCollege and Kilimanjaro Clinical Research Institute (KCRI). KCMCentre is operated by the Good Samaritan Foundation, a non-governmental ecumenical, non-for-profit organization. KCMCentre is one of four referral hospitals in Tanzania mainland, and has more than 500 in-patients beds with a catchment area of more than 16 million people. KCMCollege is a constituent component of Tumaini University, which is Tanzania's largest university. The college offers 16 health-related degrees and has more than 1100 students making it the second largest academic health training institution in Tanzania. KCMCollege is organized in 3 Faculties (Medicine, Nursing and Rehabilitation Medicine) and three Directorates (Allied Health Sciences School, Postgraduate Studies and Research and Consultancies). The College offers postgraduate speciality training in the form of 12 different Master of Medicine programs with clinical and academic focus), a Master of Public Health, and PhD training. The main undergraduate training activity is the MD program with an annual uptake of 120 medical students, but there are also several BSc programmes in Nursing, Health Laboratory Sciences, Prosthetics and Orthotics and Physiotherapy. KCRI was established to facilitate research and research training at KCMCentre. It has good office (including IT) and training facilities for pre- and post doctoral scientists, as well as a Clinical Trial Unit and the Biotechnology Laboratory. As described below, KCMCollege has had strong links to Danish institutions since 2000.

National Institute for Medical Research (NIMR):

The National Institute for Medical Research (NIMR) is a Government institution mandated to coordinate, monitor and conduct health research in Tanzania mainland. It employs 134 scientists (32 PhD, 72 Master and 30 Bachelor degree holders). The NIMR infrastructure includes: Headquarters (Dar es Salaam) and 13 research centers and field stations around the country. Based on the critical mass, NIMR is participating in teaching at different high learning institutions within Tanzania mainland and abroad. NIMR scientists also take part in supervision of undergraduate and postgraduate students from universities within Tanzania and abroad. Since its inception in 1979 NIMR has had strong collaborative links with Danish research institutions. The research and research capacity strengthening activities have involved a broad subject area involving several NIMR Centres. During the last 10 years NIMR, KCMC, London School of Hygiene and Tropical Medicine and University of Copenhagen have had a strong collaboration rooted in The Joint Malaria Programme (JMP), which operates under a joint MoU with a steering and coordination committees, and administrative offices. During the last 10 years JMP has established an intended research infrastructure including three modern laboratories (Moshi, Korogwe and Tanga), several insectaries, and facilities for large hospital and field based studies. JMP scientists have been undertaking large clinical trials; conducted basic laboratory based research and executed comprehensive studies within the social sciences. More than 200 papers have been published and the external support for JMP activities exceeds 25 million US\$. In addition to the collaboration centred on malaria, NIMR and Danish research institutions have over the past two decades completed significant research and capacity development programs focusing upon control of parasitic diseases, reproductive health, health services and more recently initiated programs on prevention and management of non-communicable diseases.

2.1.b. Zanzibar

PHH's partners comprise the State University of Zanzibar (SUZA) and the Zanzibar College of Health Sciences (ZCHS) under the Ministry of Health (MoH). These are the two key institutions in Zanzibar with responsibilities within the field of health in relation to human resources, education and research. A policy process is presently ongoing to define the future organizational structures aimed at an increased formalized collaboration between the two institutions.

The involved institutions in Zanzibar need to be strengthened markedly before becoming research centers of

excellence and before becoming providers of high quality research-based education in health sciences. In order to maximize the impact of the collaboration with PHH the partners in Zanzibar have chosen to join hands in a consortium to make use of the entire resource base. Hereby a joint and integrated capacity building approach can be pursued that closely links and integrates health related knowledge transfer, education, documentation, and research efforts between the institutions and at the same time influence policy making and implementation levels. PHH Zanzibar will as its point of departure make use of and build on selected ongoing activities as a starting point for building a conducive research environment and a post-graduate research based program. Over the past decade partner institutions on Zanzibar have worked with Danish research institutions in the fields of reproductive health, control of parasitic diseases and environmental health.

State University of Zanzibar (SUZA): SUZA offers certificate, diploma and bachelor's degree programs and has 814 BA/BSc students (2010). The first PHH environmental health activities will be hosted by the Department of Science, holding 31 academic staff. However, SUZA aims in its five-year rolling strategic plan at the establishment of a School of Health Sciences, based on a close collaboration with the Zanzibar College of Health Sciences. SUZA has identified the need for and is in the process of strengthening the academic qualifications of its human resources. A training and staff development policy as well as a staff appraisal policy is in the making.

Zanzibar College of Health Sciences (ZCHS):

The ZCHS has a long tradition since the first School in Health (the School of Nursing), was established in 1938 at Sir Tayaballi Karimjee Jivanjee Hospital currently known as Mnazi Mmoja Hospital. In 1996 the College started awarding Diploma and Certificate level courses. In 1998 other courses were introduced, amongst others: Clinical Officers, Dental Assistant, midwifery, and Public Health Nurse "B" course. Recently the college has been registered and accredited by National Council for Technical Education (NACTE) and it is now recognized countrywide. The College of Health Sciences presently offers 7 courses in four key areas including Reproductive Health and Environmental Health sciences. ZCHS has 961 registered students and employs 25 academic staff. A team from the MoH, complemented with one staff member of the college, recently performed an institutional needs assessment. Findings from this assessment resulted in African Development Bank and Danida currently funding staff upgrading programs but increased efforts are needed. Staff is motivated, and the recently appointed management are very supportive. Thus upgrading of current staff is considered a priority and there is need to employ more staff, preferably with a pedagogic background in specific topics. Staff needs to be guided and oriented towards research, which can be done in concert with SUZA to broaden the number of research topics covered.

2.1.c. Ghana

The main partners in Ghana are the Colleges of Health Sciences at University of Ghana (UG) and Kwame Nkrumah University of Science and Technology (KNUST). The partner institutions possess the necessary experience, facilities, academic background and governance to provide PhD education. Through international collaborations, including extensive, long-standing collaborations with Danish Universities (see below), UG and KNUST have attained high international standing. UG and KNUST will be equal level partners to PHH, however in the initial phase 2/3 of BSU funding will be managed by UG and 1/3 by KNUST. UG and KNUST have worked with Danish institutions on a large number of research and capacity development projects over the past two decades including in the fields of malaria, environmental health, health economics, neglected tropical diseases, medical anthropology and health services.

University of Ghana (UG): UG is located in Accra, Ghana's capital city. The University was started in 1948. The mandate of the University is to provide for and promote university education, learning and research. The current student population is 45,000. UG has two Colleges – College of Health Sciences and College of Agriculture and Consumer Sciences- and 6 faculties – Arts, Law, Science, Social Studies, Business School and Engineering Sciences. The College of Health Sciences was established in 2000 and it comprises of 6 schools and a research institute. The research institute of the College is the Noguchi Memorial Institute for Medical Research and the schools are the University of Ghana School of Public Health, University of Ghana Medical School, the University of Ghana Dental School, the School of Allied Health Sciences, the School of Nursing and the School of Pharmacy. The College of Health Sciences runs undergraduate and postgraduate programs in all its schools. The College of Health Sciences has a teaching

faculty size of about 200 and about 2500 students at all levels. The College has a PhD student population of 38.

The Kwame Nkrumah University of Science and Technology (KNUST): KNUST is located in Kumasi and acquired full university status in 1961. It has presently a student population of 27,000. Its mission is to provide an environment for teaching, research and entrepreneurship in Science and Technology for the development of Ghana and Africa. Administratively KNUST is made of six Colleges. The College of Health Sciences is composed of the Faculty of Pharmacy and Pharmaceutical Sciences, School of Medical Sciences, the Faculty of Allied Health Sciences, the Dental School, the School of Veterinary Medicine and the Kumasi Centre for Collaborative Research into Tropical Medicine. The College provides an umbrella organization for teaching, research and service to the community in health. It runs undergraduate and postgraduate programs towards meeting the manpower needs of the health sector and health training institutions in Ghana.

In addition, Ghana Technical University College has been approached to discuss possible collaborative activities on IT and Health during the first project phase and more direct involvement in the second project phase, depending on the partners' priorities and resources available.

2.2 The dialogue and partnership process

2.2.a. Tanzania mainland

After informal consultations between DU representatives and the Tanzania mainland institutions, the Executive Director of KCMCentre and the Director General of NIMR were formally invited to participate in PHH in November 2010. The institutions accepted the invitation and hereafter a series of meetings were held among leading staff at KCMCentre and NIMR. Late November 2010 a joint KCMC/NIMR meeting was held at KCMCentre with the aim to discuss a Needs Assessment report prepared at KCMCentre and to discuss how KCMC and NIMR could join efforts as members of PHH in Tanzania mainland. In December 2010, a 3 day workshop with participants representing KCMCentre, NIMR, MoH and DU was held at KCMCentre. After initial presentations of the participating institutions, the BSU initiative, and the overall PHH aims the workshop discussed the needs assessment prepared by the Tanzania mainland institutions and the most effective way to address the identified needs. It was decided that the PHH activities should address 1) recruitment and retention of midlevel scientific staff at KCMCentre, 2) improvements in PhD education and 3) general institutional strengthening. Sketch activity plans were prepared. These plans were discussed more widely at KCMC and NIMR before the second workshop with representatives from KCMCentre, NIMR, the Danish Embassy, MoH and DU representatives was held in March 2011. During this workshop one day was used to define the scientific focus areas based on national and institutional priorities. During the second day formal work package plans were outlined and budgeted with reference to the scientific focus areas chosen and the three priority areas formulated during the first workshop. During the third day the participants began to formulate the present application, which have been finalized through intense e-mail exchanges between the partners.

2.2.b. Zanzibar

Based upon already established collaborative links between Danish institutions and partners in Zanzibar the planning process was initiated. To guide the process of assessing needs, priorities and plans for collaboration under PHH a working group representing all institutional partners in Zanzibar, including also the MoH and the Danida HSPS office in Zanzibar was formed. Based upon document reviews and discussions in the group four priority thematic areas were identified for further assessment including environmental health; reproductive and child health; research methods including epidemiology; and health care management and planning. It was decided to support the process through the involvement of two consultants focusing upon institutional, research and educational needs in environmental health and reproductive health respectively. The reports produced by the consultants were presented and discussed at two separate stakeholder workshops with representatives from government, donor and civil society. A final proposal drafting workshop was conducted in March 2011 to formulate the objectives, work packages and related budgets. The working group has been the driver through the entire process of collaboration. The Danida supported Health Sector Program Support office in Zanzibar has covered local expenses related to the institutional and thematic needs assessments and are already committed to support selected future PHH activities within the fields of environmental health and reproductive and child health.

2.2.c. Ghana

In the course of the longstanding collaboration between researchers in Ghana and Denmark there has for decades been a dialogue centered on the need of strengthening tertiary education and research. The BSU initiative has provided a framework for a more structured dialogue, initiated at meetings between PHH representatives from the Danish side and Provosts and Deans of the Colleges of Health Science in UG and KNUST in November 2010. These meetings were followed by visits to Denmark by the Vice Chancellor of UG and subsequently by the Provost from UG College of Health Science and a professor from the School of Public Health who visited several universities in Denmark for inspiration and dialogue. Opportunities for collaboration were explored in more details at a 2-day workshop in Ghana with wide representation of key stakeholders from both Ghana and Denmark. During this workshop the main activities and scientific priorities presented in the work packages in this proposal were outlined. The preparation of this application has subsequently taken place in close collaboration and continued dialogue with a designated writing group in Ghana.

2.3 Needs of the partner institutions and the match with the proposed activity plan

PHH will be active in Ghana, Tanzania mainland and Zanzibar. In Ghana as well as in mainland Tanzania, emphasis will be given to strengthen existing postgraduate educational programs. The proposed activities in Zanzibar will address more basic needs related to the initial establishment of a platform for research and research-based education in human health.

2.3.a. Tanzania mainland

The process that went into writing of the present proposal is described above. However, the discussions were based on the “KCMCollege strategic plan for 2006-2015”, an institutional assessment of KCMCollege funded by Danida in 2005, on an evaluation of PhD training at KCMCollege conducted by the Malaria Capacity Development Consortium (MCDC) in 2010, “The strategic plan of KCRI for 2010-2015” and on the Joint Malaria Programme strategic plan for 2010 – 2015. These assessments and strategies all clearly identify the need for a strengthening of the existing postgraduate education program at KCMCollege in order to produce well trained health research professionals as promoters of research based education, high quality health research and improved health indicators for the region. In addition, the NIMR strategy for 2008-2013 clearly points towards the needs for closer links between NIMR and the university sector. As detailed above, the activity plan is based on a needs assessment conducted by the Tanzania mainland institutions with due consideration to existing institutional strategy plans. For KCMCollege it was found essential to strengthen the existing postgraduate education program. Taking together, the three work packages coherently address this need by 1) developing an enabling research environment in which the postgraduate program can be anchored (research), 2) developing the necessary administrative support structures for effective and efficient running of the postgraduate training program (institutional capacity building), and 3) developing and implementing courses and supporting individual PhD and MSc student projects (human capacity building).

2.3.b. Zanzibar

Zanzibar is in the early process of developing an enabling research environment and a platform for research-based higher education in health and health related issues. This includes a close collaboration between SUZA and ZCHS. PHH aims at contributing effectively and efficiently to the process, on a long-term basis by supporting development at both SUZA and ZCHS addressing institutional capacity as well as human resources capacity needs.

The proposed activity plan responds to priority needs identified among the partners in Zanzibar. The proposed activities will address 1) upgrading of staff in research methodology as a background for increased attention to research-based education and for increased staff involvement in research, 2) upgrading of key staff to the MSc and PhD level, and 3) building essential institutional capacity (curriculum development, management, library resource centres). The support to the specific thematic areas, i.e. environmental health and reproductive health, represents a relevant entry point to getting the process well anchored at the partner institutions.

2.3.c. Ghana

There is a pressing need to increase the number of PhD programs and the output of PhD students in Ghana. This is partly due to the inadequate number of appropriately qualified doctoral level faculty to supervise graduate students. Both UG and KNUST have revised their regulations so that holding a PhD degree is a

requirement for all lecturers and professors. This change in regulations has great implications due to a limited capacity to provide PhD education, a very low lecturer : student population ratio, and insufficient funding and infrastructure for research. Most research in Ghana is funded through collaboration with external partners that, in many cases, does not provide PhD opportunities for Ghanaians. Direct funding for PhD education, increased access to research funding with principle investigators from Ghana and better utilization of externally funded research – all of which are covered in this application – will thus significantly contribute to meet major needs of the partner institutions.

The current PhD education in Ghana is entirely research based. Recent reviews at the partner universities indicate that this system results in the production of highly specialized PhD holders, sometimes with limited effectiveness in teaching of undergraduate and Master students. The universities have thus revised PhD regulations so that all PhD programs will have mandatory course content. This creates an urgent demand for PhD courses, both generic and topic specific, and an upgrade of the PhD curriculum with particular focus on course development and a research environment that enables a strong PhD program.

As detailed above the activity plan is based on a needs assessment with due consideration to existing institutional strategy plans and a focus upon the alignment of proposed activities with ongoing or planned activities. Like in Tanzania mainland it is essential for KNUST and UG to strengthen the existing postgraduate education programs, coherently addressing this need through 1) developing an enabling research environment in which the postgraduate program can be anchored (research), 2) developing the necessary administrative support structures for effective and efficient running of the post graduate training program (institutional capacity building), and 3) developing and implementing courses and supporting individual PhD and MSc student projects (human capacity building).

3. Scientific/academic strength of the participating Danish researchers

Danish universities have a long-standing tradition for research in global health with a focus on sub-Saharan Africa. Danish research groups in areas like malaria, HIV/AIDS, neglected tropical diseases and reproductive and child health are internationally high ranking. Danish research groups are commonly members of larger international consortia and the publication activity in high-ranking international journals and attraction of external funding for research has been very comprehensive.

3.1. Documented quality of the research within the scientific focus areas

The eight CVs selected for inclusion in Annex I provide examples of senior researchers with a long-term involvement in capacity development and research for health within scientific focus areas and in countries that will be in focus during the first phase of PHH. However, the Danish partner institutions represent a large and diverse resource base beyond the focus areas represented by the selected CVs. This significant resource base will be utilized to ensure relevant research, educational and supervisory inputs and will provide an opportunity to address new areas of research during future phases of the PHH.

3.2. Key staff resources within scientific focus areas

Scientific staff employed at the PHH Danish partner institutions having an almost exclusive scientific focus on research for health in developing countries count 27 professors; 24 associate professors; 20 senior researchers, 26 assistant professors and 25 Post Docs. In addition these institutions employ approximately 30 visiting professors and external lecturers to support education and supervision.

Table. 1. : Selected key researchers within PHH scientific areas in addition to the names presented with CVs

Scientific focus area of main priority in phase one	Name	Title	*Peer reviewed publications	Supervised South PhD	Supervised South MSc
Infectious diseases	Christian Wejse	Senior researcher	29	2	1

Infectious diseases and Health Services	Pascal Magnussen	Senior Researcher	139	33	3
Infectious diseases and HIV/AIDS	Jens Lundgren	Professor	200	0	1
HIV/AIDS; gender and health	Lisa Ann Richey	Professor	28	1	0
Infectious diseases and Malariology	Lars Hviid	Professor	143	5	2
Infectious diseases and Malariology	David Arnot	Professor	98	7	7
Infectious diseases and Malariology	Michael Alifrangis	Assistant Professor	56	0	5
Infectious diseases and TB	Peter Andersen	Professor	245	0	0
Health Communication	Thomas Tufte	Professor	38	1	1
Health Services and Financing	Ulrika Enemark	Associate Professor	8	4	2
Health Services and Medical Anthropology	Helle Samuelsen	Associate Professor	25	0	25
Neglected Tropical Diseases	Maria Vang Johansen	Professor	104	7	4
Neglected Tropical Diseases	Paul Erik Simonsen	Senior Researcher	102	13	2
Neglected Tropical Diseases and Environmental Health	Niels Ørnbjerg	Director, Section head	130	20	5
RCH (reproductive and Child Health)	Peter Aaby	Professor	448	10	33
RCH	Freddy Karup Pedersen	Professor	96	2	2
RCH	Birgitte Bruun Nielsen	Associate Professor	14	1	2
RCH	Christine Stabell Benn	Senior Researcher	92	7	4
RCH and Biostatistics	Henrik Ravn	Senior Statistician	100	1	2
RCH and Health Services	Morten Sodemann	Professor	71	6	3
RCH and Medical Anthropology	Tine Gammeltoft	Associate Professor	40	3	8
Environmental Health	Anders Dalsgaard	Professor	140	14	6
Environmental Health and Disaster Management	Peter Kjær	Associate professor	19	0	14
Non Communicable Diseases	Maximillian de Courten	Professor	77	1	2
Non communicable diseases	Per Bendix Jeppesen	Associate Professor	45	8	7

Scientific focus areas likely to be included the future	Name	Title	*Peer reviewed publications	Supervised South PhD	Supervised South MSc
Oral Health	Poul Erik Petersen	Professor	97	14	66
Human Nutrition	Kim F. Michaelsen	Professor	247	2	0
Information Technologies for Health	Knud Erik Skouby	Professor	125	3	10
Information Technologies for Health	Reza Tadayoni	Associate Professor	70	3	6
Food Safety and Nutritional Deficiencies	Henrik C. Wegener	Director, PhD	87	3	0
Food Safety and Nutritional Deficiencies	Inge Tetens	Professor	82	1	3
Food safety and nutritional deficiencies	Frank Møller Aarestrup	Professor	282	3	3

***Publications include peer reviewed journal articles, books and book chapters**

3.3. On-going research projects within scientific focus areas

There are **more than 150 on-going research for health projects** conducted by Danish universities in partnership with research institutions in developing countries. Funding for the research derives primarily from international private foundations, EU, and US government research programs, secondly from Danish research councils and Danish private foundations. The great majority of these comprise a mix of scientifically focused research collaboration and human and institutional capacity building components.

The estimated total annual budget of the on-going projects amounts to DKK 205.000.000. Approximately DKK 90.000.000 is spent strictly on activities with a scientific focus.

85 % of this amount is spent on activities within the scientific areas of main focus in the first phase of the PHH. This includes infectious diseases, mainly malaria, TB and HIV, neglected tropical diseases, reproductive and child health, health systems and financing, co-morbidity between infectious diseases and non-communicable diseases, and environmental health. The remaining 15 % of the DKK 90.000.000 is used in support of activities in areas considered added to the future research collaboration within the PHH including climate change, disaster management and health, food safety and nutritional deficiencies, integration of information technologies in health, occupational health and safety, oral health and plant medicine.

4. Documented experiences of participating Danish researchers with human and institutional capacity building in developing countries

Danish universities and sector research institutions engaged with human health have comprehensive experience in building both human and institutional capacity at collaborating institutions and throughout Africa. The work conducted by the Danish resource base is internationally recognized by EU, Danida and private foundations as a “frontrunner” when it comes to building sustainable research capacity for health in Africa. Although much attention has been given to support individual PhD and Master students (human resources) attention has also been given to build the institutional capacity. The uniqueness in both the approaches and the outcome of capacity building activities anchored at Danish universities have been amply demonstrated in the ENRECA and Danida review reports and in frequent reviews of DBL-Centre for Health Research and Development (formerly the Danish Bilharziasis Laboratory). Also, the evaluations made of the

Master of International Health, hosted by the University of Copenhagen, highlight the contributions made by this program in training the human work force for health with more than 200 graduates from Africa and low income Asia over the past decade. In addition more than 60 students from Africa have obtained a PhD degree co-supervised by a Danish researcher, and the vast majority of these are now active professionals in Africa

The PHH represents a structured and well integrated approach to the implementation of activities which are already well known components of Danish North-South collaboration. This approach provides a strong background for sustainability of developments.

4.1. Projects with emphasis on human and institutional capacity building over past ten years

The estimated **average number of research for health projects involving a significant element of human capacity building in developing countries initiated in the period 2000-2010 amounts to more than 250**. The **estimated total annual budget related to activities in support of human capacity building, from 2000 to 2010**, e.g. staff upgrading and completion of project sponsored supervision of PhD and Master students **amount to a minimum of DKK 50.000.000**. This does not include the approximately 60 Master and MSc. students from developing countries completing a degree from Danish Universities each year in a human health related field financed individually or funded through Danish government or international fellowships. Also, this amount does not fully cover the many quality assurance procedural, health promotional or health research methodological oriented courses implemented by Danish research organizations in partnerships with US, EU or UN organizations, or national governments, in support of professionals in developing countries working in e.g. food inspections, drug quality assurance, clinical services, outbreak investigation or health information systems.

The **estimated average number of research for health projects involving a significant element of institutional capacity building activity in developing countries initiated in the period 2000-2010 amounts to more than 100**. The **estimated total annual budget used for activities with emphasis on institutional capacity building**, including support of research networks, mentoring, web support, laboratory and library infrastructure, training in research management and administration **amounts to a minimum of DKK 30.000.000**.

5. Proposed activity plan and budget

The rational and strategic elements of PHH aimed at increasing the institutional and research capacity of partner institutions are common across institutions. A central strategic element is the use of skills training and academic and research advancement to upgrade or recruit staff. However, it is essential to note that none of the human capacity building elements, including on-the-job training, MSc, PhD and Post Doc studies are stand alone activities but exclusively focused to support existing members of staff or as a means of attracting future staff members. At the same time the human resources investments are targeted the selected research focus areas and educational aims in a coherent manner. Similarly the post graduate courses must not be seen as stand-alone activities and not only as activities to address a particular topic specific demand but have been designed to support and facilitate structures for course accreditation, educational quality assurance, PhD program administration, reform of didactic approaches and experiences with web-based learning. Finally, research collaboration and research projects will be designed and implemented to increase the overall capacity of the institution to manage and implement research, attract funding and increase its international reputation and linkages. Acknowledging the common strategic elements it is an absolute necessity that investment aimed at institutional capacity building will be specific to the given context, based upon a detailed analysis, hence the variation of activities at the different institutions in the different locations.

5.1 Work packages

The proposed activities are described below as concise work packages addressing objectives, outputs, activities, and risks and assumptions. The initial phase will cover a 2 year period assumed to run from August 2011 to August 2013. Activities represent the initial phase in a long-term collaboration. Proposed activities for subsequent phases building on and extending phase 1 outputs and achievements are briefly outlined under *future plans* in the individual work packages. Time-bound milestones with clear indicators will be developed for each work package before launch.

It should be noted that work package presentations are set at the maximum core funding scenario of DKK 10 million per year. The implications of a reduced level of core funding at DKK 7 or 4 million on activity level and outputs is briefly outlined in the section below the work package presentations, and reflected in more details in the sub budgets in Annex II.

5.1.a. Tanzania mainland Work Packages

<p>Work Package Title: Postgraduate education</p> <p>Work Package No.: Tanzania mainland 1</p>	<p>Involved Partners: KCMC, NIMR and DU partners</p>
<p>Justification Formal training in research methodology and in topic-specific areas is a prerequisite for the production of high quality PhD and Master candidates. Course work therefore needs to become a mandatory element of PhD programs. A need therefore arises for strengthening existing courses and for development of new generic and topic-specific courses.</p>	
<p>Objective A course program consisting of both generic and topic-specific courses in place and PhD and Master projects initiated.</p>	
<p>Outputs</p> <ol style="list-style-type: none"> 1.a Mapping of existing course curricula of relevance for postgraduate training 1.b Updated curricula for the existing Master of Medicine course and for the course on Research Methodology 2. Curricula for 3 new courses (Health System Policy Research; Reproductive and Child Health; Research Program Management) 3. Three new and one updated course held 4. PhD projects for two PhD students ongoing within the research focus areas 5. Master projects for 5 Masters students completed or ongoing within the research focus areas 	
<p>Activities</p> <p>1. Review and updating of relevant existing course curricula: As a background for strengthening existing courses, a review of existing postgraduate courses will be conducted. This will include an analysis of whether existing courses at the Master programs can be adjusted for use as PhD courses. Particular attention will be given to the Master of Medicine course and to the course on Research Methodology. The curriculum for the latter course will be updated with due reference to existing courses at DU and at Sokoine University of Agriculture, Tanzania. This activity will be based on workshops, consultancies and tracer studies.</p> <p>2. Development of new courses: To provide new PhD students with a broad basis in health research, new courses will be developed addressing 1) Health System Policy Research and 2) Reproductive and Child Health. As a background for proper management of research, a course on Research Management will also be developed. This will take place through consultations and workshops involving relevant resource persons from various PHH and other BSU partner institutions as appropriate. The courses will be accredited at KCMCollege.</p> <p>3. Course implementation: The revised course on Research Methodology and the 3 new courses will be implemented. Teachers will be drawn from all PHH partner institutions.</p> <p>4. PhD and Master project implementation: Two PhD students will be identified and their studies initiated. The PhD students will work under co-supervision by the newly employed senior lecturers and by staff from DU. The PhD projects will address aspects under the identified research focus areas. Five Master students will be identified and their studies initiated/completed. Support to the Master students shall be seen as an element of improved recruitment of PhD students.</p> <p>Future plans: At the end of phase 1, progress is made towards the establishment of a fully fledged course program. From the outset of Phase 2, courses will again be offered and new courses will be developed according to new needs identified. Phase 2 will see many new PhD study registrations</p>	
<p>Assumptions and risks</p> <ol style="list-style-type: none"> 1) Updated and new courses accredited in time, 2) students can be identified, 3) projects exist which can cover field/lab work for PhD and Master students 	

<p>Work Package Title: Enabling research environment Work Package No: Tanzania mainland 2</p>	<p>Involved Partners: KCMC, NIMR and DU partners</p>
<p>Justification A postgraduate program of excellence must be anchored in an enabling research environment with excellent scientific projects and international collaboration. Retention and recruitment of junior and mid-level scientific staff is a key challenge for KCMCollege and a key element for further maturation of research programs and postgraduate training and education at KCMCollege. An enabling research environment will facilitate staff retention and recruitment and will lead to increased research quality, output and funding.</p>	
<p>Objective An enabling research environment built around the scientific focus areas in place</p>	
<p>Outputs</p> <ol style="list-style-type: none"> 1.a. Four new KCMCollege senior lecturers employed 1.b. Research activities involving colleagues from PHH initiated 2.a. Five contributions from NIMR staff to post graduate training and supervision provided 2.b. Ten research exchange visits between the South and the North conducted 3. A research proposal writing workshop conducted and 3 research proposals finalized 4. Mentorship and Personal Development Plan (PDP) in place 5. KCMCollege 2012 International Research conference conducted and prizes awarded 	
<p>Activities</p> <p>1. Staff recruitment: Recruitment of 4 senior lecturers with 50 % time allocated for research and 50 % for clinical work, teaching and administration. Subjects to be covered will include 1) immunology/molecular biology, 2) microbiology, 3) clinical research and 4) biostatistics and epidemiology. Salaries will be paid by KCMCollege. The new senior lecturers will be allocated a research grant by PHH to work with PHH colleagues within the specified research focus area. The PhD and Master students to be supported will be anchored in this new research environment.</p> <p>2. Exchange program for scientific staff: South-South and North-South interactions are essential for the success of the program. The exchange program shall facilitate 1) NIMR contributions to supervision and teaching at KCMCollege with PHH paying for up to 50 % of the contributions, 2) Tanzania mainland academic staff to visit Denmark (5 visits of 1-2 month duration), 3) staff to visit Tanzania mainland (5 visits of 1-2 month duration, funded via the North budget or in-kind contributions from DU partners).</p> <p>3. Research proposal planning, preparation and writing: A workshop will be conducted at KCMCollege to develop joint research proposals. Relevant DU researchers will participate as lecturers and future research collaborators.</p> <p>4. A mentorship and personal developing plan (PDP) program: Such a program will be developed to cater for post doctoral fellows and lectures. The program will build on a similar web- based activity developed by the Malaria Capacity Development Consortium (MCDC).</p> <p>5. KCMC International Research Conference: Presentation of key research achievements from KCMC/NIMR supplemented by a few invited speakers from the Region and further abroad. A KCMCollege research price will be given to the most successful research achievement at KCMCollege and 2 prizes will be given to the two students with the best research potential.</p> <p>Future plans: Activities during this first phase will contribute to the development of an enabling research environment at KCMCollege. The environment will mature further in subsequent phases of BSU with many externally funded high quality projects, increased international and national collaborations, many associated PhD and Master students, and a scientific output of high quality.</p>	
<p>Assumptions and risks:</p> <ol style="list-style-type: none"> 1) KCMCollege has the capacity to employ the new senior lecturers, 2) KCMCollege has the capacity to fund its part of the services which shall be provided by NIMR, 3) Relevant DU researchers are available for participation in the collaboration, 4) The mentorship and PDP programs are given priority by KCMCollege. 	

<p>Work Package Title: Institutional Capacity Building</p> <p>Work Package No.: Tanzania mainland 3</p>	<p>Involved Partners: KCMCollege and DU partners</p>
<p>Justification</p> <p>A postgraduate program of excellence can only be fully functioning if effectiveness and efficiency in support structures are high. The KCMCollege postgraduate program administration needs to be strengthened significantly to cope with the increasing intake of postgraduate students</p>	
<p>Objective</p> <p>Institutional capacity to sustain and ensure effectiveness and efficiency in the administration of the postgraduate program in place</p>	
<p>Outputs</p> <ol style="list-style-type: none"> 1. A revised postgraduate handbook prepared and placed on the web 2. Development of an attractive tenure track policy ongoing 3. Skilled supervisors in place 4. Development of a quality assurance system for postgraduate program ongoing; WorkEngine web based project management tool in operation 5. Strengthening of the postgraduate administrative office ongoing 6. Fundraising unit established 7. Student platform established 	
<p>Activities</p> <ol style="list-style-type: none"> 1. A postgraduate handbook: The existing KCMCollege postgraduate handbook will be updated in order to fit with new regulations, guidelines and requirements. Working groups will be established and a workshop conducted to achieve this important task. 2. Attractive tenure track policy: KCMColleges's staff attrition and recruitment challenges are mainly due to unclear promotion criteria and lack of transparency in career paths. Through involvement in workshops and consultations, PHH will contribute to review and update promotion criteria. 3. Supervisory skills. Many staff performing PhD supervision and mentoring have no formal training in pedagogical approaches and tools. Building such competences was pointed out as a recognized need in the needs assessment. Training of Trainers (TOT) courses will be provided for relevant KCMC and NIMR staff. These courses will build on the existing course developed under the Strategic Partnership Agreements (STRAPA) program between University of Copenhagen and universities in Tanzania, Kenya and Uganda. Twenty staff members will be trained. 4. Quality assurance system in postgraduate education: A needs assessment will be conducted by an external consultancy team and a plan for the development of a quality assurance system will be prepared and initial training implemented. Relevant staff will be trained in the application of the WorkEngine web based project management tool. 5. Postgraduate administrative office: The postgraduate administrative office needs to be strengthened. An action plan will be prepared based on a needs assessment conducted by an external consultancy team. Training of administrative office staff will be initiated. Initiation of KCMC Fellowship Program. 6. Fundraising unit: Fundraising is essential to achieve sustainability of the research environment. A fundraising unit will be established to provide support to the researchers regarding advocacy, funding opportunities, management and budgeting. 7. Student platform: PhD students will be supported in the development of their own forum linked to similar fora in DK with the aim to improve networking, prepare seminars, and meet with senior management to improve research and work environment, etc. <p>Future plans: Achievements during this first phase will contribute to an increased effectiveness and efficiency of the support structures to the postgraduate education program. Activities in subsequent phases will build on achievements made in phase 1. The work with the tenure track policy and the quality assurance system will be completed.</p>	
<p>Assumptions and risks:</p> <ol style="list-style-type: none"> 1) Activities are within the KCMCollege strategic plans, 2) active allocation of resources and political support from KCMCollege leadership, 3) availability of KCMCollege staff 	

5.1b Zanzibar Work Packages

<p>Work Package Title: Postgraduate education</p> <p>Work Package Number: Zanzibar 1</p>	<p>Involved Partners: ZCHS, SUZA and DU partners</p>
<p>Justification Building a conducive environment for health research and research-based education requires a further upgrading of academic staff. The need for further training in research-based approaches to higher education and research methodologies are greatly appreciated by staff and management. Courses on research methodology including small scale field research and scientific writing is seen as an essential next step.</p>	
<p>Objectives Human capacity to sustain research within reproductive health and environmental health and to promote a research-based approach to health education in place</p>	
<p>Outputs</p> <ol style="list-style-type: none"> 1. A PhD study within reproductive health for a staff member from College of Health Sciences (ZCHS) ongoing 2. A Master study for a SUZA staff member within environmental health ongoing or completed 3. 30 academic ZCHS and SUZA staff members trained in quantitative and qualitative research methodologies and in epidemiology and biostatistics 	
<p>Activities</p> <p>1. PhD study in reproductive health: A senior ZCHS staff member or alternatively another suitable candidate to be recruited by ZCHS will commence a PhD study within reproductive health. A conducive research environment will subsequently be built around this PhD candidate with support from DU partners. Registration will take place at KCMC and at a university in DK. The PhD project will be linked to ongoing Danida funded activities regarding reproductive health in Zanzibar and will take place in collaboration with MoH.</p> <p>2. Master study in environmental health: A senior SUZA staff member or alternatively a suitable candidate to become a SUZA staff member will commence/complete a Master project in environmental health. A conducive research environment will subsequently be built around this Master candidate. DU partners will play a major supervisory role. This master study will be linked to ongoing research activities within environmental health in Zanzibar.</p> <p>3. Research methodology courses: A 4 week basic course in research methodology will be developed and held for staff from SUZA and ZCHS. The course will address various issues related to qualitative and quantitative research methodologies, including ethical aspects and research communication. Two weeks out of the 4 weeks will be field work to build practical hands-on experiences. Quantitative methods will be further explored in a follow-up advanced course of 2 weeks duration on epidemiology and biostatistics. Focused research can take place in collaboration with MoH or other government departments.</p> <p>Future plans: At the end of phase 1, the Master student and the PhD student are well under way in their studies and the research capacity among SUZA and ZCHS staff has been increased. Activities in subsequent phases will build on this new platform. More courses will be established and more ZCHS and SUZA employed. More PhD and Master students will commence their projects. A conducive and enabling research environment within reproductive health and within environmental health is growing which can address gaps in knowledge with slow progress in meeting national health objectives and targets. Close collaboration between educational and research partners with MOH will be maintained. Collaboration with KCMCollege in Tanzania mainland is envisaged to develop from the outset to be expanded in Phase 2 of BSU.</p>	
<p>Assumptions and risks</p> <ol style="list-style-type: none"> 1) Candidates for the PhD and the MSc studies can be identified, 2) SUZA and ZCHS staff can be released for course participation, 3) Political support for close collaboration between SUZA and ZCHS top management 	

<p>Work Package Title Institutional capacity building Work Package No.: Zanzibar 2</p>	<p>Involved Partners: SUZA, ZCHS and DU partners</p>
<p>Justification SUZA and ZCHS both to a large extent apply traditional approaches to education. To make use of new opportunities, and new approaches in education new courses need to be developed. The introduction of problem-based and research based education, and in the longer term perspective also e-learning/blended learning, will create a good starting point for the creation of a conducive research and higher education environment</p>	
<p>Objective: Institutional capacity to sustain research-based education within reproductive health and environmental health in place</p>	
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Environmental health course accredited by Tanzania Council of Universities. 25 students trained annually with proven knowledge in environmental health with a focus upon water supply, sanitation and hygiene promotion. A Quality Assurance system and a business plan in place to run a sustainable course. 2. Course on reproductive health integrated into pre-service curriculum for Clinical Officers and Midwives in Zanzibar. Up to 215 students trained annually with proven knowledge in reproductive health. A Quality Assurance system and a business plan in place to run a sustainable course. 3. Appraisal conducted to guide adaption of environmental health, reproductive health and research methodology courses for distance learning. Initial partnerships identified at teaching institutions in partner countries (South and North). ZCHS and SUZA equipped with necessary logistics to introduce distance learning in line with national systems. 4. Resource centres at SUZA and ZCHS equipped and WorkEngine web based project management tool in operation. 	
<p>Activities</p> <ol style="list-style-type: none"> 1. A 4 week environmental health course: This course will be offered annually from September 2011 as part of a degree program at SUZA. The course will focus on water, sanitation and hygiene theory and practices in a national and international context, and will include a week of field work. A Quality Assurance System and a business plan for sustainability will be developed. The course content and teaching methods will regularly be updated. This course is very relevant from the point of view of the PHH research focus on environmental health. 2. A reproductive health course: This course will be developed and offered at ZCHS. The course will have its focus on management of complications of childbirth using innovative and evidenced based teaching methodologies. The course will build on the “Advanced Life Support training in obstetrics and paediatrics (ALSO) approach. Participants in the course will be students about to graduate as clinical officers and midwives. The course is considered a model for future inclusion of ALS in paediatrics and upgrading of teaching methodologies and upgrading other courses at ZCHS. The ALSO course content and teaching methods will regularly be updated. This course is very relevant from the point of view of the PHH research focus on reproductive health. 3. E- learning: In preparation for the introduction of distance based learning at SUZA and ZCHS, an appraisal to guide capacity building in distance learning at SUZA and ZCHS will be conducted. This will be based on a dialogue with relevant partners in Tanzania mainland and in Denmark. Equipment and licenses will be purchased to be in line with existing systems organised through the Continued Education Unit at MoH and SUZA. 4. Resource centres: Existing resource centers at SUZA and ZCHS will be strengthened to cater for the logistical, administrative and managerial needs of the PHH activities. 	
<p>Future plans: Activities in future phases will continue to focus on the building of a stronger research based educational environment at both SUSA and ZCHS. The activities will support a closer collaboration between ZCHS and SUZA. New courses will be developed according to needs and e-learning/blended learning approaches will be introduced. Research and research-based education are closely linked in a conducive university environment. The focus on building a stronger educational environment serves the purpose of ensuring sufficiently qualified candidates for Master and PhD projects</p>	
<p>Assumptions and risks</p> <ol style="list-style-type: none"> 1) SUZA and ZCHS staff can be released for course participation, 2) political support from SUZA and ZCHS top management, 3) courses are accredited, 4) students for the courses are available 	

5.1.c. Ghana Work Packages

<p>Work Package Title: Postgraduate education Work Package No.: Ghana 1</p>	<p>Involved Partners: UG, KNUST and DU partners</p>
<p>Justification The new requirement in the PhD curricula at UG and KNUST for formal training in research methodology and project-specific areas causes an urgent need to develop a sufficient catalogue of accredited PhD courses and to provide qualified PhD supervision and a conducive environment. E-learning could increase efficiency of PhD training and this must be explored. Existing academic staff need upgrading to PhD level.</p>	
<p>Objective A PhD course program with qualified PhD supervisors in place</p>	
<p>Outputs 1a. 3 PhD courses in research methodology designed, developed, accredited and implemented. 1b. 3 PhD courses on topical issues designed, developed, accredited and implemented. 2. One TOT supervisor training course for 20 participants delivered and plan for internal roll out in place. 3. Appraisal report on e-learning in PhD training and access to electronic databases and libraries 4. PhD student forum started and an annual meeting with senior management in place. 5. 6 PhD candidates selected for, enrolled and have started their studies.</p>	
<p>Activities 1. Design, accreditation and implementation of PhD courses: Generic PhD courses on research ethics, research methodology plus project leadership and management. Topic-specific courses including biostatistics and antibiotics. The courses, most of which are in existence and only need adaptation to local needs and requirements, will be transferred from DU partners to Ghana. UG's and KNUST's Schools of Graduate Studies will assure that courses fit into the PhD course development plans and adjust course contents if needed. Teachers in all courses will be from UG, KNUST and DU partners and joint teaching will aim to prepare for transfer of ownership to Ghana. All courses will be accredited both at UG and KNUST. 2. TOT supervisor training course: A TOT course developing Master Trainers in Ghana responsible for rolling out a supervisor training program will be held at UG with KNUST participation. This will be adapted from a course curriculum developed in Danish collaboration with East African universities. 3. Appraisal of e-learning as an element of PhD training: Possibilities of using e-learning methods for PhD training will be appraised, using experiences from East African universities and in consultation with Ghana Telecom University. Technical aspects, e.g. access to computers and internet and human resources (including training needs and management support) available for implementing e-learning will be assessed. This activity will go hand in hand with activity 2.b. under work package 3. 4. PhD forum and continuous improvement of the PhD research environment: PhD students will develop their own forum, linked to similar fora in Denmark and Tanzania mainland, to improve networking and prepare seminars and meetings with senior management, and to improve research and work environment. 5. PhD scholarships: To address the urgent need for PhD qualified staff PhD Scholarship(s) will be provided. Grant(s) will be given to very promising PhD candidates based on adherence to scientific focus area, quality of application, and interviews. PhD students will have a Ghanaian (main) and a DU (co-) supervisor, and part of the PhD study may take place at a Danish university. PhD students will be enrolled in Ghana but offered double degree from a Ghanaian and a Danish university. Future plans: At the end of phase 1, plans are made for the establishment of a fully-fledged course program. From the outset of Phase 2, courses will again be offered and new courses developed according to identified needs and contributions from other courses. Phase 2 will see many new PhD study registrations both with PHH and external funding.</p>	
<p>Assumptions and risks 1) Courses accredited in time, 2) Existing UG and KNUST academic staff released from daily duties to allow full concentration on the PhD study, 3) DU staff released from daily duties and available for activities.</p>	

<p>Work Package Title: Enabling research environment Work Package No.: Ghana 2</p>	<p>Involved Partners: UG, KNUST and DU partners</p>
<p>Justification An enabling research environment, essential to support PhD training, requires strong senior scientists. There are limited possibilities at UG and KNUST to continue research post PhD due to the teaching burden and a scarcity of funds. To strengthen the research environment senior staff must be able to continue active research, engage in international networking, and attract funding.</p>	
<p>Objective An enabling research environment built around the scientific focus areas in place</p>	
<p>Outputs</p> <ol style="list-style-type: none"> 1. 10 mentees and mentors matched and mentoring conducted 2.a 5 faculty exchanged from South to North 2.b 5 faculty exchanged from North to South 2.c 5 Research publications submitted 3. 4 Research proposals developed and submitted for funding 4. 3 Pilot-research projects initiated 	
<p>Activities</p> <p>1. Mentorship program: The PHH will institutionalize and monitor the ongoing mentorship program of the MCDC consortium with the aim of gradually including all Post Doc staff. The program will link Ghanaian mentees and mentors from DU (or other universities) to address academic and professional issues. The activity will mainly include matchmaking meetings arranged back-to-back with other activities. In addition each mentee will receive a small non-earmarked stipend for books or other relevant material.</p> <p>2. Faculty exchange South - North and North-South: Post-Docs from UG and KNUST will visit DU for 1-3 months to be mentored and to concentrate on research and proposal development. Exchange stipends will include a small cost for consumables, reagents, books, etc. The North-South faculty exchange will support research in Ghana and include lecturing and contribution to seminars and ongoing research at the Ghanaian institution. Each exchange must focus on the scientific focus areas and should result in a research proposal, a submitted research article, and/or a report of the activities undertaken.</p> <p>3. Proposal development grants: A number (depending on funding level) of proposal development grants will be used as seed funds for development of competitive research proposals within the scientific focus areas for external grants. The activity will include establishing an overview of funding opportunities, literature reviews, seminars and workshops, and consultations with stakeholders. Mechanisms for allocation of the grants will be developed prior to funding based on existing procedures in Ghana.</p> <p>4. Research: Pilot research project will be undertaken at at KNUST and UG in collaboration with DU partners. This research will be a part of 1-3 and result in submission of 5 research publications.</p> <p>Future plans: Achievements during 2011 and 2012 will represent the first steps towards building a sustainable and enabling research environment. In future phases of PHH attention will be given to the implementation of externally funded high quality research projects within the context of international and national collaborations, with many associated PhD and Master students..</p>	
<p>Assumptions and risks 1) Candidates are given study leave, 2) Danish staff available for prolonged visits to UG and KNUST</p>	

<p>Work Package Title: Institutional Capacity Building Work Package No.: Ghana 3</p>	<p>Involved Partners: KNUST; UG and DU partners</p>
<p>Justification To support a strong research environment it is essential to strengthen institutional capacity for research management and fundraising. To assure that research results are translated into policy and practice there is a need for improved knowledge management. Improved research communication at all levels is needed for fundraising and for evidence-to-policy.</p>	
<p>Objectives Institutional capacity for research management, fundraising and knowledge management and communication in place</p>	
<p>Outputs 1. Management course for administrators and researchers delivered 2a. WorkEngine web based project management tool in operation. 2b. Appraisal of possibilities for increasing the access to electronic databases and libraries 3. 2 training workshops in knowledge management and communication conducted 4. Consultation meeting with major funders held 5. One proposal writing course implemented</p>	
<p>Activities Effective project management: A two-day management course for administrators and researchers conducted (previously held in Tanzania)..A WP Working Group in each partner College of Health Sciences will prepare an overview and assessment of projects addressing finance arrangements; key research areas; faculty development elements; and needs for time allocation. Appraisal of the need for a common project management system at the Colleges of Health Sciences. Partners trained in the application of the WorkEngine web based project management tool As part of the appraisal of e-learning (WP1, activity 3) PHH will look into possibilities for sustainable licenses to a broad range of electronic media, notably scientific libraries and journals. This may include utilization of library partnerships between Ghanaian and Danish institutions. Knowledge management: Two training workshops (at UG and KNUST) with selected research managers and researchers on strategic communication will be held. This will include assessment of capacity to work with strategic communication by exploring existing practices and channels, and needs for improvement as part of ongoing and upcoming research projects. Fundraising: Consultation with major donors: The PHH will run a side-event to an international consultation with donors and large scale funds, planned by the vice chancellor at UG. The side-event will focus on health related research projects and include specially invited funding agencies. The Colleges of Health Sciences will study the national health research agenda (under development) and translate this into research strategy papers that will subsequently be used to support application development on priority research areas. Proposal writing: One proposal-writing course will be held (common to UG and KNUST). Future plans: Continued support to develop and implement improved research development and management systems. Management courses will be rooted in UG and KNUST and repeated for additional staff and a higher level management course will be developed and implemented. Support for fundraising will be continued and expanded.</p>	
<p>Assumptions and risks 1) College of Health Sciences administrative staff available and provided with the working conditions required to prepare catalogue and integrate new project management tools , 2) UG, KNUST, and DU staff released from routine duties for courses and workshops, 3) Planned consultation realised</p>	

5.1.d. Capacity Building Support Unit

Work Package Title: PHH Capacity Building Support Unit (CBSU)	Involved Partners: The CBSU, UD and DU partners, all partner institutions in Tanzania mainland, Zanzibar, Ghana
Work Package Number: Cross-cutting 1	
Justification The PHH's set-up is highly collaborative in nature and requires a transparent internal organizational structure and efficient sharing of information within and between partners and entities at different levels and in different locations North and South to achieve the planned impact, maintain motivation and secure continued funding.	
Objectives Transparent, balanced and efficient organisation and communication structures established at all levels of the PHH; Motivation and involvement of the South partners and Danish resource base mobilized; Adequate and timely implementation, monitoring, evaluation, and reporting taking place; Capacity to communicate (research) results, develop and plan future activities, and to attract funding increased at all levels.	
Outputs: 1. Danish members appointed to organizational entities at all levels North and South. Capacity Building Support Unit staff in place. WorkEngine project management tool introduced to and used by all relevant project staff. Timely and adequate monitoring and reporting delivered. Case study impact assessments initiated. 2. Thematic Working Groups sharing knowledge and coordinating activities 3. www.humanhealth.dk updated and continuously developed; PHH technical and topical workshops and seminars planned and conducted 4. Donors approached and proposals submitted	
Activities 1. Organization, coordination and project management: Management of Capacity Building Support Unit by full time Platform Coordinator. Facilitating appointment of Danish members to entities at various levels of the PHH's organization. Introduction to the WorkEngine project management web tool provided to all partners incl. guiding and support to ensure monitoring, implementation, evaluation and reporting procedures. Submitting financial and narrative progress reports to the DK Steering Committee and the overall UD BSU Secretariat on behalf of the South Committees. Drafting Terms of Reference and identifying independent research group to conduct case studies on process and activity impact assessment (to be externally funded) 2. Thematic Working Groups provided with support and linked to South partners and networks as appropriate and part time resource persons as listed above with full time Platform Coordinator and part time resource persons in the fields of web, e-learning, communication, dissemination, and fundraising in function and actively supporting the maintenance of organization, administration, communication and capacity building activities. and communication routines 3. Networking, communication and dissemination: Updating and further development of www.humanhealth.dk ; planning and organizing PHH technical and topical workshops and seminars, including training in strategic communication and dissemination. 4. Fundraising. Identifying and approaching donors; writing and submitting proposals	
Future plans The focus of the CBSU will initially be to establish and consolidate governance structures and project management procedures, and to support communication, dissemination, and fundraising competencies at each location. As the collaboration develops increased attention will be given to conduct joint workshops and comparative studies and focused impact studies of selected components of the PHH across countries, and to approach major international donors jointly It will also be pursued to involve the Thematic Working Groups more directly in the planning and implementation of activity plans with selected South partners and inviting these partners to become active members.	
Assumptions and risks Relevant project management tool at hand, and motivation among designated staff and resource persons at all levels to used timely and correctly. A continued interest and commitment to contribute to the PHH from partner institutions and key resource persons South and North.	

5.2 Budget overview

Total PHH core budget* for phase one covering two years

(For detailed budgets refer to Annex II)

Scenario 4 mio DKK per year		Tanzania	Zanzibar	Ghana	DU	Total
1	Salaries and emoluments	194.000	153.000	325.000	2.225.000	2.897.000
2	Taxameter/educational grants	605.000	137.500	645.000	50.000	1.437.500
3	Expenses for trips abroad and field work	300.000	287.000	535.000	630.000	1.752.000
4	Equipment	-	-	-	-	-
5	Materials	42.500	37.500	72.000	47.000	199.000
6	Publication, dissemination and communication	-	-	-	350.000	350.000
Sub total		1.141.500	615.000	1.577.000	3.302.000	6.635.500
7	Administrative fee, DK partners	-	-	-	660.400	660.400
8	Administrative fee, South partners	79.905	43.050	110.390	-	233.345
9	Study stays in Denmark of researchers from South	60.000	-	264.000	-	324.000
10	External audit	30.000	15.000	60.000	30.000	135.000
Grand total		1.311.405	673.050	2.011.390	3.992.400	7.988.245
Partner's relative share of budget (%)		16,42	8,43	25,18	49,98	
Scenario 7 mio DKK per year		Tanzania	Zanzibar	Ghana	DU	Total
1	Salaries and emoluments	498.000	273.000	550.000	3.500.000	4.821.000
2	Taxameter/educational grants	803.000	445.500	1.240.000	175.000	2.663.500
3	Expenses for trips abroad and field work	775.000	220.000	780.000	1.652.200	3.427.200
4	Equipment	-	-	-	-	-
5	Materials	60.000	35.000	122.000	47.000	264.000
6	Publication, dissemination and communication	-	-	-	400.000	400.000
Sub total		2.136.000	973.500	2.692.000	5.774.200	11.575.700

7	Administrative fee, DK partners	-	-	-	1.154.840	1.154.840
8	Administrative fee, South partners	149.520	68.145	188.440	-	406.105
9	Study stays in Denmark of researchers from South	60.000	110.000	528.000	-	698.000
10	External audit	30.000	15.000	60.000	30.000	135.000
Grand total		2.375.520	1.166.645	3.468.440	6.959.040	13.969.645
Partner's relative share of budget (%)		17,00	8,35	24,83	49,82	
Scenario 10 mio DKK per year						
		Tanzania	Zanzibar	Ghana	DU	Total
1	Salaries and emoluments	757.000	275.500	650.000	4.850.000	6.532.500
2	Taximeter/educational grants	1.243.000	445.500	1.860.000	237.500	3.786.000
3	Expenses for trips abroad and field work	927.500	532.000	1.025.000	2.532.200	5.016.700
4	Equipment	-	-	-	-	-
5	Materials	77.500	182.500	172.000	52.000	484.000
6	Publication, dissemination and communication	-	-	-	400.000	400.000
Sub total		3.005.000	1.435.500	3.707.000	8.071.700	16.219.200
7	Administrative fee, DK partners	-	-	-	1.614.340	1.614.340
8	Administrative fee, South partners	210.350	100.485	259.490	-	570.325
9	Study stays in Denmark of researchers from South	120.000	110.000	792.000	-	1.022.000
10	External audit	30.000	15.000	60.000	30.000	135.000
Grand total		3.365.350	1.660.985	4.818.490	9.716.040	19.560.865
Partner's relative share of budget (%)		17,20	8,49	24,63	49,67	

***Overall guidelines from Danida**

3 budget scenarios: DKK 4 mill., /7 mill./10 mill./per year

Distribution of funds between South/North 50/50

Overhead North 20%, South 7%.

*** Internal division of resources set by PHH**

Distribution between Ghana/and Tanzania 50/50

Distribution between Tanzania mainland and Zanzibar 2/3 and 1/3

5.2.1. Implications of different funding scenarios on level of activities and outputs

Tanzania mainland

The DKK 10 mill. scenario includes 2 PhD fellowships and 5 MSc fellowships. These numbers are reduced in the other funding scenarios. The 7 and the 4 mill. DKK scenarios both include 1 PhD, whilst the 5 MSc fellowships are included in the 7 mill. scenario and not in the basic funding scenario. The number of courses are gradually reduced in response to reduced funding. The number of research exchange visits are also reduced. This also applies to activities to support an enabling research environment and to institutional capacity efforts. However, building supervisory skills and establishing a quality assurance system are maintained in the budgets for all three levels of funding

Zanzibar

A PhD student is included in the DKK 7 and the 10 mill. scenarios, whilst the MSC is included in all three scenarios. While the basic scenario does not allow a PhD it does however leave funding for a less ambitious Research Methodology Course instead. Only the DKK 10 mill. scenario can cater for both the PhD and the Research methodology course. Other courses and activities will be adjusted to the level of funding either by reducing the number of courses or activities or by implementing less ambitious versions. This applies to development of the resource centre as well. Upgrading of distance based learning is only budgeted for in the DKK 10 mill. scenario.

Ghana

The 10 mill. DKK scenario includes 6 PhD fellowships and 6 planned courses. These numbers are reduced gradually in the 7 and 4 mill DKK scenarios. The same applies to the number of North-South research exchange visits and to the number of courses on research communication and research methodology. In general all types of activities listed are included at all three levels of funding but some of the activities are adjusted to the actual budget either on numbers or on level of ambitions.

Capacity Building Support Unit

The Capacity Building Support Unit in Denmark will be staffed with a full time coordinator in all three scenarios. In comparison with the DKK 10 mill. scenario, funds allocated to network and research communication activities will gradual decrease in the DKK 7 and 4 mill scenarios. The level of PHH fundraising activities and project management activities, including appraisal for e-learning and workshops, are likewise adjusted to the different funding scenarios. The same applies to the support provided to thematic working groups in the three scenarios.

5.2.2. Co-financing from Danish university partners

The Danish partners have agreed to invest in-kind in the PHH, through use of infrastructure and from ongoing and future research projects an amount equal to or higher than the funds allocated to the Danish institutions in the different PHH funding scenarios. Major in-kind contributions will constitute three months per southern PhD co-supervised, two weeks per southern MSc co-supervised, time investments in Danish PHH governance structure (chairperson and Steering Committee members at total of 7 months per year) and senior researchers working at partner institutions in the South (average six weeks per Danish staff working at Southern partner institution. Co-financing related to infrastructure relates to office and laboratory space (including all infrastructure needed for effective work) for Southern guest researchers while in Denmark and for the offices needed for PHH in Denmark. A significant amount of co-funding will come from research and capacity development projects (not funded by Danida) undertaken in partnership with PHH partner institutions in the South. Co-financing will be provided across the Danish partner institutions.

5.3. Platform strategy and activities in terms of “value for money”

To achieve the highest output and impact with relatively limited funding the PHH has maintained a dedicated focus on a relatively limited number of partner institutions and has aimed to use funds to compliment and align with other initiatives. Likewise, resources are systematically used to support capacities with a multiplier effect such as strategic international partnerships, effective management systems for PhD programs, proposal and fundraising activities, attractive PhD courses and upgrading of institutional key staff members. Furthermore, existing management and reporting structures are used and no stand alone PHH units will be established. A business case is developed for all postgraduate course activities to ensure the sustainability of the invested resources. To increase impact of investments in research and education the users of such services primarily MoH are included as partners. Over time the Southern PHH partners will

develop into hubs of excellence supporting PhD programs in the region through courses and supervisory capacity.

5.4 Synergies and collaboration between the activity plan and partners

In Ghana and Tanzania mainland the work packages outlined (institutional capacity building, enabling research environment, post graduate education) represent a coherent program. Neither of the proposed work packages can stand alone. Taken together, they all point forward and contribute to strengthening research, research based higher education and research-based decision making within the context of strengthened post-doctoral education programs. The involvement of a university and a governmental research institution in Tanzania (including Zanzibar) creates ample synergies and opportunities for bridging from research to reality (R2R) within the health sector. Many opportunities exist for synergy when combining KCMCollege's clinical research tradition with NIMR's longstanding involvement in Health Systems Research and in community-and population-based field research. The partners in Zanzibar have chosen to join hands in a consortium to make use of the entire resource base. Hereby a joint and integrated capacity building approach can be pursued that closely links and integrates health related knowledge transfer, education, in-service training, documentation, and research efforts between and across the local institutions from college to university to policy making and implementation levels.

Potentials also exist for collaboration between countries. Ghana and Tanzania mainland share the same overall objective for their PHH program and collaboration may be envisaged. KNUST, KCMCollege and University of Copenhagen already collaborates under the Wellcome Trust funded project "Malaria Capacity Development Consortium" (MCDC) and with KNUST on another Wellcome Trust funded project on environmental health aimed at strengthening African universities. KCMCollege and SUZA already collaborate on course implementation and staff exchange, and it makes sense to establish collaboration between a relative strong university (KCMC) and a relatively weaker university (SUZA). Such a set-up will become increasingly relevant as the collaboration develops.

PHH will link the involved Danish universities in a combined effort to build stronger universities and new collaborative links will be established as the PHH matures. The inclusion in the PHH of parts of the former Enreca Health Research Network will ensure the function of PHH as central platform for dissemination, sharing of information and coordination within the Danish resource base. PHH will actively keep the broad Danish resource base and other interested parties informed about progress and opportunities.

5.5. Synergies and collaboration with other platforms

Most platforms plan to address research capacity building with support to PhD or similar training as a central objective. It is envisaged that PHH in Tanzania mainland can implement PhD courses jointly with Tanzanian members of other platforms. Sokoine University of Agriculture (SUA) is a central partner in the Growth and Employment and in the Climate and Environment platforms. An educational collaboration already exists between KCMCollege and SUA, related to staff exchange. This provides a useful background for joint course planning and implementation with regard to generic PhD and other postgraduate courses.

In addition, PHH will continuously lobby to ensure that the other platforms recognize health outcomes as final outcomes from their activities. It is envisaged that health issues will also be addressed by the other platforms. Here PHH will be most willing to assist. Existing links to SUA provide a good background for this as regards activities in Tanzania mainland. Close collaboration is also envisaged with the Platform for Stability, Democracy and Rights. This Platform's activities have many elements where human health is a central parameter. E-learning is a priority which will be a joint venture between all platforms with an initial anchorage at universities in Denmark. Members of the PHH have comprehensive experience in e-learning.

5.6. Collaboration with other programs and measures taken to avoid duplication

Broad consultations and involvement of a broad range of stakeholders in the planning process have contributed to the prevention of potential overlaps and repetition. The top management at all universities involved has participated very actively in the planning process.

KCMCollege, NIMR, KNUST and UG are all involved in many major collaborative programs with international partners and funding. Most of these are research programs, but some programs also address education. However, the research collaborations seldom include a capacity building component and most educational support programs addresses the pre-graduate level and infra-structure improvements in general. In almost all programs involving support to Southern PhD students, registration takes place at the university in the North. BSU is unique in supporting PhD education with registration at the Southern university. Synergy can be created between PHH and the other external collaborative projects. It is envisaged that these projects with the availability of PHH will include more Southern PhD students in their projects and registered at the African partner university. On the other hand, PHH will make good use of the infrastructure improvements funded by other programs. The planned activities in Tanzania mainland and Ghana have been carefully selected to complement and extend other activities at the involved institutions. They are therefore given a well-defined role in the overall university development plans.

KCMCollege's membership of the Tanzanian Commission for Universities allows coordination with postgraduate training taking place at other Tanzanian universities. PHH activities do not stand alone but are well integrated into existing programs and structures. This ensures that duplication is not taking place.

Concerning the research component in Tanzania mainland, the involvement of NIMR provides a unique possibility for avoiding repetition and for optimizing synergy. NIMR is thus hosting the National Medical Research Ethics committee which oversees all health research and international research collaboration in Tanzania mainland. This should ensure that overlap and repetition are avoided. In addition, malaria and malaria related research in Northern Tanzania is coordinated by JMP hosted at KCMC and NIMR.

PHH activities in Zanzibar have been developed and consolidated with relevant local stakeholders. The Aid Coordinator in the MoH has throughout been an active partner in the development of PHH plans.. This has ensured sharing of information and coordination with likeminded national and international activities as appropriate. The Danish universities entry points and links with Zanzibar goes hand in hand with Danida's longstanding collaboration in Tanzania mainland and increasingly so when Danida became the major bilateral donor in Zanzibar in 2004. Since 1999 more than 10 Zanzibaris have graduated from the Master in International Health at the University of Copenhagen. This group of Masters provides a strong base of competent colleagues to PHH.

5.7. Assumptions and preconditions of activity plan and contingency plans

The planning of the activities in Tanzania mainland and Ghana has taken its starting point in existing strategies and development plans for the institutions involved. Activities proposed have grown out of a thorough needs analysis involving all relevant partners. In addition, the top management has been very active stakeholders in the planning process. On this basis it is felt that all preconditions are in place for smooth running of the activities and for achieving planned outputs. Risks and assumptions related to each specific work package are listed under each work package description. No killer assumptions were identified during the planning process.

PHH trusts that plans are realistic, and that outputs can be reached within the budget framework outlined. There will be a close follow up on progress so that any deviations from plans outlined will be registered very early. This means that minor challenges can be addressed early enough to ensure quick correction to bring us back on track without any major time delays. In case of any major unforeseeable obstacles to program implementation, the BSU Partnership Steering Committee and the PHH Implementation Committee will take action to mitigate and adjust accordingly. Each work package contains different elements, allowing for a shift in focus within the overall objective of each work package if required.

5.8. Measures to ensure long-term sustainability of proposed measures

The proposed activities are highly prioritized by the top management and seen as essential steps towards strengthening their institutions to become among the leading universities in Africa. The PhD courses will be integrated into the UG, KNUST and KCMCollege's School of Graduate Studies programs. The programs and their attendant courses will be maintained by the tuition fees that the universities charge. Business plans will be developed to ensure an increased uptake of students and thereby a sustained funding basis. All courses, supervisor education etc. will be developed as part of the school curriculum and will continue to run even when the PHH support is phased out.

The course activities in Zanzibar have been developed and designed to become formally accredited courses in the partner institutions regular programs. Upgrading of staff members will ensure that the required skills and knowledge are available at the institutions to manage, run and further develop high quality course modules, and to market and/or fundraise to ensure economical sustainability.

The collaboration between Tanzanian, Ghanaian and Danish researchers established or developed further within the PHH initiative will remain active and strengthen the funding opportunities of African research institutions. The research management units established will additionally facilitate proposal writing. The support provided by PHH will ensure that African researchers will be principal investigators on a number of these proposals. As a result a continued inflow of funds for research can be expected that will also serve to ensure the continued training of PhD students. It is anticipated that the joint efforts of the BSU initiative will provide a major push towards the ambitions of developing world-class universities in the partner countries.

6. Governance and administrative set-up

6.1. Decision-making structures

A similar organizational structure has been adopted for the delivery of PHH outputs in Ghana, Tanzania mainland and Zanzibar to be implemented independently in each location. The structure contains three core components:

The BSU Partnership Steering Committee represents the highest oversight authority related to the agreed collaboration with the individual partnership as composed at each location. This Committee meets twice annually, once in real, once virtually, and is responsible for setting the overall priorities, reviewing progress and expenditures, and evaluating impact of the collaboration. In cases where several BSU Platforms are engaged with the same partner (e.g. in Ghana) the Partnership Steering Committee comprises members from all these and is responsible for ensuring coherence and coordination across the platforms.

The BSU Partnership Steering Committee will be composed as outlined in the Memorandum of Understanding (to be entered bilaterally between UD and the individual South institutions/or joint partnerships if this is agreed on behalf of the participating platforms): The South partner appoints the Chairperson of the BSU Partnership Steering Committee. The chairpersons of the Danish Steering Committees of the involved platforms each appoint one Danish member of the Partnership Steering Committee. The South partner appoints a corresponding number of committee members.

The PHH Implementing Committee is headed by the PHH program leader (appointed by the Southern institution). Other members of the Implementing Committee include the Danish counterpart to the South PHH program leader (appointed by the PHH DK Steering Committee) and leaders of each active PHH WP Working Group. The PHH Implementing Committee is responsible for implementing strategies adopted by the BSU Partnership Steering Committee and for the coordination of activities across work packages. The PHH Implementing Committee reports to the BSU Partnership Steering Committee every 6 months, and also prepares input for future work plans.

PHH WP Working Groups at the Southern partner institutions (focused on postgraduate education, research, and institutional capacity building) are each headed by a leader (appointed by the Southern institution). He/she has a Danish counterpart (appointed by PHH DK Steering committee). Other members of the WP Working Group leadership comprise of staff with major responsibilities for the implementation of the given Working Group's activities. The members at this level are responsible for putting the work plans into operation, completing PHH tasks and producing related outputs. The Working Group reports progress to the PHH Implementing Committee.

In Denmark the **Rector's Conference of UD**, assisted by the **UD Secretariat** and advised by the **UD/BSU Working Group**, will oversee the implementation of the BSU Initiative (including all four thematic Platforms) and will have overall responsibility for the appropriate use and reporting of core funding from the Ministry of Foreign Affairs.

The Danish **PHH Steering Committee** comprises one member from each Danish university (DU) active in PHH including a chairperson (all appointed by the Danish Rectors' Conference). The Steering Committee approves the overall PHH activity plans and budgets, guides the division of tasks and responsibilities between the Danish partners, and reports back to UD on the progress via the Chairperson, who is seated in the UD/BSU Working group (and presently also appointed Chairperson of this group).

6.2. Structures for internal and external communication and fundraising

The PHH's work is highly collaborative in nature and requires efficient organization and sharing of information between the stakeholders within the internal structure but also aims at becoming strong in communicating visions and results to fellow research environments, policy makers, media, development practitioners and donors using evidence to influence policy and build cases for resource mobilization. This implies working with strategic research communication and fundraising at all levels and the **PHH Capacity Building Support Unit** (PHH CBSU) presented in the Work Package above aims at hosting a full time coordinator and part time resource persons in the fields of web, e-learning, communication, research dissemination and fundraising to address these various needs professionally and adequately.

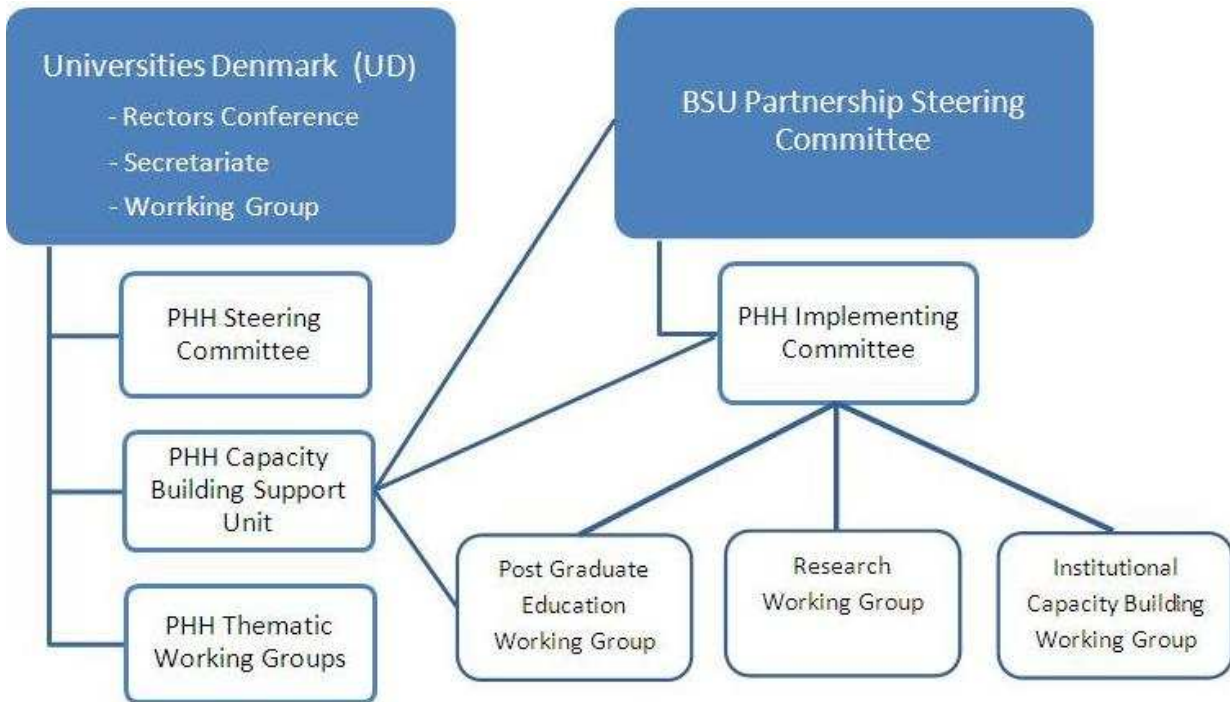
The PHH Capacity Building Support Unit is presently located at the University of Copenhagen, Faculty of Health Sciences. The PHH Capacity Building Support Unit shares offices with coordinating units of other initiatives including the Danish Research Network for International Health (www.enrecahealth.dk), Copenhagen School of Global Health (www.globalhealth.ku.dk), the PhD Research Program in Global Health (<http://globalhealth.ku.dk/phd/>). These units support global and international health education and research, as well as representing Danish institutions in international networks for research capacity building in developing countries. PHH CBSU is also co-located with other university and NGO based secretariats managing large research for health projects with partners in Africa and Asia. This significantly benefits PHH in terms of practical support for implementation, knowledge sharing, dissemination of lessons learned and alignment across Danish, EU and global initiatives.

Thematic Working Groups supported by PHH are headed by an active researcher at a designated hosting institution in Denmark but have the aim to involve members from the entire Danish research for health resource base with an interest in the particular theme. The Working Groups will address scientific focus areas in general and not be limited to focus only on research for health issues in Tanzania and Ghana. The significant international network represented by the involved individuals and institutions in the Working Groups will provide an important platform for dialogue with and support to the partners in the South.

Thematic Working Groups focusing on reproductive health, climate change and health, governance and communication, environmental and occupational health and safety, and infectious diseases are already active, while Working Groups focused on food and health and information and communication technologies and health are in the pipeline.

6.3. PHH Organization Chart

The chart presents the organizational set-up of PHH in Denmark on the left hand and the standard structure of the organizational entities in each South location where an individual BSU PHH partnership will be entered on the right hand. In the first phase this will count 4 PHH partnerships: One in mainland Tanzania (with KCMC and NIMR); one in Zanzibar (with SUZA and MoH), and two separate partnerships in Ghana, one with UG and one with KNUST.



6.2 Project Management Measures

6.2.1 Project Planning

Based on the work package description in this application and the budget allocated each WP Working Group will complete a project plan prior to launch. These plans will be rolled into a master plan managed at the PHH Implementing Committee level and will become the driving document for managing and evaluating PHH activities. The master plan will be uploaded to the WorkEngine web tool, which is an on-line project management software currently in use in the department where the PHH Capacity Building Support Unit is hosted. Project progress will be tracked electronically for all stakeholders to access. The master plan will include Project Tasks, Task Owners, Project Milestones, Project Deliverables. Working group leaders, committee members, and others, as appropriate, will be trained in the use of the WorkEngine web tool in order to have on-line access to the master plan and receipt of automated reminders of upcoming project milestones and deliverables. Changes to the plan can be made on-line and submitted to and approval by the PHH Implementing Committee.

6.2.2 Project Launch

The launch phase of the project is of particular importance to successful implementation. Inception workshops will be supported by WorkEngine's specific Launch Management Process which utilizes a quick and efficient process for orienting the project team on the scope, approach, and activities to be completed.

6.2.3 Project Execution

The activities will be de-centralized to the PHH Implementing Committee and Working Group levels, while retaining a central coordinating role at the PHH Capacity Building Support Unit level. The PHH web-portal will play an important function in the execution of activities. The master work plan will be imported into the web-based project management tool and task owners will receive automated reminders of upcoming tasks and deliverables. The web tool will also track completed tasks, store project status reports, and serve as a digital forum for information sharing among partners and collaborators. Further, the project web-portal may also be used to create a planned budget and to track actual expenditures against the proposed budgets. The PHH Implementing Committees will summarize progress in a short status report which will be posted on-line and disseminated to partners and collaborators.

Facilitating strong inter-team partnerships and promoting a sense of inclusion is critical to the success of the PHH. Status meetings in the form of teleconferences will be organized by the PHH Capacity Building Support Unit in support of real meetings with longer intervals to help contribute to strong national collaboration.

6.2.4 Project Evaluation and Reporting

Each Working Group will have defined tasks and outputs. These will form the foundation for tracking project status. On a twice-yearly basis the Working Groups will report project status to the PHH Implementing Committee using the web based project management tool. Using the same tool, the PHH Implementing Committee will evaluate program efficiency and effectiveness with reference to Key Performance Indicators and Work Group budgets to be defined during launch. The PHH Implementation Committee will work with the Working Groups to resolve areas of non-compliance. These biannual PHH reports will form the basis for the annual project evaluations delivered to the BSU Partnership Steering Committee.

The PHH plans to conduct dedicated case studies to in depth assess impact of process and activities with support from independent research group with external funding.

ANNEX I Selected Curriculum Vitae

CURRICULUM VITAE

NAME AND DOB Bygbjerg, Ib Christian; born 14.05.1945		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Copenhagen, Denmark	MD	1972	Medicine
National Health Board, Denmark	Specialist	1982 & 88	Trop. & InfMed.
University of Copenhagen, Denmark	D.Sc.	1888	Malaria

Positions and employment

1972-1974	Assistant Medical Doctor, Departments of Surgery, Pediatrics, Medicine and Infectious Diseases, Copenhagen University Hospitals and Svendborg, Denmark
1975-1977	Médecin agréé & directeur de l'école inf. auxiliaire, Hopital CBZO, Sona Bata, Zaïre (now Congo Democratic Republic)
1977-1979	Assistant Medical Doctor, Depts. of Dermatology and Infectious Diseases, Copenhagen University Hospitals
1979-84	Clinical Research Associate, Dept. Infect. Dis., Copenhagen University Hospital,
1987-1988	Medical Doctor, Dept.s of Haematology, Rheumatology, Hepatology & Infect. Dis. Copenhagen University Hospital
1988-1998	Senior Consultant Dept. Infect. Dis., Copenhagen University Hospital
1998-present	Professor & founder of Dept. International Health, first at Department of Public Health, now International Health, Immunology & Microbiology, University of Copenhagen
2002-2009	Head, Center for International Health & Development, University of Copenhagen
2009	Co-founder of Graduate School of International Health, University of Copenhagen
2008-present	Senior External Consultant in Tropical Medicine, Copenhagen University Hospital

Other experience

1998	Honorary Professor, University of Khartoum, Sudan
1999-2004	Head and founder of Master in International Health training programme, University of Copenhagen
1997-2000	Member Danish Red Cross' International Committee
1995-2001	Member, Danida's Research Council
2001-2004	Member & co-founder of Danida supported AIDSNet (for Danish NGOs)
2002-2003	Member, Deans Strategy Committee, Faculty of Health Sciences, U. of Copenhagen
2002-present	Chairman, Danida supported Health Network, ENRECAHealth
2003-present	Member, Danida's Council
2003-present	Board Member, World Diabetes Foundation
2009-present	Board Member & co-founder of Global Doctors
2010-present	Board Member & co-founder of Centre for Ethnicity & Migration (MESU)
2010-present	Coordinator for new Masters (candidate) in Global Health, University of Copenhagen

Involvement in international research and research capacity building programmes

- 1987 – 1999 Danish counterpart in the research link on malaria and leishmaniasis between University of Khartoum, University of Copenhagen and University of Edinburgh.
- 1993–present Main Danish counterpart in the research link on malaria between National Institute for Medical Research and University of Copenhagen supported through a Danida Enreca programme and later also by other foundations, cf. below.
- 1999- Danish counterpart in a Malaria Research link under establishment which includes Kilimanjaro Christian Medical College, Moshi, Tanzania, National Institute of Medical Research, Tanzania, London School of Hygiene and Tropical Medicine, and University of Copenhagen.
- 2004-2010 Head, Cluster in International Health, on TB, malaria, HIV and Diabetes, and collaboration with African and Indian research institutions.
- 2005-present Main Danish counterpart in three projects co-funded by the European Union.

Involvement in PhD and Masters education

Supervisor for more than 40 successful PhD students, of which half are from Africa and Asia, organiser of several PhD courses in Denmark and abroad.

Supervisor for more than 100 masters students, of which the majority are from abroad.

Co-founder of European Network for Masters in International Health, TropEd

Member of Gates and Wellcome Trust's Malaria Capacity Development Consortium (MCDC)

Scientific achievements

Member of Centre for Medical Parasitology (www.cmp.dk), which currently employs about 60 scientists and technicians. In 2009 the external funding to the Centre amounted to about 4,7 million € from international (Bill and Melinda Gates Foundation, Foundation of the National Institute for Health, European Commission) and national sources (Danish Research Councils, Danida). Grant holder of Novo Nordisk Foundation donation of 15 mio. DKK for research in non-communicable diseases in low- and middle income countries. Author of more than 175 papers in international journals, and about 15 chapters and contributions to textbooks in international health, tropical medicine, infectious diseases and public health.

Six Selected Publications

- [Defining the research agenda to reduce the joint burden of disease from diabetes mellitus and tuberculosis.](#) Harries AD, Murray MB, Jeon CY, Ottmani SE, Lonnroth K, Barreto ML, Billo N, Brostrom R, Bygbjerg IC, Fisher-Hoch S, Mori T, Ramaiya K, Roglic G, Strandgaard H, Unwin N, Viswanathan V, Whiting D, Kapur A. *Trop Med Int Health*. 2010 Jun;15(6):659-63. Epub 2010 Apr 12
- [Quality of paediatric blood transfusions in two district hospitals in Tanzania: a cross-sectional hospital based study.](#) Mosha D, Poulsen A, Reyburn H, Kituma E, Mtei F, Bygbjerg IC. *BMC Pediatr*. 2009 Aug 14;9:51.
- [Five-year surveillance of molecular markers of Plasmodium falciparum antimalarial drug resistance in Korogwe District, Tanzania: accumulation of the 581G mutation in the P. falciparum dihydropteroate synthase gene.](#) Alifrangis M, Lusingu JP, Mmbando B, Dalgaard MB, Vestergaard LS, Ishengoma D, Khalil IF, Theander TG, Lemnge MM, Bygbjerg IC. *Am J Trop Med Hyg*. 2009 Apr;80(4):523-7
- [Perceptions of mothers and hospital staff of paediatric care in 13 public hospitals in northern Tanzania.](#) Mwangi R, Chandler C, Nasuwa F, Mbakilwa H, Poulsen A, Bygbjerg IC, Reyburn H. *Trans R Soc Trop Med Hyg*. 2008 Aug;102(8):805-10. Epub 2008 Jun 3
- [Intermittent preventive treatment of malaria in pregnancy: a new delivery system and its effect on maternal health and pregnancy outcomes in Uganda.](#) Mbonye AK, Bygbjerg IC, Magnussen P. *Bull World Health Organ*. 2008 Feb;86(2):93-100
- [Effect of intermittent treatment with amodiaquine on anaemia and malarial fevers in infants in Tanzania: a randomised placebo-controlled trial.](#) Massaga JJ, Kitua AY, Lemnge MM, Akida JA, Malle LN, Rønn AM, Theander TG, Bygbjerg IC. *Lancet*. 2003 May 31;361(9372):1853-60

CURRICULUM VITAE

NAME AND DOB Friis, Henrik; born 05.04.1957	POSITION TITLE Professor		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Århus, Denmark	MD	1985	Medicine
National Health Board, Denmark	Physician	1987	Medicine
University of Copenhagen, Denmark	PhD	1994	Epidemiology

Positions and employment

1985-1990 Assistant Medical Doctor, various hospitals, Denmark (DK) and Zambia
 1990-1994 Research Fellow, Danish Bilharziasis Laboratory, DK
 1994-2002 Asst/Assoc Professor, Dept Human Nutrition, Royal Vet & Agricultural University, DK
 2002-2006 Associate Professor, Dept Epidemiology, University of Copenhagen, DK
 2007- Professor, International Nutrition and Health, Dept Human Nutrition, Faculty of LIFE Sciences, University of Copenhagen, DK

Other experiences

1995-1999 Member of Working Group on Prevention of Mother-to-Child Transmission, UNAIDS
 2003-2005 Co-chair/Member of Technical Advisory Group on Nutrition and HIV, WHO
 2002-2006 Member of *Multiple Micronutrient Supplementation During Pregnancy Study Team* UNICEF, WHO
 2005-2007 Consultant in relation call and technical meetings on Nutrition and HIV, IAEA
 2007- Honorary Professor, London School of Hygiene and Tropical Medicine, UK

Involvement in international research and research capacity building programmes

Research group and projects

Head of the Research Group in International Nutrition and Health, which currently has 1 Associate Professor, 1 Assistant Professor, and 11 PhD-students. In addition, our group supervises a number of African PhD-students, registered either in Denmark or locally.

We have previously conducted large trials in various African countries on the effect of micronutrient supplements and anthelmintics among different groups, such as school children, pregnant/lactating women with HIV, and patients with TB and HIV infection.

We are currently doing nutrition intervention trials among infants (**WinFood**: Cambodia and Kenya), children with acute malnutrition (**TreatFood**: two countries in West Africa), adults with HIV (**ARTFood**: Ethiopia, and **NUSTART**: Tanzania and Zambia) TB (**NUT-TB**: Tanzania). We are also doing studies on severe acute malnutrition in children (**SAM**: Ethiopia) and in a pig-model (**ReFood**: Denmark), and observational studies on fetal programming of later chronic disease (**iABC**: Ethiopia).

Involvement in PhD education

Supervisor for 31 PhD-students, ie 14 completed and 17 ongoing, of which 15 are from Africa. Since 2009 Departmental PhD-coordinator.

Scientific achievements

Head of research group in International Nutrition and Health, comprising 1 Assistant Professor, 1 Associate Professor and 11 Danish PhD-students. Has received grants for 19 mio DKK as main applicant and 92 mio DKK as co-applicant, from Danida, EDCTP and the US.

Author of more than 125 peer-reviewed papers, and seven book chapters and editor of one book.

Six Selected Publications

1. Range N, Chagalucha J, Krarup HB, Magnussen P, Andersen AB, **Friis H**. The effect of multi-vitamin/mineral supplementation on mortality during treatment of pulmonary TB: a randomised two-by-two factorial trial in Mwanza, Tanzania. *British Journal of Nutrition* 2006, 95:762-770.
2. Ayah RA, Mwaniki DL, Magnussen P, Tedstone AE, Marshall T, Alusala D, Luoba A, Kaestel P, Michaelsen KF, **Friis H**. The effects of maternal and infant vitamin A supplementation on vitamin A status: a randomised trial in Kenya. *British Journal of Nutrition* 2007, 98:422-30.
3. **Friis H**, Range N, Pedersen ML, Mølgaard C, Chagalucha J, Krarup H, Magnussen P, Søborg C, Andersen ÅB. Hypovitaminosis D is common among pulmonary tuberculosis patients in Tanzania, but not explained by the acute phase response. *Journal of Nutrition*, 2008, 138: 2474–2480.
4. **Friis H**, Range N, Kristensen CB, Kæstel P, Chagalucha J, Malenganisho W, Krarup H, Magnussen P, Andersen ÅB. Acute phase response and iron status markers among pulmonary TB patients: a cross-sectional study in Mwanza, Tanzania. *British Journal of Nutrition*, Br J Nutr. 2009;102(2):310-7.
5. Christensen DL, **Friis H**, Mwaniki D, Kilonzo B, Tetens I, Boit MK, Omondi B, Kaduka L, Borch-Johnsen K. Prevalence of glucose intolerance and associated risk factors in rural and urban populations of different ethnic groups in Kenya. *Diabetes Research and Clinical Practice* 2009;**84**:303-310.
6. PrayGod G, Range N, Faurholt-Jepsen D, Jeremiah K, Faurholt-Jepsen M, Aabye MG, Jensen L, Jensen AV, Grewal HM, Magnussen P, Chagalucha J, Andersen AB, **Friis H**. Daily multi-micronutrient supplementation during tuberculosis treatment increases weight and grip strength among HIV uninfected but not HIV infected patients in Mwanza, Tanzania. *Journal of Nutrition*, 2011, 141(4):685-91

CURRICULUM VITAE

NAME AND DOB Theander, Thor Grundtvig; born 28.02.1957	POSITION TITLE Professor		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Copenhagen, Denmark	MD	1982	Medicine
National Health Board, Denmark	Physician	1988	Medicine
University of Copenhagen, Denmark	D.Sc.	1992	Malaria immunology

Positions and employment

1982-1983	Assistant Medical Doctor, Departments of Medicine and Infectious Diseases, Copenhagen University Hospital, Denmark
1983-1987	Clinical Research Associate, Dept. Infect. Dis., Copenhagen University Hospital,
1987-1988	Assistant Medical Doctor, Dept. of Gastrointestinal Surgery, Copenhagen University Hospital
1988-1992	Assistant Professor, Medical Microbiology, University of Copenhagen
1992-2004	Associate Professor, Medical Microbiology, University of Copenhagen
1998-2009	Head, Graduate School of International Health, University of Copenhagen
2004-	Professor, Parasitology and International Health, Faculty of Health Science, University of Copenhagen

Other experience

1998	Honorary Professor, University of Khartoum, Sudan
1999-2002	Member, The Scientific Advisory Committee, European Malaria Vaccine Initiative
1998-2001	Member Coordinating Committee of the African Malaria Vaccine Testing Network
2001-2002	Member, Scientific Advisory Committee for the 3 rd MIM Pan-African Congress of Malaria
2002-2003	Member, Deans Strategy Committee, Faculty of Health Sciences, U. of Copenhagen
2002-2006	Deputy-chairman, Inst. Med. Microbiology & Immunol. University of Copenhagen
2004-2007	Member, Scientific Advisory Committee of the African Malaria Network rust (AMANET)
2000-present	Coordinator for University of Copenhagen in the Joint Malaria Programme in Tanzania

Involvement in international research and research capacity building programmes

1987 – 1999	Main Danish counterpart in the research link on malaria and leishmaniasis between University of Khartoum, University of Copenhagen and University of Edinburgh. This research link produced more than 60 papers in international journals and 8 Ph.D. students were trained at University of Copenhagen. The link was sponsored through a Research Capacity Strengthening Grant from Danida (Enreca programme), and grants from EU, WHO and Wellcome Trust.
1991 – 1995	Main Danish counterpart in the research link on malaria between Noguchi Memorial Institute on Medical Research and University of Copenhagen supported through a Danida Enreca programme.
1999-	Main Danish counterpart in a Malaria Research link under establishment which includes Kilimanjaro Christian Medical College, Moshi, Tanzania, National Institute of Medical Research, Tanzania, London School of Hygiene and Tropical Medicine, and University of

Copenhagen.
 2004-2010 Main Danish counterpart for a Grand Challenges in Global Health and a pregnancy malaria vaccine grants funded by Bill and Melinda Gates Foundation.
 1995-ongoing Main Danish counterpart in several projects funded by the European Union.

Involvement in PhD education

1988- Supervisor for more than 35 successful PhD students of which more than 15 are from Africa and organiser of several PhD courses in Denmark and abroad.
 1998- Head, Graduate School of International Health, University of Copenhagen, Denmark
 2000-2009 Danish representative in the Gates Malaria Partnership PhD programme
 2009- Danish representative in the Malaria Capacity Development Consortium (MCDC)

Scientific achievements

Leader of Centre for Medical Parasitology (www.cmp.dk), which currently employs about 60 scientists and technicians. In 2009 the external funding to the Centre amounted to about 4,7 million € from international (Bill and Melinda Gates Foundation, Foundation of the National Institute for Health, European Commission) and national sources (Danish Research Councils, Danida). Author of more than 210 papers in international journals. H factor 41.

Six Selected Publications

1. Cham, G. K., L. Turner, J. D. Kurtis, T. Mutabingwa, M. Fried, A. T. Jensen, T. Lavstsen, L. Hviid, P. E. Duffy, and T. G. Theander. 2010. Hierarchical, domain type-specific acquisition of antibodies to Plasmodium falciparum erythrocyte membrane protein 1 in Tanzanian children. *Infect.Immun.* 78:4653-4659.
2. Rask, T. S., D. A. Hansen, T. G. Theander, P. A. Gorm, and T. Lavstsen. 2010. Plasmodium falciparum erythrocyte membrane protein 1 diversity in seven genomes--divide and conquer. *PLoS.Comput.Biol.* 6,9.
3. Joergensen, L., D. C. Bengtsson, A. Bengtsson, E. Ronander, S. S. Berger, L. Turner, M. B. Dalgaard, G. K. Cham, M. E. Victor, T. Lavstsen, T. G. Theander, D. E. Arnot, and A. T. Jensen. 2010. Surface co-expression of two different PfEMP1 antigens on single plasmodium falciparum-infected erythrocytes facilitates binding to ICAM1 and PECAM1. *PLoS.Pathog.* 6:e1001083.
4. Cham GKK, Turner L, Lusingu J, Vestergaard L, Mmbando BP, Kurtis JD, Jensen ATR, Salanti A, Lavstsen T, Theander TG. Sequential, ordered acquisition of antibodies to Plasmodium falciparum erythrocyte membrane protein 1 domains. *Journal of Immunology.* 2009, 183(5):3356-63.
5. Jensen ATR, Magistrado P, Sharp S, Joergensen L, Lavstsen T, Chiucchiuini A, Salanti A, Vestergaard LS, Lusingu JP, Hermsen R, Sauerwein R, Christensen J, Nielsen MA, Hviid L, Sutherland C, Staalsoe T and Theander TG. Plasmodium falciparum associated with severe childhood malaria preferentially expresses PfEMP1 encoded by Group A var genes. *J Exp Med* 199: 1-13, 2004.
6. Salanti A, Dahlbäck M, Turner L, Nielsen MA; Barfod L, Magistrado P, Jensen ATR, Lavstsen T, Ofori MF, Marsh K, Hviid L and Theander TG. Evidence for the involvement of VAR2CSA in pregnancy-associated malaria. *J Exp Med* 200: 1197-1203, 2004.

Curriculum Vitae for Flemming Konradsen

Qualifications

1990	BSc Biology, University of Copenhagen
1993	Cand. Scient (MSc), Environmental Health, University of Copenhagen
1998	Ph.D. Health Sciences, University of Copenhagen

Positions and employment

2010-	Chairperson, Universities Denmark, UD/BSU Working Group
2009-	Chairperson, BSU Platform on Human Health
2009-	Director, Copenhagen School of Global Health
2008-	Professor, International Environmental Health, Department of International Health, Immunology and Microbiology, University of Copenhagen, Denmark
2008-	Research Fellow, Emory University, Atlanta, USA (22 days per year)
2007-	Deputy Head, Department of International Health, Immunology and Microbiology, University of Copenhagen, Denmark
2006- 2007	Head, Section of International Health, University of Copenhagen, Denmark
2005-2006	Senior International Health Consultant, Consultative Group for International Agricultural Research Centres, based in Sri Lanka (assignments in South Asia)
2000 - 2007	Associate Professor, Dept. of International Health, University of Copenhagen, Denmark.
2006 - 2009	Director, Masters of International Health Program, University of Copenhagen
1999 - 2000	Technical Adviser, Care International (southern Africa)
1993 - 1999	Researcher and later Program Leader, International Water Management Institute, Sri Lanka (assignments in East Africa and South Asia)
1990 - 1993	B.Sc. Assistant in the Department for Technical Advisory Services, Danish Ministry of Foreign Affairs, Copenhagen, Denmark

Research area and expertise

All research, educational activities and capacity building efforts focuses upon low and middle income countries. Environmental public health focusing of water supply, sanitation and hygiene, health impacts of waste water use in agriculture, pesticide toxicology and control of vector borne diseases especially in relation to program and research in Africa and South Asia, including 10 years of research collaboration with Ghana and three years research collaboration with Tanzania. Research methods include epidemiology, qualitative studies, costing studies, health promotion and health systems analysis. Extensive experience from multidisciplinary research.

Supervision of University Students

Since 1993 FK has in the capacity of either an external or internal supervisor supervised 50 BSc, MSc, MPhil or PhD students and acted as an external supervisor for 14 MSc and PhD students enrolled in universities in Europe, USA and Asia. A total of 31 students from Africa or Asia.

Research Output

- International peer-reviewed journal articles: **87** publications (10 articles focusing upon environmental health in Ghana and two on environmental health articles from Tanzania).
- National peer reviewed journal articles: 15 publications (including three from Ghana).
- Peer reviewed books, scientific and technical reports: 33 publications
- International peer reviewed conference papers and abstracts: **45**

Curriculum vitae

Name: Vibeke Rasch

Born: 280762

Relevant education

1990 Graduated as a medical doctor from Odense University, Denmark
 2000 PhD (Gynecology and Obstetrics), University of Southern Denmark
 2003 PhD (International Health), Karolinska Institutet, Sweden
 2010 DSc (International Health, Immunology and Microbiology), University of Copenhagen, Denmark

Period	Employer	Position held
010910-	Dept of Clinical Research, Faculty of Medicine, University of Southern Denmark	Associate professor
010109-	Dept. of Gynecology and Obstetrics, Odense University Hospital (OUH)	Registrar
010803-311209	Dept. of Int. Health, Immunology and Microbiology, University of Copenhagen	Associate professor
011199-310703	Div. of International Health, Dept. of Public Health, Karolinska Institutet, Stockholm, Sweden	Ph.D. stud
010696-311099	Dept of Gynecology and Obstetrics, Faculty of Medicine, University of Southern Denmark	Ph.D. stud
010694-310596	Dept. of Gynecology and Obstetrics, OUH	Registrar
010992-300594	Dept. of Oncology and radiology, Dept. of Urology, Dept of Abdominal Surgery, OUH	Registrar
010790-310892	Internship, OUH	Registrar

Publications

In all 84 scientific publications First author in 52 of these.

Teaching and Supervision

Have been teaching in sexual and reproductive health at University of Copenhagen, University of Southern Denmark, Karolinska Institutet, Lund-Malmö University, Scientific Institute of Family, Population and Children, Hanoi, Vietnam and Jimma University Hospital, Ethiopia. Main supervisor to 34 master students and eight PhD students within the field of sexual and reproductive health and co supervisor to three additional PhD students. Five of the 11 mentioned PhD students are from low income countries.

Research activities

Have for 14 years been involved in studies on sexual and reproductive health in Tanzania. The studies have focused on unsafe abortion, family planning, postabortion care, sexually transmitted infections (especially HIV and HPV), cervical cancer and maternity care. Is also principal responsible party in an enhancing research capacity building project (ENRECA) in Vietnam focusing on reproductive health and the intersection between reproductive health and HIV. Has further on behalf of the Danish National Board of Health conducted research among immigrant women, their contraceptive use and occurrence of induced abortion.

References

Hanh NTT, Gammeltoft T, Rasch V. Early uptake of HIV counseling and testing among pregnant women at different levels of health facilities - experiences from a community-based study in Northern Vietnam. BMC Health Services Research. 2011 jan 1;11(1):29.

Hanh NTT, Gammeltoft T, Rasch V. Number and timing of antenatal HIV testing: Evidence from a community-based study in Northern Vietnam. BMC Public Health. 2011 Mar 25;11(1):183. [Epub ahead of print]

Nguyen NT, Bygbjerg IC, Mogensen HO, Rasch V. Factors associated with the failure to seek HIV care and treatment among HIV-positive women in a northern province of Vietnam. AIDS Patients Care and STDs. 2010 maj 1;24(5):325-32.

Dartell M, Rasch V, Iftner T, Kahesa C, Mwaiselage J, Junge J et al. HPV prevalence and type distribution among HIV positive Tanzanian women. 26th International Papillomavirus Conference, Montreal, Canada. 2010.

CURRICULUM VITAE

NAME AND DOB Vennervald; Birgitte Jyding born 12.06.1956	POSITION TITLE Professor
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Copenhagen, Denmark	MD	1983	Medicine
National Health Board, Denmark	Physician	1989	Medicine
University of Århus, Denmark	MSA	2007	Medical anthropology

Most recent positions and employment

1989-2007 Senior scientist, DBL-Institute for Health Research and Development
 2007-2010 Associate professor, DBL, Parasitology, Health and Development, University of Copenhagen
 2010- Professor, Institute of Veterinary Disease Biology, Faculty of Life Science, University of Copenhagen

Other experience

1989-1995 President of the Danish Society for Parasitology
 2008-2009 Member of the Working Group for Volume 100, Monographs for Biological Agents, The International Agency for Research on Cancer (IARC)
 1992-present Member of the European Schistosomiasis Research Network
 2008-2013 Member, Scientific Advisory Board for the Phase III BILHVAX vaccine trial in Senegal
 2004-present Member of the Scientific Board, INRSP (Membre du Comite Scientifique Technique de l'Institut National de Recherche en Santé Publique)

Involvement in international research and research capacity building programmes

1993-2009 Scientific coordinator of several research projects funded by the European Union and involving several European and African partners
 1993-ongoing Main Danish research partner in several projects funded by the European Union.
 2009-ongoing Scientific coordinator of a project on "Female genital Schistosomiasis" funded by Bill and Melinda Gates Foundation

Extensive experience in research capacity building in Africa as well as coordination of training and research activities in schistosomiasis with more than 20 years of research experience in the area of schistosomiasis epidemiology, parasitology, immunoepidemiology, diagnosis, morbidity assessment and treatment.

Involvement in PhD education and scientific achievement

Supervisor for more than 20 successful PhD students, mostly from Africa and organiser of PhD courses in Denmark and abroad. Author of more than 90 papers in international journals and contributor to 12 book chapters, review papers and scientific reports.

Two Selected Publications

Sacko M, Magnussen P, Keita AD, Traoré MS, Landouré A, Doucouré A, Madsen H, Vennervald BJ. Impact of *Schistosoma haematobium* infection on urinary tract pathology, nutritional status and anaemia in school-aged children in two different endemic areas of the Niger River Basin, Mali. *Acta Trop.* 2010 Dec 30. Leutscher P, Ramarokoto CE, Reimert C, Feldmeier H, Esterre P, Vennervald BJ. Community-based study of genital schistosomiasis in men from Madagascar. *Lancet.* 2000; 355(9198): 117-118-

CURRICULUM VITAE

Susan Reynolds Whyte

Department of Anthropology, Øster Farimagsgade 5, DK-1353 Copenhagen

Born in New York, 1943, Ph.D. University of Washington, 1973

Academic appointments at Department of Anthropology, University of Copenhagen, 1972-present
Professor since 1998.

Research supervision, administration and leadership

Primary supervision of 31 current or completed Ph.d. projects and co-supervision of 18

Danish Council for Development Research 1987-1992. (Vice-chairman from 1990).

Danish Research Council for the Humanities (Statens Humanistiske Forskningsråd), 1987-92.

Leader of Danida evaluation of a nutrition intervention project, Kenya, 1988.

Planning and supervision of a two year national study of community drug use in Uganda, 1992-1994
and a three year intervention research phase 1996-1999 (EU and Danida).

Leader of Enhancement of Research Capacity Programme (Danida funded) on interactions between
communities and health systems in Uganda, 1994-2008

Chair, Working Group on Community Participation in Essential National Health Research
(under Council on Health Research for Development, Geneva), 1998-2000

Leader, Danish National Research School of Anthropology and Ethnography, 2001-4

Deputy leader, Centre of International Health and Development (CISU: Center for International Sundhed
og Udvikling), Copenhagen University, 2004-9

Leader, Research Centre on Social Difference and Health Promotion, 2005-8

Member of core group, Quality Medicine Use for Children in Uganda (Makerere and Copenhagen
Universities, Danida funded)

Member of core group, Changing Human Security: Recovery from Armed Conflict in Northern Uganda
(ENRECA project with Gulu University, Danida funded)

Selected Publications

1. Whyte, S.R., S. van der Geest & A. Hardon. *Social Lives of Medicines*. Cambridge: Cambridge University Press. 2002.
2. Van der Geest S., S.R. Whyte & A. Hardon. The anthropology of pharmaceuticals: a biographical approach. *Annual Review of Anthropology* 25:153-178. 1996.
3. Whyte S.R. Community participation in Essential National Health Research. In: V. Neufeld and N. Johnson (eds.) *Forging Links for Health Research: Perspectives from the Council on Health Research for Development*. Pp. 81-108. Ottawa: IDRC. 2001.
4. Whyte SR, MA Whyte, L. Meinert & B. Kyaddondo. Treating AIDS: dilemmas of unequal access in Uganda. *Journal of Social Aspects of HIV/AIDS* 1(1):14-26. 2004
5. Whyte S.R. Health identities and subjectivities: the ethnographic challenge. *Medical Anthropology Quarterly* 23 (1):6-15. 2009.
6. Gibbon, Sahra & SR Whyte. Introduction: Biomedical technologies and health inequities in the global North and South. *Anthropology & Medicine* 16 (2):97-103. 2009.
7. Whyte SR, MA Whyte, D Kyaddondo. Health workers entangled: confidentiality and certification. In: Hansjoerg Dilger & Ute Luig (eds) *Morality, Hope and Grief: Anthropologies of AIDS in Africa*. Pp. 80-101. Oxford: Berghahn Books. 2010.
8. Whyte SR, MA Whyte, Lotte Meinert, Jenipher Twebaze. Therapeutic clientship: belonging in Uganda's mosaic of AIDS projects. In J. Biehl & A. Petryna (eds.) *When People Come First: Anthropology and Social Innovation in Global Health*. Durham: Duke University Press. 2011.

CURRICULUM VITAE

NAME AND DOB Kurtzhals, Jørgen A. L.; born 31.03.1960	POSITION TITLE Senior consultant, associate professor
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Copenhagen, Denmark	MD	1987	Medicine
University of Copenhagen, Denmark	Diploma in tropical medicine	1993	Medicine
University of Copenhagen, Denmark	PhD.	1994	Leishmania immunoepidemiology
National Board of Health, Denmark	Specialist authorization	2003	Clinical microbiology
University of Copenhagen, Denmark	Professor qualification	2006	Malaria pathogenesis

Positions and employment

2009-present Senior consultant Dept. of Clinical Microbiology, Rigshospitalet, and associate professor, Dept. of International Health, Immunology and Microbiology, University of Copenhagen

Previous positions:

Clinical Microbiology (Rigshospitalet, SSI, and Hvidovre Hospital), 11 years

Other clinical positions (medicine, surgery, anaesthesiology, infectious diseases), 3½ years

PhD student, assist. and later assoc. research professor, University of Copenhagen and Univ. of Ghana, 8 years

Other experience

2009-present Member, Scientific Advisory Committee, European Malaria Vaccine Initiative, reviews for Wellcome Trust, Agence National de la Recherche, Danida, and other donors.

2009-present Intellectual Property Rights agreements and contracts with pharmaceutical companies.

2007-present President Danish Society for Parasitology, vice president World Federation of Parasitologists.

2006-present Head, parasitology laboratory, Dept. Clinical Microbiology, Rigshospitalet

2005-06 Expert assistance on laboratory service, Tanzania and India.

2004-present Board member Danish Research Network for International Health. Member of national advisory committee on travel medicine and other boards on international health.

Involvement in international research and research capacity building programmes

1998-present Continued collaboration with University of Ghana.

1994-98 Posted in Ghana as local responsible for setting up the ENRECA project Accra Copenhagen Research Link. Fellow Noguchi Memorial Institute for Medical Research, construction research laboratory and clinical research at Department of Child Health, Korle-bu Teaching Hospital.

Involvement in graduate and post-graduate education

2009-present Course responsible medical microbiology, Medical School, Univ. of Copenhagen

2004- Board member, Graduate School of International Health, University of Copenhagen

1994-present Supervisor for 5 PhD students and 27 graduate students in Denmark, Ghana and Sweden

Scientific achievements

Leader of Pathogenesis group under CMP with about 10 scientists, technicians, and students plus collaborators in Ghana, Denmark and Australia. Author of more than 100 papers in international journals. Co-editor EQA News. Contributions to text books and popular scientific publications (including Medicin.dk).

Selected Publications

El-Assaad F, Hempel C, Combes V, Mitchell AJ, Ball HJ, Kurtzhals JAL, Hunt NH, Mathys JM & Grau GER. Infect Immun 2011 (E-pub ahead of print)

Adjei GO, Kristensen K, Goka BQ, Høgberg LCG, Alifrangis M, Rodrigues OP & Kurtzhals JAL. Antimicrobial Agents Chemother 2008; 52: 4400-4406.

Kurtzhals JAL, Helleberg M, Goka BQ & Akanmori BD. Lancet 2003; 361: 1393

ANNEX II Detailed budgets: Tanzania mainland, Zanzibar, Ghana, cross-cutting

Mainland Tanzania

Summary	SOUTH BUDGET (2 years)			NORTH BUDGET (2 years)		
	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)
1 Salaries and emoluments	194,000	498,000	757,000	225,000	550,000	950,000
2 Taxameter / educ. grants	605,000	803,000	1,243,000	-	-	-
3 Trips abroad and field work	300,000	775,000	927,500	140,000	562,200	802,200
4 Equipment	-	-	-	-	-	-
5 Materials	42,500	60,000	77,500	5,000	5,000	10,000
6 Publ. Diss. and communication	-	-	-	-	-	-
Sub-total DKK	1,141,500	2,136,000	3,005,000	370,000	1,117,200	1,762,200
7 Admin fee, DK, 20%	-	-	-	74,000	223,440	352,440
8 Admin fee, South part., 7%	79,905	149,520	210,350	-	-	-
9 Study stays in DK, DFC	60,000	60,000	120,000	-	-	-
10 External audit	30,000	30,000	30,000	-	-	-
Grand Total (DKK)	1,311,405	2,375,520	3,365,350	444,000	1,340,640	2,114,640

WP 1 Postgraduate education						
<i>Activity 1 (Review and updating of curricula)</i>						
1 Salaries and emoluments	50,000	50,000	50,000	-	50,000	50,000
5 Materials	5,000	5,000	5,000	-	-	-
<i>Activity 2 (Development of new courses)</i>						
1 Salaries and emoluments	44,000	88,000	132,000	50,000	100,000	150,000
3 Trips abroad and field work	-	-	-	20,000	40,000	60,000

<u>Activity 3 (Course implementation)</u>							
1	Salaries and emoluments	-	-	-	-	150,000	200,000
3	Trips abroad and field work	-	82,500	110,000	-	120,000	160,000
<u>Activity 4 (PhD and Master project implementation)</u>							
1	Salaries and emoluments	-	-	-	100,000	100,000	200,000
2	Taxameter / educational	275,000	275,000	550,000	-	-	-
3	Trips abroad and field work		137,500	137,500	40,000	40,000	80,000
9	Study stays in DK, DFC	60,000	60,000	120,000	-	-	-
WP 2 Enabling research environment							
<u>Activity 1 (Staff recruitment)</u>							
1	Salaries and emoluments	-	-	-	-	25,000	50,000
2	Taxameter / educational	330,000	495,000	660,000	-	-	-
3	Expenses for trips abroad and	-	-	-	-	20,000	40,000
<u>Activity 2 (Exchange program)</u>							
1	Salaries and emoluments	50,000	110,000	110,000	-	-	-
3	Trips abroad and field work	75,000	150,000	150,000	-	120,000	120,000
<u>Activity 3 (Research proposals)</u>							
1	Salaries and emoluments	-	-	-	-	-	50,000
3	Trips abroad and field work	-	80,000	80,000	-	40,000	40,000
5	Materials	-	2,500	2,500	-	-	-
<u>Activity 4 (Mentorship and PDP)</u>							
1	Salaries and emoluments	-	-	165,000	-	-	50,000
3	Trips abroad and field work	-	-	-	-	-	40,000
<u>Activity 5 (KCMC Research Conference)</u>							
1	Salaries and emoluments	-	-	-	-	25,000	50,000
2	Taxameter / educational	-	33,000	33,000	-	-	-

3	Trips abroad and field work	100,000	100,000	-	40,000	40,000
5	Materials	-	10,000	10,000	-	-
WP 3 Institutional Capacity Building						
<i>Activity 1 (Postgraduate handbook)</i>						
1	Salaries and emoluments	25,000	25,000	25,000	-	-
5	Materials	2,500	2,500	2,500	-	-
<i>Activity 2 (Tenure track policy)</i>						
1	Salaries and emoluments	25,000	25,000	25,000	-	-
5	Materials	2,500	2,500	2,500	-	-
<i>Activity 3 (Supervisory skills)</i>						
1	Salaries and emoluments	-	-	-	50,000	50,000
3	Trips abroad and field work	100,000	100,000	100,000	40,000	62,200
5	Materials	20,000	20,000	20,000	-	-
<i>Activity 4 (Quality assurance system)</i>						
1	Salaries and emoluments	-	-	-	25,000	50,000
3	Trips abroad and field work	125,000	125,000	125,000	40,000	80,000
5	Materials	12,500	12,500	12,500	5,000	5,000
<i>Activity 5.a. (Postgraduate administrative office)</i>						
1	Salaries and emoluments	-	-	-	-	50,000
3	Trips abroad and field work	-	-	125,000	-	80,000
5	Materials	-	-	12,500	-	5,000
<i>Activity 5.b. (KCMC fellowship programme)</i>						
1	Salaries and emoluments	-	50,000	50,000	-	-
5	Materials	-	5,000	5,000	-	-
<i>Activity 6 (Fundraising unit)</i>						
1	Salaries and emoluments	-	150,000	150,000	-	-

<u>Activity 7 (Student platform)</u>							
1	Salaries and emoluments	-	-	50,000	-	-	-
5	Materials	-	-	5,000	-	-	-
Total DKK*		1,201,500	2,196,000	3,125,000	370,000	1,117,200	1,762,200

* Excl. Admin. fee and audit

Zanzibar

Summary	SOUTH BUDGET (2 years)			NORTH BUDGET (2 years)		
	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)
1 Salaries and emoluments	153,000	273,000	275,500	100,000	250,000	500,000
2 Taxameter / educational	137,500	445,500	445,500	-	50,000	50,000
3 Trips abroad and field work	287,000	220,000	532,000	100,000	160,000	350,000
4 Equipment	-	-	-	-	-	-
5 Materials	37,500	35,000	182,500	-	-	-
6 Publ. Diss. and communication	-	-	-	-	-	-
Sub-total DKK	615,000	973,500	1,435,500	200,000	460,000	900,000
7 Admin fee, DK, 20%	-	-	-	40,000	92,000	180,000
8 Admin fee, South part., 7%	43,050	68,145	100,485	-	-	-
9 Study stays in DK, DFC	-	110,000	110,000	-	-	-
10 External audit	15,000	15,000	15,000	-	-	-
Grand Total (DKK)	673,050	1,166,645	1,660,985	240,000	552,000	1,080,000

WP 1 Postgraduate training							
<u>Activity 1 (PhD)</u>							
2	Taxameter / educational	-	308,000	308,000	-	50,000	50,000
3	Trips abroad and field work	-	-	-	-	20,000	20,000

9	Study stays in DK, DFC	-	110,000	110,000	-	-	-
	<u>Activity 2 (MSc)</u>						
2	Taximeter/educational grants	137,500	137,500	137,500	-	-	-
	<u>Activity 3 (Research methodology courses)</u>						
1	Salaries and emoluments	-	-	-	50,000	-	100,000
3	Trips abroad and field work	177,000	-	282,500	50,000	-	100,000
5	Materials	20,000	-	47,500	-	-	-
	WP 2 Institutional Capacity building						
	<u>Activity 1 (Environmental course)</u>						
1	Salaries and emoluments	80,000	160,000	160,000	25,000	200,000	200,000
3	Trips abroad and field work	75,000	150,000	150,000	20,000	80,000	80,000
5	Materials	10,000	20,000	20,000	-	-	-
	<u>Activity 2 (Reproductive health course)</u>						
1	Salaries and emoluments	40,000	80,000	80,000	25,000	50,000	50,000
3	Trips abroad and field work	35,000	70,000	70,000	30,000	60,000	60,000
5	Materials	7,500	15,000	15,000	-	-	-
	<u>Activity 3 (E-learning)</u>						
1	Salaries and emoluments	-	-	2,500	-	-	100,000
3	Trips abroad and field work	-	-	-	-	-	50,000
5	Materials	-	-	25,000	-	-	-
	<u>Activity 4 (Resource centres)</u>						
1	Salaries and emoluments	33,000	33,000	33,000	-	-	50,000
3	Trips abroad and field work	-	-	29,500	-	-	40,000
5	Materials	-	-	75,000	-	-	-
	Total DKK*	615,000	1,083,500	1,545,500	200,000	460,000	900,000

* Excl. Admin. fee and audit

Ghana

Summary	SOUTH BUDGET (2 years)			NORTH BUDGET (2 years)		
	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)	Scenario 1 (4 mill.DKK)	Scenario 2 (7 mill.DKK)	Scenario 3 (10 mill.DKK)
1 Salaries and emoluments	325,000	550,000	650,000	300,000	800,000	1,150,000
2 Taxameter / educational	645,000	1,240,000	1,860,000	50,000	125,000	187,500
3 Trips abroad and field work	535,000	780,000	1,025,000	190,000	680,000	1,080,000
4 Equipment	-	-	-	-	-	-
5 Materials	72,000	122,000	172,000	22,000	22,000	22,000
6 Publ. Diss. and communication	-	-	-	-	-	-
Sub-total DKK	1,577,000	2,692,000	3,707,000	562,000	1,627,000	2,439,500
7 Admin fee, DK, 20%	-	-	-	112,400	325,400	487,900
8 Admin fee, South partners,	110,390	188,440	259,490	-	-	-
9 Study stays in DK, DFC	264,000	528,000	792,000	-	-	-
10 External audit	60,000	60,000	60,000	-	-	-
Grand Total (DKK)	2,011,390	3,468,440	4,818,490	674,400	1,952,400	2,927,400

WP 1 Phd programme development						
<i>Activity 1 (PhD courses)</i>						
1 Salaries and emoluments	50,000	100,000	150,000	50,000	100,000	150,000
3 Trips abroad and field work	75,000	150,000	225,000	60,000	160,000	240,000
5 Materials	50,000	100,000	150,000	-	-	-
<i>Activity 2 (TOT supervisor course)</i>						
1 Salaries and emoluments	-	-	-	-	50,000	50,000
3 Trips abroad and field work	70,000	70,000	70,000	-	80,000	80,000
<i>Activity 3 (Appraisal of e-learning)</i>						
1 Salaries and emoluments	-	-	-	-	100,000	100,000

3	Trips abroad and field work	-	-	-	-	40,000	40,000
	<u>Activity 4 (PhD forum)</u>						
5	Materials	22,000	22,000	22,000	22,000	22,000	22,000
	<u>Activity 5 (PhD scholarships)</u>						
1	Salaries and emoluments	-	-	-	200,000	400,000	600,000
2	Taximeter / educational	440,000	880,000	1,320,000	-	-	-
3	Trips abroad and field work	-	-	-	60,000	120,000	180,000
9	Study stays in DK, DFC	264,000	528,000	792,000	-	-	-
	WP 2 Enabling research env.						
	<u>Activity 1 (Mentorship programme)</u>						
1	Salaries and emoluments	50,000	100,000	100,000	-	-	-
	<u>Activity 2 (Faculty exchange)</u>						
2	Taximeter / educational	30,000	60,000	90,000	-	-	-
3	Trips abroad and field work	120,000	240,000	360,000	50,000	200,000	400,000
	<u>Activity 3 (Proposal development grants)</u>						
2	Taximeter / educational	100,000	150,000	225,000	25,000	75,000	112,500
	<u>Activity 4 (Research)</u>						
2	Taximeter / educational	75,000	150,000	225,000	25,000	50,000	75,000
	WP 3 Institutional Capacity Building						
	<u>Activity 1 (Effective project management)</u>						
1	Salaries and emoluments	175,000	300,000	350,000	50,000	100,000	150,000
3	Trips abroad and field work	50,000	100,000	150,000	20,000	40,000	60,000
	<u>Activity 2 (Knowledge management)</u>						
3	Trips abroad and field work	200,000	200,000	200,000	-	-	-
	<u>Activity 3 (Fundraising)</u>						
1	Salaries and emoluments	50,000	50,000	50,000	-	-	-

<u>Activity 4 (Proposal writing)</u>							
1	Salaries and emoluments	-	-	-	-	50,000	100,000
3	Trips abroad and field work	20,000	20,000	20,000	-	40,000	80,000
Total DKK*		1,841,000	3,220,000	4,499,000	562,000	1,627,000	2,439,500

* Excl. Admin. fee and audit

Capacity Building Support Unit

		North Budget (2 years)		
Summary		Scenario 1	Scenario 2	Scenario 3
		(4 mill.DKK)	(7 mill.DKK)	(10 mill.DKK)
1	Salaries and emoluments	1,600,000	1,900,000	2,250,000
2	Taximeter/educational grants	-	-	-
3	Expenses for trips abroad and field work	200,000	250,000	300,000
4	Equipment	-	-	-
5	Materials	20,000	20,000	20,000
6	Publication dissemination and com.	350,000	400,000	400,000
Sub-total DKK		2,170,000	2,570,000	2,970,000
7	Admin fee, DK, 20%	434,000	514,000	594,000
8	Admin fee, South partners, 7%	-	-	-
9	Study stays in DK, DFC	-	-	-
10	External audit	30,000	30,000	30,000
Grand Total (DKK)		2,634,000	3,114,000	3,594,000

WP 1 Capacity building Support Unit			
<u>Activity 1 (Organization, coordination and project management)</u>			
1	Salaries and emoluments	1,100,000	1,350,000
3	Expenses for trips abroad and field work	120,000	160,000
5	Materials	20,000	20,000
<u>Activity 2 (Thematic Working Groups)</u>			
6	Publication dissemination and com.	100,000	150,000
<u>Activity 3 (Networking, communication and dissemination)</u>			
1	Salaries and emoluments	400,000	600,000
3	Expenses for trips abroad and field work	40,000	60,000
6	Publication dissemination and com.	250,000	250,000
<u>Activity 4 (Fundraising)</u>			
1	Salaries and emoluments	100,000	300,000
3	Expenses for trips abroad and field work	40,000	80,000
Total DKK excl. Admin. fee		2,170,000	2,970,000