

Building Stronger Universities, Phase III 2017-2021

Programme Document Annexes

August 2017

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BSU Phase III Partnership Proposal

2017-2021

Gulu University



July 2017

GULU UNIVERSITY

P.O BOX 166, Gulu, Uganda

Tel: +256 471 432 094

<http://www.gu.ac.ug>

Summary Fact Sheet

Building Stronger Universities (BSU) Phase III is a DANIDA funded project under the platform of Stability, Democracy and Rights (SDR) and a continuation of BSU I & II. The partners in the collaborative programme are:

a) Gulu University (GU): **Responsible Institution**

Contact person: Agatha Alidri; agatha2000alidri@gmail.com/a.alidri@gu.ac.ug ; +256 774784232; Department of Education Management, Faculty of Education and Humanities, Gulu University, P. O. Box 166, Gulu, Uganda.

b) **Consortium of Danish Universities (CDU):** Lead University – Aalborg University, Faculty of Humanities.

Contact persons: Prof. Lone Dirckinck-Holmfeld; +45 22822074, lone@hum.aau.dk.
Department of Communications and Psychology, Faculty of Humanities, Aalborg University,

Professor Susan Reynolds Whyte; +45 61685580/+45 35323477
susan.reynolds.whyte@anthro.ku.dk, Department of
Anthropology, University of Copenhagen.

Partners at Gulu University are drawn from the Faculty of Education and Humanities, Institute of Peace and Strategic Studies, Faculty of Business and Development Studies, and Institute of Research and Graduate Studies. The Danish partners include researchers from four Danish

Universities: University of Copenhagen; University of Southern Denmark; Roskilde University and Aalborg University.

1. Rationale and main lessons learnt during BSU II

Gulu University is an upcoming public university that started operating in 2002. The University was legally established in 2003 at the height of the Lord's Resistance Army (LRA) war in northern Uganda. The war in northern Uganda ended, but its consequences are still felt in the region and at Gulu University because it cannot attract highly qualified academic staff. At the inception of BSU II in 2013, less than a quarter of the 240 academic staff members held PhD degrees. The staff development situation was wanting and an organised PhD programme was in its infancy. The method of content delivery was based on traditional teacher centered pedagogy. The overall research infrastructure, especially the IT system, was weak. Therefore, the ambition level of BSU II was set at broad basics, appropriate to the situation of Gulu University.

The *thematic focus areas* included a continuation from BSU I which was on 'Stability, Democracy and Rights' and BSU II concerned education, 'Quality, Equity and Innovation in Education' and 'Culture, Education and Society'. All the three have proved relevant. 'Quality, Equity and Innovation in Education' has become a major theme for revision of curricula and teaching methodology at Gulu University itself, through the introduction of Problem-based Learning (PBL) and e-learning. In BSU III a further focus and consolidation will be introduced with only two thematic areas, building on the achievements in BSU II.

MAIN ACHIEVEMENTS AND POSITIVE LESSONS LEARNED

- The development of a PhD structure has made progress with the revision of the Graduate Students Handbook, which sets out procedures for Master's and PhD programmes. The Handbook has been approved by the Gulu University Senate and Council.
- As part of strengthening Gulu University's capacity within research training, the University has developed a regular set of mandatory cross-cutting courses as well as a series of elective ones. Pilot-testing has shown what has worked well and where adjustments are needed.
- On the 12 completion grants, 3 study stays, 2 Masters and 1 PhD stipend are assisting Gulu academic staff to strengthen their research capacity and research collaboration. There were fewer study stays in Denmark than planned, but their length was extended, allowing greater benefit from another academic milieu.
- The acquisition of four portable units for office space has provided fair workspace and improved communication and access to research materials for academic staff.
- The strengthening of library staff's capacity and skills to support research has been initiated with a study stay for two library staff at Aalborg University. This has laid the ground for implementation of more ICT related services and for Gulu University to develop a staff and student strategy for digital scholarship.
- The parallel up-grading of ICT infrastructure (hardware, software bandwidth), training of ICT technical staff, and developing a policy and strategy for ICT in teaching, research and outreach was highly beneficial to the University in developing its own Learning Management System (LMS).

- The south-south collaboration with Maseno University in western Kenya was particularly valuable in supporting ICT development at Gulu University through needs assessment, policy formulation and training, as well as in the MAGAART project. Synergies with other support projects have thus proven to be highly beneficial.
- Blended, networked learning (Problem Based Learning [PBL] + online learning + Learning Management System [LMS]) has shown promise in programme development and delivery. This has enhanced outreach activities and interaction/engagement with local communities. The LMS platform is being used to support BSU workshops, graduate programme development and other faculty academic programmes.
- The Master in Education Management curriculum has been revised based on these pedagogical methods and accredited by the National Council for Higher Education.

DIFFICULTIES, CHALLENGES, LESSONS LEARNED

- As a growing University, it has a dearth of senior experienced academics. The few academic staff takes on many obligations and their time is insufficient for teaching, research and outreach activities. The limited number of PhD academic staff at Gulu University makes supervision and teaching of PhD courses highly dependent on academics from other universities especially within Faculty of Education and Humanities; and Business and Development Studies.
- Project management was not effective because of the gap between the Steering Committee and Coordination Team. The Steering Committee and the Coordination Team have been expanded with new structures to address the administrative issues. In BSU III administrative structure, the Steering Committee comprises Deans and Directors of Faculties and Institutes. The Coordination Team has been expanded to include the Coordinator and two deputies (Technical and Administrative).
- BSU II did not have opportunities for collaborative North-South research projects, with the hands-on experience that such projects might have provided.
- The University still has inadequate electronic library resources and bandwidth, incapacitating e-learning training and content development.
- Tracking progress of PhD students through the formalities of University requirements using the paper-based trail is challenging.
- PhD completion grants and study stays have supported research on a wide variety of topics, which was necessary in this phase to increase the number of academic staff with PhDs.

Justification for continued support from Danida

BSU II was deliberately planned to consolidate and broaden achievements of BSU I. There is thus a need to consolidate the gains BSU II has made in curriculum development, teaching and learning methods, ICT infrastructure and policies, research training, PhD courses and outreach activities.

BSU II has demonstrated that Gulu University is able to productively benefit from financial, academic and technical support in its efforts to strengthen research capacity at PhD level and research-based education, with a special emphasis on research 'for community transformation' and sustainable development. Building on the achievements in BSU I small research grants and

BSU II completion grants, BSU III will pilot collaborative research projects based on Action Research.

2. Strategic direction and Theory of Change of a continued partnership

The aim of BSU III is to strengthen Gulu University's post-graduate training so that at the end of the four years, the University will be undertaking well-recognized research that engages local communities for transformation and provides capacity for research-based teaching and learning. Over the four years, the contribution to research and teaching from the Danish side will gradually decline as Gulu University academics take on more and more responsibility. This approach will gradually shift responsibility for students, supervision, teaching and collaboration projects to the Gulu University academics. The joint teaching of cross-cutting courses will progressively be led by Gulu University staff.

THEORY OF CHANGE: The changes will be effected through collaboration between academic staff at Gulu University and the four Danish Universities. Part of this collaboration enhances upgrade and use of research infrastructure and administrative systems to benefit Gulu University. The strengthening of Information and Communication Technology (ICT), PBL and e-learning at Gulu University will provide the springboard for these changes. The practice of jointly teaching PhD courses and undertaking collaborative research and knowledge exchange with local communities will contribute to improved capacity for action research. The strengthening of research capacity and orienting toward community engagement enhances teaching and postgraduate programmes. Collaborative research addresses community challenges through action, knowledge exchange and Problem Based Learning. By linking a few selected collaborative action research projects to courses using PBL and to individual research projects, outreach will be more firmly integrated in teaching and research. This will enhance capacity for outreach at both system and individual level. Examples could be a livelihood initiative for single mothers or the introduction of e-learning at a local high school.

The capacity of PhD academics is enhanced at a Post Doc level to achieve good research products and services to improve teaching, research and learning at Gulu University.

The Theory of Change provides outcomes that are consistent with the three outcome areas indicated in Danida's BSU III concept note, namely: administrative capacity; research and outreach capacity at system level; and research and outreach capacity at individual level. Importantly, the outputs and outcomes will be driven through activities structured and managed partly according to specific themes, partly in areas cutting across these themes and extending to the entire University.

The outcome of this collaboration integrates into the Gulu University institutional framework through mandatory PhD cross-cutting courses, taught across all Faculties and Institutes, while the elective courses are taught in discipline specific areas. The e-learning resources are shared by all academic units and other campuses and constituent colleges of Gulu University. The collaborative research activities with north partners support masters and PhDs in addressing community needs based on the PBL approach.

Gender equity is enshrined in Gulu University Gender Policy to ensure equal opportunity to both staff and graduate students in collaborative research, PhD grants and training. The female participation in all levels of implementation shall be at least 40% to meet the basic principles of Gulu University Gender Policy.

DEVELOPMENT AND CONSOLIDATION FROM BSU II

BSU III will consolidate and focus the work of BSU II. The previous three thematic areas in BSU II have been reduced to two thematic areas.

Greater coherence across all activities will be achieved by tighter integration of PhD courses, PhD stipends/completion grants, collaborative research, outreach and ensuring sustainable structures. Collaborative research, which should have an Action Research element, entails cooperation between Danish and Gulu University researchers, and the communities through outreach and PBL. All these activities are embedded within the two thematic areas to ensure synergies in PhD education. Mandatory cross-cutting PhD courses have been identified by Gulu University and we have piloted elective courses for the two thematic areas. The input to these courses by Danish partners has been substantial in BSUII, but will diminish over the course of BSUIII as Gulu University assumes the primary responsibility. Also the Master courses integrating PBL and e-learning that have been piloted in BSUII, will be further consolidated and implemented in BSUIII.

The Institute of Research and Graduate Studies will be strengthened through the introduction of practical ICT management tools for monitoring the progress of Masters and PhD students. The Graduate Handbook, which underwent major revision in BSUII, will be disseminated and implemented in BSUIII. The strengthening of the electronic data infrastructure will support teaching and learning (bandwidth, hardware, software, data-management, training and support).

THEMATIC AREAS

Transforming education: Education is intended to be transformative of individuals and society. The government of Uganda through its National Development Plan II (2015/2016-2019/2020) and Vision 2040 emphasises sustainable development through research, science and technology. This supports our intention to undertake humanistic and social science research on transforming education in BSU III.

In post-war northern Uganda, as in the rest of the country, families, government and donors invest enormous resources and great expectations in education as a basis for development. From nursery schools, to primary and secondary schools, to tertiary institutions like vocational schools and universities, to shorter and longer training courses, there are continuing efforts to provide transformative teaching and learning. Early school leaving and lack of correspondence between school curricula and after-school occupations continue to have significant problems. Training, seminars, and workshops have become major activities for instruction and learning after primary level, yet they are seldom studied as forms of education.

New education policies are being rolled in, but they are not correctly implemented due to some unforeseen consequences.

Education itself is in need of, and is undergoing, transformation. The introduction of new pedagogical approaches and technologies is reckoned to have significant potential. At Gulu University, and elsewhere, e-learning and Problem-Based Learning (PBL) are being introduced. Research is needed on the modalities, benefits, consequences and challenges of these approaches, individually and in combination. We therefore seek to examine questions such as: how do new pedagogical approaches relate to conventional pedagogical methods and how they contribute to community engagement and innovation.

Rights, resources and gender in post-war development: Northern Uganda suffered serious abuses of human and civil rights during the 20-year civil war, and conflicts continue over procedures for settling the many 'post wars conflicts' that have ensued after the end of encampment. The statutory fora for justice and dispute resolution do not function well, and other instances are called into play, such as traditional and clan leaders, Acholi Religious Leaders Peace Initiative (ALPI), the police, Justice Law and Order Sector (JLOS), Refugee Law Project (RLP) and various NGOs. The University through the Institute of Peace and Strategic Studies has established collaboration with Cultural Leaders in the Greater North and Acholi Religious Leaders' Peace Initiative (a local NGO in Gulu) to research and educate the community in areas of justice, peace building, dispute and conflict resolution. Collaborative research is needed on the principles of rights, mediation, and restitution that underpin the legal fora and on their implementation and consequences for equity, equality and conflict prevention. Such research is relevant in northern Uganda and in the wider region, where violence is still ongoing.

Related to these questions of rights are questions about access to resources such as land, money, and other means of livelihood. As in most patrilineal societies, access has long been skewed in

favour of senior males. Relations between men and women, and between youth and elders, have been deeply affected by war and encampment, and to some extent also by policies and interventions to empower women and youth. Expectations have changed faster than reality and gender relations especially are often characterized by tension. In popular and development discourse, youth are often identified as a problem to which interventions should offer solutions. Many aspects of life—livelihood, education, marriage, sexual and reproductive health—are affected by changes, and desires for change, in gender and generational relations. Focus will be on gender and generation in relation to resource access.

Within these thematic areas, the aim is to establish Research Group to increase activities and support them beyond the BSU project.

EMPHASIS ON OUTREACH AND INNOVATION

The refined thematic areas open possibilities for more outreach and for working with non-academic, economic, social and civil society actors. Outreach components and interaction with local organisations and communities, such as specific schools and small-scale enterprises, will be incorporated in all the research and researcher training efforts described above. The innovative pedagogical and study methods (PBL and e-learning) piloted with Master of Education Planning Management and Master of Business Administration (MBA) students in BSU II will be rolled out to other masters courses like Master of Arts in Public Administration, Master in Information and Communication Technology for Development (ICT4D), PhD cross-cutting courses and the collaborative research projects in BSU III. A Danish civil society organisation, Access2innovation, building on principles of triple helix collaboration (a network between University, private sector and Community) will partner with Gulu University/Danish Universities to strengthen innovation and community outreach and support in developing and pilot testing new business models. Gulu University in collaboration with Civil Society Organizations and Communities work to alleviate problems within the specific thematic areas. Further to community outreach, PBL involving communities directly will be initiated. These could be in relation to actual challenges in the North as the refugee situation and other community pressing issues emerge.

SYNERGIES

BSU III continues collaboration with the FFU funded project Governing Transition in Northern Uganda: Trust and Land (aka TrustLand). There is also synergy with another FFU project: Post-conflict Mobility: Challenges and Potentials for Primary Health Care in Northern Uganda. The Dept. of Anthropology, University of Copenhagen, has worked with several research capacity enhancement projects supporting Makerere University and Roskilde University has similar experiences from collaboration with the Centre for Basic Research and Makerere University researchers in the late 1990s and early 2000s. Gender research at Gulu University has constructive interaction, including researcher training collaboration, with the Makerere University School of Gender in Kampala, ALPI, JLOS and Police.

Gulu University has development projects with other collaborating partners. The collaboration with University of New South Wales aims at improving the quality of teaching and e-learning at Gulu University at undergraduate level. The African Development Bank (AfDB) project focuses on

infrastructure development, science and technology. Makerere University-SIDA project focuses capacity at Masters and PhD levels in partner public universities in Uganda. Gulu University is a beneficiary with 13 PhD positions to be registered at Makerere. These projects have different foci to this application; however they also share some common interests. They are well coordinated to ensure synergies. As an example, the BSU-supported LMS platform is being used by all projects and faculties in the University.

UPSCALING BEYOND THOSE DIRECTLY INVOLVED

To institutionalize BSU, the Director of the Institute for Research and Graduate Studies (IRGS) and the Director for Planning and Development have been included in the Steering Committee. Regularizing PhD education will be possible through use of the revised Handbook. Cross-cutting courses and electronic monitoring systems will be introduced by IRGS to support research, learning and outreach activities. In addition, IRGS will oversee the implementation of PBL and e-learning in the masters program.

3. Objectives, Outcomes and Outputs

Development objective: Significant social problems in northern Uganda are addressed through uptake of collaborative research that generates knowledge relevant for community transformation, as well as research-based teaching (PBL) that prepares graduates for working with such problems by 2021.

Immediate objective: Academic staff undertake selected collaborative/action research projects with local economic and social actors and engage students in problem-based learning together with those actors by 2019

Work package 1: Research and Teaching Infrastructure, Services and Facilities

Outcome 1. Administrative frameworks, facilities and services for research strengthened by 2021.

Output 1.1 IRGS functions with accessible electronic monitoring of Masters and PhD progress and Faculties, Institutes and Supervisors use the system by 2020.

Output 1.2 Plagiarism software is acquired and taken into use. Research outputs quality assured by 2020.

Output 1.3 By 2019 IRGS and the Library create repository of Masters and PhD thesis accessible to researchers and students.

Output 1.4 By 2021 the e-campus strategy for GULU has been established. A campus-wide learning

platform (Moodle) is implemented and taken into use by management, staff and students. Staff and students have access to and are using relevant e-resources and regularly collaborating with external partners through ICT. A technical and IT-didactic support desk has been established.

Output 1.5 Gulu University Research Agenda for the BSU III thematic areas reviewed and disseminated to the stakeholders by 2018.

Output 1.6. A Grant Desk to support development of grant proposals and applications is functioning by 2020.

Output 1.7 Gulu University staff administers and manage BSU and other external grants efficiently by 2018.

Work Package 2: Collaborative research organization and post graduate teaching

Outcome area 2. By 2021 collaborative research and outreach capacity are improved by strengthening organisation and systems for postgraduate teaching and learning, building on and reinforcing on-going research. Courses and PhD projects will preferably be tied to a limited number of collaborative action research projects.

Output 2.1 Mandatory cross-cutting PhD courses and elective thematic PhD courses within the thematic areas (i. *Transforming education and ii. Rights, resources and gender in post-war development*) developed and taught by Gulu University staff and partners by 2020.

Output 2.2 PBL principles and e-learning practices integrated into at least three graduate course units in different programmes by 2019. Blended learning will be encouraged so that a pilot of selected course units from Humanities and Social Sciences are delivered on the LMS as well as using PBL principles. Rolled out to at least five programmes in 2021.

Output 2.3 Two thematic research networks (i. *Transforming education and ii. Rights, resources and gender in post-war development*) established with external and other tertiary education institutions by 2020. Collaborative research, seminars, and conferences provide platform for establishing active networks. Regular public lectures/debates organized at the University and talk shows hosted on local radio stations.

Work Package 3: Collaborative research and outreach at the levels of individuals

Outcome area 3. By 2021 collaborative research and outreach capacity within the thematic areas (i. *Transforming education and ii. Rights, resources and gender in post-war development*) are improved by strengthening research, postgraduate teaching and learning and networks at the level of individuals. This will be achieved through the triple helix (a network between University, private sector and Community) approach and action research on community needs identified through PBL. A limited number of collaborative and action research projects to be coordinated with existing PhD and masters projects.

Output 3.1 Communities, private sector and/or social actors are actively engaged in innovative projects and collaborative research on Rights, Resources and Gender. Practitioners (government, NGO, civil society) participate in Gulu University courses and dialogues by 2019; joint articles submitted for publication by 2020, active networks established with stakeholders by 2021.

Output 3.2 Communities, private sector and/or social actors are actively engaged in innovative projects and collaborative research on Transforming Education. This research will examine the implementation of e-learning and PBL at Gulu University, and will also address transformation of education, teaching and learning in selected schools by 2021. Practitioners (government, NGO, civil society) participate in Gulu University courses and dialogues by 2019; joint articles submitted for publication by 2020, active networks established with stakeholders by 2021

Output 3.3 Each PhD student is affiliated with one of the thematic networks. Joint brown bag lunches are organized on a regular basis. PhDs are afforded opportunity to make at least two presentations of their research to peers within their disciplines and one conference by 2019. All scholars are called for to do presentations of draft research papers.

Output 3.4 At least two competitive research grant proposals developed in response to calls and submitted within the thematic areas by 2019.

Output 3.5 PhD projects on *Rights, Resources, and Gender* completed by 2021.

Output 3.6 PhD projects on *Transforming Education* completed by 2021.

4. Risks and Mitigation Measures

The most significant risk factor remains the major justification for the BSU III project: Gulu University is a young university with severe resource constraints. There are relatively few PhD staff and very heavy workloads for those on the thematic areas. An activity work plan and time plan will be developed to ensure effective use of the limited human resources.

Another risk factor involves coordinating activities between North and South. Many of the collaborative activities – courses, workshops, and training sessions – are necessarily structured by the academic calendars in Gulu and in Denmark. To reach our target groups at Gulu, most activities must be squeezed into about 8 months – basically August-November, January-February and perhaps March-April. These are also busy academic months in Denmark and there is a risk that some Danish partners will not be able to coordinate travel with other partners in specific months. However this risk will be mitigated by careful planning through identification of alternative researchers from Gulu University and the Danish partners. In some cases, Gulu University staff will deliver while the north partners participate online. Where expertise is lacking, the south-south collaboration could be possible. In the four-year implementation period, continuous realignment of plans will be undertaken to mitigate the identified risks.

There is a risk of insufficient logistical support for fieldwork since the project does not have transport. Gulu University shall be requested for faculty and institute vehicles for fieldwork and the project will fuel these vehicles.

Staff turnover is a challenge due to brain drain. The University management is aware of the challenge of staff turnover. It has a promotional and retention policy. In addition, Gulu University bonding policy of five years after PhD completion is applied to the academic staff. It also has a refund policy should a member leave the University service before prior to the bonding period.

There are risks that lie outside of the University control. Key components of the project depend on the Internet connectivity. In spite of Gulu University being connected to the national fibre backbone with a stable internet connection, there are often fibre breakdowns on the national backbone. The project uses mobile routers to maintain connectivity.

Periodic power outages (load shedding) are experienced. Mitigation involves making use of Gulu University and BSU back-up generators. Power back-up batteries (inverters) have been procured for the Server room to ensure constant electricity supply and Internet connectivity.

Institutional risks: programmes and collaborative activities in Gulu University have been disrupted by staff and students' strikes during BSU II. This may re-occur but, based on past experience, these can be handled administratively.

5. Sustainability and Continuation

BSU project activities at Gulu University are institutionalised and receive budgetary considerations. IT-infrastructure for learning has been established and the operational cost is budgeted at Gulu University

Gulu University Graduate Handbook is a BSU output providing guidelines for graduate studies at the Institute of Research and Graduate Studies. It has been approved and implementation will be supported so that Faculties and Institutes use it as a guide in research and graduate training.

Human resource development in the proposed areas of capacity development at Gulu through graduate training and research are improving. The project has boosted PhD completion rates thus improving staff capacity for research and teaching.

GU staff is gradually assuming more responsibility in teaching the cross-cutting and elective thematic courses. Staff capacity in PhD supervision is gradually improving as staff in the Humanities and Social Sciences are upgrading their academic credentials and benefitting from workshops on supervision.

Grant applications are on the rise at Gulu University especially in Humanities and Social Sciences. This will complement the activities under the BSU project.

Support to teaching practice in the Faculty of Education and Humanities has enabled the integration of innovative pedagogy in the training of teachers in the undergraduate and graduate programmes. This is further rolled out into the community.

Innovative pedagogies have been integrated into the Graduate curriculum. Implementation of Master of Education Planning, Management and Administration (EPMA) approved by National Council for Higher Education (NCHE) begins in 2017/2018 academic year.

Synergies with other collaborations as University of New South Wales supporting undergraduate teaching and learning; and SIDA building staff capacity in Masters and PhD research complement each other enhancing sustainability.

Gulu University staff are being trained in grants application writing to build their capacity to apply for competitive grants.

Through BSU support and other collaborations, local expertise is being realized. Qualified staff for research, teaching and outreach in the University are gradually increasing.

The University support to IRGS through research funds is provided for in the budget in spite of it being minimal.

6. Coordination, Learning, Partnership and Management of BSU III-support

The consortium for BSU III builds on longstanding relationships established during BSU I, BSU II, MAGAART project and through research cooperation in FFU projects in Uganda. The consortium comprises Gulu University and academic departments at Aalborg University (AAU), University of Copenhagen (UCPH), University of Southern Denmark (SDU) and Roskilde University (RUC) and is a continuation of the consortium in BSU II. Partners in BSU II have been maintained based on thematic areas, expertise and good working relations. Further selection criteria were based on expertise in research and teaching. UCPH and SDU as experts in legal pluralism and transitional justice, which are relevant to Northern Uganda post war situation; UCPH contributing through resource persons and research in the field of Anthropology; RUC contributing through resource and expertise in Gender and International Development, and Aalborg contributing in the areas of Pedagogy and IT (PBL and E-Learning). The north partner institutions have provided support to PhD supervision, teaching, research and mentorship. They continue to provide support in strengthening capacity at Gulu University in research and teaching through implementation of innovative pedagogical and study methods such as PBL, e-Learning and Action research at graduate level. Taken together, they have the expertise to contribute to both mandatory cross-cutting courses and elective thematic courses and the further consolidating of the master programme. Several of the north partners have experience doing research in post-war northern Uganda. Having departments as partners ensures commitment and support for the individual Danish researchers. The consortium will also ensure to engage and involve students from the Danish departments in the project through internships, projects and thesis writing. Aalborg University will coordinate the Danish partners.

It is the joint responsibility of Gulu University and Danish partners, under the leadership of the South University, to ensure a proper and goal-oriented management of the programme activities, including reporting procedures, financial management and accounting.

On the Gulu side, responsibility lies with the Steering Committee. It will be composed of the Deans of the Faculty of Education and Humanities, Business and Development Studies, the Directors of the Institute of Research and Graduate Studies, Institute of Peace and Strategic Studies and Planning and Development. From time to time the committee can co-opt members with specialized knowledge and skills. For continuity, Assoc. Prof. Charles Okumu will be the chairperson of the steering committee on appointment by the Vice Chancellor (Principal Investigator). The

steering Committee shall meet quarterly or when need arises. It is responsible for supervision and monitoring of the coordination team, ensuring that the objectives are being met in a timely manner, and reporting to the Vice Chancellor on a quarterly basis.

6.1 GULU UNIVERSITY BSU III COORDINATION

The day-to-day management of the project shall be undertaken by the Coordination Team. A new management structure is setup with a Coordinator assisted by two deputies. For continuity, the BSU II Deputy Coordinator will coordinate; assisted by former Work Package leaders.

Coordinator: Ms. Agatha Alidri,

Deputy Coordinator, Administration: Ms. Judith Awacorach

Deputy Coordinator, Technical: Mr. Geoffrey Tabo Olok

Project Accountant: Mr. Ojwiya Vincent Olango

The Coordination Team is responsible for communication, activities implementation, accounting, and reporting.

The Coordination Team, the Steering Committee, the project accountant and senior management will be trained to manage BSU III and other external grants. The purpose of the training is to ensure that all external projects are appropriately managed for the benefit of the university as a whole.

The Coordination Team, assisted by the Steering Committee, will organize a workshop to disseminate lessons learnt from BSU II and introduce the thematic areas in BSU III. This will ensure university understanding of the role of BSU in institutional and community development in line with the University motto: 'For Community Transformation'.

To manage the joint responsibility of the partners, an executive committee will be formalized comprising five members: two members from GU, including the project coordinator, and two members from DK, including the Danish coordinator; the committee will be chaired by the Chairperson Steering committee Gulu University. The executive committee will hold meetings every 3 months, either electronically or in person. The executive committee will appoint Teams of Work Package Leaders from both South and North to ensure coherence, content coverage and thematic depth.

6.2 DANISH BSU III COORDINATION

On the Danish side, the consortium will be hosted at Aalborg University (AAU). The lead Department will be Department of Communication and Psychology. The coordination of the Danish team will be handed over to Lone Dirckinck-Holmfeld, AAU. For continuity, Michael Whyte and Susan Whyte, the previous coordinators, will remain on the team. Lone Dirckinck-Holmfeld, as a former dean and research coordinator of previous DFC and EU-projects, has the capacity to coordinate this kind of complex partnership. The Danish group has organised itself in a steering committee with representatives from each partner university.

6.3 PARTNERSHIP

Gulu University will continue to collaborate with Maseno University e-campus in the area of ICT with specific emphasis on e-learning and management of Gulu Learning Management System (LMS), which was developed in collaboration with Maseno University. Maseno University e-campus will also continue to support the training of the academic and technical staff in content development, design for teaching and learning materials.

Other donors supporting GU will be consulted on an individual basis in order to learn from one another, avoid overlaps and explore synergies. Coordination happens in practice through the IRGS and the Office of Planning and Development. Where assistance is targeted toward the same area at GU (eg ICT or PhD stipends), coordination is ensured through the GU staff who are the most knowledgeable about needs, existing and planned support, and activities.

Budget for BSU III Activities, Gulu University - 2017-2021

Outcome Area	Immediate Objective	Main Output	Indicative Budget		
			Gulu DKK	DK DKK	Total DKK
1	Research and Teaching Infrastructure, Services and Facilities	Administrative frameworks, facilities and services for research strengthened by 2021.			
		1.1 IRGS functions with accessible electronic monitoring of Masters and PhD progress and Faculties, Institutes and Supervisors use the system by 2020.	72,000		72,000
		1.2 Plagiarism software is acquired and taken into use. Research outputs quality assured by 2020.	100,000	20,000	120,000
		1.3 By 2019 IRGS and the Library create repository of Masters and PhD thesis accessible to researchers and students.	70,000	50,000	120,000
		1.4 By 2021 a campus-wide learning platform (Moodle) is implemented and taken into use by management, staff and students. Staff and students have access to and are using relevant e-resources and regularly	600,000	75,000	675,000

		collaborating with external partners through ICT. A technical and IT-idactic support desk has been established.			
		1.5 Gulu University Research Agenda for the BSU III thematic areas reviewed and disseminated to the stakeholders by 2018.	51,000	40,000	91,000
		1.6. A Grant Desk to support development of grant proposals and applications is functioning by 2020.	50,000	40,000	90,000
		1.7 Gulu University staff administers and manage BSU and other external grants efficiently by 2018.	70,000		295,000
Sub Total outcome area 1			1,013,000	225,000	1,238,000
2	Collaborative research organization and post graduate teaching	By 2021 collaborative research and outreach capacity are improved by strengthening organisation and systems for postgraduate teaching and learning, building on and reinforcing on-going research. Courses and PhD projects will preferably be tied to a limited number of collaborative action research projects.			
		2.1 Mandatory cross-cutting and elective thematic PhD courses within the thematic areas (i. Transforming education and ii. Rights, resources	290,000	600,000	890,000

		and gender in post-war development) developed and taught by Gulu University staff and partners by 2020.			
		2.2 PBL principles and e-learning practices integrated into at least three graduate course units in different programmes by 2019. Blended learning will be encouraged so that a pilot of selected course units from Humanities and Social Sciences are delivered on the LMS as well as using PBL principles. Rolled out to at least five programmes by 2021.	580,000	600,000	1,180,000
		2.3 Two thematic research networks (i. Transforming education and ii. Rights, resources and gender in post-war development) established with external and other tertiary education institutions by 2020. Collaborative research, seminars, and conferences provide platform for establishing active networks. Regular public lectures/debates organized at the University and talk shows hosted on local radio stations.	580,000	600,000	1,180,000
		Sub Total outcome area 2	1,450,000	1,800,000	3,250,000

3

Collaborative research and outreach at the levels of individuals

<p>By 2021 collaborative research and outreach capacity within the thematic areas (i. Transforming education and ii. Rights, resources and gender in post-war development) are improved by strengthening research, postgraduate teaching and learning and networks at the level of individuals. This will be achieved through the triple helix (a network between University, private sector and Community) approach and action research on community needs identified through PBL. A limited number of collaborative and action research projects to be coordinated with existing PhD and masters projects.</p>			
<p>3.1 Communities, private sector and/or social actors are actively engaged in innovative projects and collaborative research on Rights, Resources and Gender. Practitioners (government, NGO, civil society) participate in Gulu University courses and dialogues by 2019; joint articles submitted for publication by 2020, active networks established with stakeholders by 2021.</p>	530,000	650,000	1,180,000
<p>3.2 Communities, private sector and/or social actors are actively engaged in innovative projects and collaborative research on Transforming Education. This research will examine the implementation of e-learning and PBL at Gulu University, and will also address transformation of education, teaching and learning in selected schools by 2021. Practitioners (government, NGO, civil society) participate in Gulu University courses and dialogues by 2019; joint articles submitted for</p>	550,000	650,000	1,200,000

	publication by 2020, active networks established with stakeholders by 2021			
	3.3 Each PhD student is affiliated with one of the thematic networks. Joint brown bag lunches are organized on a regular basis. PhDs are afforded opportunity to make at least two presentations of their research to peers within their disciplines and one conference by 2019. All scholars are called for to do presentations of draft research papers.	300,000	300,000	
	3.4 At least two competitive research grant proposals developed in response to calls and submitted within the thematic areas by 2019.	23,000	40,000	
	3.5 PhD projects on Rights, Resources and Gender completed by 2021	150,000	250,000	400,000
	3.6 PhD projects on Transforming Education completed by 2021.	150,000	250,000	400,000
	Sub Total outcome area 3	1,703,000	2,140,000	3,843,000
	Sub Total outcome areas 1, 2 and 3	4,166,000	4,165,000	8,331,000
	Coordination (GU) at 8% of total GU budget	333,280		333,280

	Overhead cost (DK) (max 20 % of total DK expenditure)		833,000	833,000
	Overhead cost and Bank charges (max 12 % of total GU expenditure)	499,920		499,920
Grand Total		4,999,200	4,998,000	9,997,200
	External Audit (Gulu)	80,000		

Annex A.

Background Information on Gulu University

Gulu University is one of the eight public universities in Uganda located in Laroo Division, Gulu Municipality in northern Uganda. It is about four kilometers from Gulu City Centre. The university was opened in 2002. The Government of the Republic of Uganda established Gulu University as a public university in northern Uganda by statutory instrument No. 31 of 2003 which was made on the 14th day of May 2003 to the Uganda Gazette No. 29 Vol. XCVI dated 25th June 2003. Gulu University, through its programmes, is set to make significant contributions to peace, stability, reconstruction and sustainable development.

Initially the University was named Gulu University of Agriculture and Environmental Science and was to specialize mainly in agricultural mechanization; however it was proposed that it should focus beyond agricultural mechanization with a mission to produce high-level human resources that can effectively participate in solving the social and economic problems of the country. It was then renamed Gulu University. The university started with one faculty and one institute namely Faculty of Science Education and Institute of Human Resource Development. Currently it has six faculties and two institutes namely: Faculty of Medicine, Faculty of Agriculture and Environment, Faculty of Science, Faculty of Education and Humanities, Faculty of Business and Development Studies, Faculty of Law, Institute of Peace and Strategic Studies and Institute of Research and Graduate Studies.

The University through its Mission, Vision and Goal is set to serve as a launch-pad for equitable development with emphasis on rural transformation and sustainable development.

1. The Vision of Gulu University is to be a leading institution for promotion of community transformation and industrialization for sustainable development.
2. Its Mission is to expand access to higher education, conduct applied research and provide quality professional training for the delivery of appropriate services directed towards social transformation and conservation of biodiversity.
3. The key Goals of the university are: human resources and development, research publication and consultancies, community outreach services, information and communication technology, library and information services, and prudent financial management.

Gulu University recognizes the importance of partnerships and networks at national and international levels to achieve greater impact in its contribution towards sustainable development and social transformation.

Annex C. Gulu University list of Academic Staff with PhDs

SN	Faculties/Institutes	No. of PhDs
1	Faculty of Business and Development Studies	03
2	Faculty of Medicine	12
3	Faculty of Education and Humanities	04
4	Faculty of Law	01
5	Faculty of Science	10
6	Faculty of Agriculture and Environment	11
7	Institute of Peace and Strategic Studies	04
	Grand total	45

Annex D. Gulu University Approved Budget 2016/2017

	YR I	YR II	YR III	YR IV	YR V	TOTAL
FACULTY						
Faculty of Business & Development Studies	60	56	55	-	-	171
Faculty of Science	20	11	12	-	-	43
Faculty of Agriculture and Environment	40	37	33	36	-	146
Faculty of Medicine	50	53	52	52	53	260
Faculty of Education and Humanities	70	73	66	-	-	209
Total	240	230	218	88	53	829
PRIVATELY SPONSORED STUDENTS						
FACULTY						

Faculty of Business & Development Studies	800	607	673	-	-	2080
Faculty of Science	118	69	82	0	0	269
Faculty of Agriculture and Environment	145	94	49	26	-	314
Faculty of Medicine	110	142	116	23	22	413
Faculty of Education and Humanities	323	346	272	-	-	941
Institute of Peace and Strategic Studies	20	8	-	-	-	28
Faculty of Law	60	-	15	15	-	90
Sub-Total	1576	1266	1207	64	22	4135
Grand Total for Gulu University Main Campus	1816	1496	1425	152	75	4964

**Gulu University Approved Budget
2016/2017-Kitgum Campus**

PROGRAMME	YR 1	YR11	YR 111	YRIV	YR V	TOTAL
Faculty of Business & Development Studies						
Bachelor of Business Administration	50	22	21	-	-	93
Bachelor of Public Administration	50	10	26	-	-	86
Sub-Total	100	32	47	-	-	179
Faculty of Education and Humanities						

Bachelor of Arts Education	50	20	24	-	-	94
Bachelor of Arts Education-Holiday Programme (Modular)	50	-	14	-	-	64
Sub-Total	100	20	38	-	-	158
Total	200	52	85	-	-	337
Overall Total	2,016	1,548	1510	152	75	5301

Annex E. SUMMARY OF APPROVED INCOME FOR FY 2016/17

Item	Approved Total Budget 2015/16	Actual July-Dec 2015	Approved Income FY 2016/17			Total for GOU, NTR and Donor
			GOU	NTR	Donor	
Gulu University	Total for GOU, NTR and Donor	GOU, NTR and Donor				
Wage	15,595,952,700	3,949,272,927	17,619,582,143	1,200,000,000	571,593,140	19,391,175,283
Non-Wage	10,037,461,054	4,691,684,372	4,145,715,223	5,697,032,400	2,210,271,392	12,053,019,015
Functional fees	2,594,847,000	434,814,300	0	2,503,922,000	-	2,503,922,000
Development	4,684,514,600	519,457,345	2,500,053,381	1,376,051,200	25,000,000	3,901,104,581
Employee's cost arrears	0	0	1,036,000,000	0	0	1,036,000,000
Total	32,912,775,354	9,595,228,944	25,301,350,747	10,777,005,600	2,806,864,532	38,885,220,879
Lira University College						
Wage	1,143,557,346	151,886,650	0	0	0	0
Non-Wage	1,373,516,330	353,598,708	0	0	0	0
Development	8,548,664,865	453,529,142	0	0	0	0
Functional fees	426,278,500	0	0	0	0	0

NTR Arrears 2014/15	150,000,000	0	0	0	0	0
Debtor	300,000,000	0	0	0	0	0
Total	11,942,017,041	959,014,500	0	0	0	0
Kitgum Campus						
Wage	112,056,000	0	152,319,605	50,078,000	0	202,397,605
Non-Wage	528,364,000	0	0	350,546,000	0	350,546,000
Functional fees	300,000,000	0	0	186,024,000	0	186,024,000
Development	180,140,000	0	0	100,156,000	0	100,156,000
	1,120,560,000	0	152,319,605	686,804,000	0	839,123,605
Grand total	45,975,352,395	10,554,243,444	25,453,670,352	11,463,809,600	2,806,864,532	39,724,344,484

Annex F. Collaborations

Gulu University

Gulu University plays a leading role in the provision of skilled human resources for national development in the areas of education, health, agriculture, technology, research and other services. The University is currently sponsoring staff for postgraduate studies, twelve (12) PhDs and twenty-five (25) Masters'. For this reason Gulu University has established collaboration with national and international partners to strengthen its capacity in research and institutional development.

Collaborations

Danish International Development Agency (DANIDA)

Under DANIDA support the University has benefitted over the years in a number of ways through supporting Research and PhD training of University staff and graduate students.

a. Building Stronger Universities (BSU)

BSU aims at strengthening research capacity at Gulu University through research based training at PhD and Master degree levels, research based education and research dissemination and communication.

b. Governing Transition in Northern Uganda: Trust and Land Project

The project goal is to enhance research capacity and inform policy through creation of knowledge about management of land disputes, trust and governance during post war transition. This project explores issues of trust and mistrust in governance patterns based in clanship, kinship and marriage. It examines the governance role of civil society actors and the ways they evoke trust and mistrust. It investigates the roles of government institutions and legislation in intensification and mediation of conflicts over common resources and land.

c. Post- Conflict Mobility: Challenges and Potentials for Primary Health Care (PHC) in Northern Uganda

Based on the experience of the Enhanced Research Capacity Project (ENRECA), PHC aimed to assist the rehabilitation of northern Uganda through community-based longitudinal health research and health capacity strengthening. The project objectives are to upgrade university staff capacity through post graduate education, training community and health workers on diagnosis of chronic patients and database availability of priority health problems in northern Uganda, publications and peer

reviewed articles, workshops with the district local governments , university and policymakers, and reports targeted at relief organizations and public management bodies.

Swedish International Development Agency (SIDA) Programme

SIDA is funding a four-year project for staff development in public universities in Uganda. SIDA has offered Gulu University twenty (20) slots for PhD training and five (05) Masters' scholarships. Beneficiaries are from all disciplines.

Enhancing Capacity for Agricultural Research in Gulu University (ECART)

This research capacity building project is meant for improving research in agriculture in Northern Uganda. The aim is to enable Gulu University to effectively contribute to food security improvement in northern Uganda through agricultural skills development and applied science. Gulu University responds to labour-market demands of Uganda.

Dissemination of New Agricultural Technologies in Africa (DONATA)

The goal is to improve livelihood and increase economic growth of resource poor farmers in northern Uganda. The project is currently limited to Gulu and Amuru districts. It focuses on orange fleshed sweet potatoes.

Strengthening University Capacity to Enhance Agribusiness Competitiveness in East and West Africa

This project has the goal of contributing to poverty reduction through Agri-entrepreneurship training with the aim to improve relevance of agricultural science teaching and outreach to the needs of agribusiness.

University Community engagement

Acholi Religious Leaders Peace Initiative (ALPI)

There have been engagements with ALPI through IPSS in the area of Transitional Justice and legal pluralism with support from BSU II project. The purpose is to discuss legal pluralism and traditional justice systems as a means of achieving transitional justice, reconciliation and peace in northern Uganda.

Cultural Institutional Leaders

IPSS has been having a series of workshops with this group from the greater north to discuss traditional mechanisms for conflict transformation, reconciliation and peace building in the community.

Justice, Law and Order Sector (JLOS)

IPSS has been engaging the Uganda police in community policing through workshops and seminars. It aimed at improving human rights and access to justice.

Annex G. Matrix of Achievements of BSU from 2011 to 2017

Time	Activity	Output	Outcome	Comment
2011	2 PhDs	1.Dissertation Submitted for examination 1. final stages	2 Publications	Nuwategeka Expedito
2012	PhD courses in Research concept and proposal development and Scholarly writing.	Writing of PhD concept and Proposal development by the grants beneficiaries		Increased number of PhD students
2013	Small research grants	Research reports completed	1publication 2Paper presentations at International Conference	
2016	Completion grants	8 awardees	1 publications and staff capacity to publish boosted.	PhD beneficiaries on track
	Study stays	3 awardees	2 publications in process	Staff capacity to publish boosted.
2016/2017	Short courses in Research related areas	13 courses(Philosophy of Science -02, Legal Pluralism & Transitional justice 04, Culture, Gender and Development-02, Anthropology of Education-02, Qualitative Research Methods-02	Enhanced capacity in research and PhD report writing. Strengthened PhD Education	Five Graduate cross-cutting have been developed out of the short courses and implementation starts academic year 2017/2018
2016	Development of Graduate cross-cutting courses	05 cross cutting courses developed by the Graduate school with support from north partner	Graduate cross cutting course developed	Implementation starts academic 2017/2018
2016	Procurement of bandwidth	Bandwidth increased to 7.5Mbps	Graduate research enhanced	Has been institutionalized.
2016/2017	Establishment of the Learning Management System (Moodle)	Gulu University LMS established and upgraded (www.elearning.gu.ac.ug)	Academic staff training workshops and Graduate courses hosted	Effective use of LMS starts in the academic year 2017/2018.

			on Gulu University LMS. Academic staff and graduate students use ICT infrastructure for research.	The LMS is being used by university faculties for teaching, training & meeting
2016-2018	Training of 01 PhD student in PBL	One PhD student enrolled in PBL at Aalborg University	Staff capacity developed in PBL pedagogy	Tabo Geoffrey is on progress
	Training academic staff in eLearning methodology	15 academic staff in eLearning methodology	Use of e-resources and LMS for graduate research and teaching	Staff capacity developed in PBL pedagogy. Staff are able to carry out new pedagogic approaches in PhD education and postgraduate research training
2016	Piloting PBL and e-learning approaches	Problem-based research and e-learning methodology and e-learning approaches was piloted with forty Seven (47) MBA students supervised by GU staff.	Problem-based research and e-learning methodology and e-learning approaches integrated in the Graduate courses	Implementation begins with EPMA in 2017/2018
2016	Training technical staff in handling e-learning resources	Three (03) technical staff have been trained in handling e-learning resources (data, hardware, software and procedure and now run the workshops on the Learning Management systems).	Library staff capacity built in handling e-resources	Training in information literacy skills, literature search and reference management for graduate students and staff has begun.
2016/2017	Development of Graduate Handbook	Gulu University Handbook	Improved supervision and enhanced PhD completion	Graduate hand book hard copies printed in 2017

2016/2017	Development of PBL based curriculum	Revised Master EPMA	Introduction of PBL and e-Learning	Implementation begins in the academic year 2017/2018
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Annex H. BSU III Danish Partner Institutions

Aalborg University

Department of Communication and Psychology

Professor, Lone Dirckinck-Holmfeld

Roskilde University

Department of Social Sciences and Business, Global Political Sociology

Professor, Preben Kaarsholm

University of Copenhagen

Department of Anthropology

Professor, Susan Reynolds Whyte; Associate professor emeritus, Michael A. Whyte

University of Southern Denmark

Department of Law

Associate professor and Head of Research Unit, Martin Mennecke

Annex I Table Showing the Role of Danish Partner

Institution	Role	Impact
Aalborg University	Mentorship, Graduate supervision, Pedagogy (PBL and e-Learning), teaching and Action research and development of cross-cutting course and Selection of grants beneficiaries.	Enriched supervision practices, PBL based curriculum for EPMA approved.
University of Copenhagen & University of Southern Denmark	Mentorship, Graduate Supervision, Graduate handbook development, Graduate cross cutting courses development, teaching and research and outreach in Legal Pluralism and Transitional Justice, Teaching Anthropology of Education and Selection of grants beneficiaries.	Graduate handbook developed, PhD completion rates enhanced, Cross -cutting course developed. Teaching Legal Pluralism and Transitional Justice in post war situations. Course development in Anthropology. Grants award
Roskilde University	Mentorship, Gender and Rights course development, teaching on PhD Research Report writing.	Teaching gender based courses. Writing quality research report enhanced.

Annex J. Illustration of Relationship between Concept Note Output and Partnership Proposal

Concept Note	Partnership Proposal
<p>Outcome area 1: University capacity is improved by strengthening administrative frameworks for University research.</p>	<p>Outcome area 1: Administrative frameworks, facilities and services for research strengthened by 2021.</p>
<p>Outcome area 2: University capacity is improved by strengthening organisation and systems for researcher education and research processes</p>	<p>Outcome area 1: Administrative frameworks, facilities and services for research strengthened by 2021.</p>
<p>Outcome area 3: University capacity is improved by strengthening research and outreach practices and networks</p>	<p>Outcome area 2. By 2021 collaborative research and outreach capacity are improved by strengthening organisation and systems for postgraduate teaching and learning, building on and reinforcing on-going research. Courses and PhD projects will preferably be tied to a limited number of collaborative action research projects.</p> <p>Outcome area 3. By 2021 collaborative research and outreach capacity within the thematic areas (i. <i>Transforming education and ii. Rights, resources and gender in post-war development</i>) are improved by strengthening research, postgraduate teaching and learning and networks at the level of individuals. This will be achieved through the triple helix (a network between University, private sector and Community) approach and action research on community needs identified through PBL. A limited number of collaborative and action research projects to be coordinated with existing PhD and masters projects.</p>

Annex K. Priorities for BSU III

Activity	Activity Timeline
Improving administrative frameworks for University research to strengthen University capacity.	2021
Establishing Administrative frameworks, facilities and services for research	2019
Establishment of research and teaching infrastructure, services and facilities	2020
Strengthening collaborative research through PBL and Action research in thematic areas	2020

ANNEX 5

Building Stronger Universities Phase III (BSU III) SUA_CDU Partnership Proposal

1. Rationale and main lessons learnt during BSU II

The Building Stronger University initiative (BSU) is unique as it fills the gaps in institutional capacities at universities in the South that no other initiatives have focused on. BSU II involved new thematic foci and a fresh round of matchmaking processes that brought together researchers from Danish University Consortia and from universities in the South.

The cooperation between Sokoine University of Agriculture (SUA) and a Consortium of Danish Universities (CDU) has progressed substantially. A top-down approach has deliberately been avoided and the direct collaboration between peers at the same level has ensured ownership and motivation from South and North. The number of institutions and the adjacent portfolio of individual competences on both the SUA and the Danish side have been well-balanced and effectively addressed the tasks. Development of two new PhD programs (in Agricultural Value Chains, Agroecology) and one Master's Program (in Aquaculture) with course portfolios is a major achievement. Curricula have been developed and are at different stages of approval by the university machinery and Tanzania Commission for Universities (TCU). Development of curricula involved consultations with various stakeholders including relevant industries. This process forged new university-industry linkages that potentially ensure sustainability of the PhD programs after BSU support is finalized due to their demand-driven nature. Further consolidation of BSU II activities will support the university's efforts to improve collaboration with private and public actors in Tanzania. Anchorage of these curricula in the relevant academic units at SUA ensures institutional ownership and sustainability.

Sixteen courses have been jointly designed, piloted and evaluated by SUA and Danish partners. This joint venture gave room to cross-fertilization of expertise in specific scientific areas. Capacity of SUA researchers involved in joint implementation of BSU II activities has been strengthened and SUA staff is now able to take on responsibility for implementation of these courses. Forty SUA staff members have participated in training sessions facilitated jointly by Danish and SUA resource persons and improved pedagogical skills which will be tested when courses are repeated. Deliberate efforts were made to ensure that at least 50% of participants in the different courses were female.

Organization of research is being consolidated through the on-going research group formation and development of joint research proposals. A number of activities such as training of ten SUA staff on how to establish, manage and sustain research groups within universities were implemented in collaboration

with the Danish Partners. The experience gained creates an enabling environment for collaborative research capacity building and research-based teaching: Research-based teaching as opposed to textbook facts teaching has been included in course development activities, and thirteen pilot projects will be finalized by the end of the BSUII project period. SUA staff has also established/subscribed to different national and regional networks as platforms for collaboration in specific research frontiers and information sharing.

Research infrastructure and management at SUA have been improved through the support of BSU II. Notably, the aquaculture laboratory was equipped with state-of-the-art equipment for fat analysis. Administrative procedures have been analyzed; the SUA management has endorsed the suggested changes and the Finance Department at SUA is being equipped with an electronic document management system (EDMS). Therefore, BSUII has prepared the ground for smooth implementation of activities geared toward institutional capacity building.

However, new partnerships take time to build and collaborative academic partnerships are no exception. Hence, within the BSUII time frame, the two-year period only allowed for the programs to be developed, individual courses to be piloted and SUA trainers to be trained. Other challenges faced – and the lessons learned from these – can be summarized as follows:

- Sufficient time is required for consultation with stakeholders, development of course contents and validation, processing curricula through university committees and the Tanzania Commission for Universities, and piloting of selected courses before enrollment of students.
- Continuity and sustainability of SUA's institutional capacity requires internalization of knowledge through staff training with much hands-on practice.
- Considerable effort has to be devoted to develop awareness among potential 'recruitment sources' for the new post-graduate programs, i.e. government ministries, NGOs, private sector companies and other universities.
- Procurement of materials and services is guided by general government and/or university procedures and regulations that must be adhered to. Following such procedures in some cases resulted in inevitable delays in the implementation of activities.
- Approval of new curricula at SUA is guided by university and TCU procedures and regulations that must be adhered to. The approval process involves several committees over which BSU II has no full control in terms of timing. Following such procedures in some cases resulted into inevitable delays in the launching of proposed programs. This challenge was partly mitigated by close follow up with the responsible offices and ensuring paperwork is fast tracked.
- Capacity building in specific scientific areas was skewed towards training rather than research and outreach. This skewedness limits academic outputs in terms of scientific results, publications and outreach. To maintain motivation of researchers involved in the implementation of BSU initiative, support needs to include collaborative research activities that will incorporate outreach and research-based training.

Despite the above challenges, the partnership has had a strong focus on strengthening SUA's capacity to deliver quality research and PhD education in certain scientific thematic areas (agricultural value chains, agro-ecology and aquaculture) and to improve University-wide administrative services and research facilities that support research and training. BSU II coordination has been efficiently managed through thematic area meetings, quarterly progress review meetings and joint partnership review meetings. Support from the Danish side has been sufficiently focused, the number of Danes and Danish institutes involved have been adequate and will not be expanded in the next phase. The Partnership is seeking continued support from Danida to consolidate achievements made in BSUII. The new strategic orientation is outlined in the next section.

2. Strategic direction and theory of change of a continued partnership in BSUIII

The previous selected thematic areas Agricultural Value Chains, Agro-Ecology, and Aquaculture, are all important areas in the further development of the agricultural sector in Tanzania in terms of value creation, enhanced livelihoods of rural communities, and environmental protection – while at the same time matching global trends in research and education. To ensure consolidation and sustainability of the results already achieved in BSUII, BSUIII will maintain its focus on specific topics within these three selected thematic areas and continue to prioritize an equal gender balance in student intake and researcher involvement. The ambition is to consolidate the educational programs on PhD and Master level that have been established in the previous phase and to implement concerted research and outreach activities that involve PhD candidates and younger researchers in their early career stages. In addition, BSUIII will continue to support the improvement of services and facilities that support research, notably 1) the improvement of administrative systems for monitoring the allocation, use and accounting of funds for research activities, and 2) the upgrading of laboratory and experimental facilities that are attached to the thematic areas.

The basic premise of the partnership's 'theory of change' is that this package of activities – consolidation of PhD programs and generic courses, collaborative pilot research integrated with new outreach and training practices, and improvements of crosscutting administrative procedures and experimental facilities – will lead to higher quality of academic training of PhD candidates and junior staff, and a stronger societal embeddedness of research. Incorporating outreach and training in research practices as planned will open new and hitherto unexplored avenues for a combined progression of all three components. Research activities will be conceptualized, designed, implemented and disseminated in innovative ways that will assist SUA to gain international reputation as one of the highest-ranked agricultural universities on the African continent.

The contribution of the partnership under BSUIII to capacity enhancement of SUA is obviously partial in the sense that efforts are focused within the three thematic areas. Nevertheless, what may have a

relatively limited impact on the general university level in the short to medium term will be counterbalanced by scope and depth at the three thematic area levels, and lessons of a detailed nature are easier to adapt and adopt by other scientific disciplines. Thus, the three thematic areas will serve as a breeding ground for best practices in PhD training, research capacity building and outreach. Efforts will be made to ensure that experience from the three thematic areas and the endeavors to explore synergies between them will be adopted across the university.

The purpose of maintaining the three thematic areas and to align them at outcome and output level (see section 3) is to enable a rigorous accumulation of experiences and systematic exchange of knowledge between them. This will increase the effect of the partnership while at the same time create a better basis for future cross- and multi-disciplinary research and outreach projects. It is necessary to adopt these multi-disciplinary approaches in addressing many of the complex challenges that society is facing. This will require new ways of organizing and implementing research as well as interaction with external stakeholders. These new forms of collaboration will also provide a changed institutional framework for delivering courses and supervising postgraduate students so as to renew and strengthen the linkage between teaching and research.

In more concrete terms, the new strategic direction of BSUIII is to consolidate the BSU II efforts through the following actions:

- Upgrade research administration procedures (primarily financial management systems), laboratory and experimental facilities that are required to implement state-of-the-art research within particular and carefully selected fields of the thematic areas. Newly installed systems (e.g. the document management system) will be made operational and possible bottlenecks or malfunctioning parts will be identified and amended. Based on an assessment of their conditions, relevant laboratories will be refurbished and local staff will be imparted with relevant skills. *In order to upgrade service facilities, allocations will support acquisition of selected hardware and training of human resources so that local staff is able to adapt and use new equipment and facilities.*
- Activate the research based teaching developed within the frameworks of the three postgraduate programs developed with support from BSUII including application of improved delivery methods. In addition, high interest on the eight generic courses developed and tested during BSU II indicates the need to incorporate the courses into other SUA curricula for ensuring sustainability. Strengthening of pedagogical aspects of the courses is envisaged to take place via more emphasis on training in supervision, publishing and teaching for PhD students, for instance by interacting with SUA's University Teaching and Learning Improvement Program (UTLIP). *In order to kick-start and popularize the research-based teaching, allocations will be used to continually develop both specialized and generic PhD courses and to mainstream the latter into SUA post-graduate curricula.*
- Develop the research capacity of SUA staff with special emphasis on junior scientists and their competence to undertake research and outreach. This will be carried out through the inauguration and strengthening of six relatively small research *teams* including the six SUA staff

members that are selected for the PhD studies, other junior staff members and more experienced North and South researchers. The research *teams* will implement innovative and strategically selected pilot projects that integrate research practices and dialogue with external stakeholders. Since the formation of more comprehensive research *groups* is at different stages in the various SUA departments, the smaller and focused BSUIII research *teams* are envisaged to constitute an important learning component for the future organization of research at SUA. Particular attention will be paid to a possible alignment of research topics within the research teams with the existing DANIDA programs in Tanzania, e.g. the activities of the Agricultural Market Development Trust. *In order to build the research teams – thereby stimulating research group formation – allocations will be used to ensure the participation of both junior and senior researchers from SUA and the Danish University Consortium.*

- Interact with external stakeholders by constructing effective communication channels to public authorities, private businesses and civil society organizations. The aim is to improve the transfer and exchange of knowledge from each of the three thematic areas that may have significant (potential or proven) social and economic impact. Furthermore, the aim is also to use the channels to identify knowledge gaps ‘in real life’ that may be translated into tangible research projects within the thematic areas, for instance by a systematic review and knowledge sharing of experiences from internship placements linked to the PhD programs. *In order to ensure effective channels for knowledge transfer and exchange, allocations will be used to identify mechanisms to strengthen existing stakeholder involvement before, under and after pilot project implementation and to construct new forums for interaction between all the involved parties.*

3. Objectives, Outcomes and Outputs for the Partnership in BSUIII

The overall objective of the collaborative program is to upgrade SUA to a university with worldwide reputation in providing scientific knowledge, research-based education and advice to society in major aspects of agriculture. From a long-term perspective, enhanced knowledge and competences to sustainably exploit natural resources is essential for the wellbeing of society and its citizens. Tanzania’s economy and people rely heavily on the agricultural sector, and society needs capable human resources to address and manage future challenges with due respect to the needs of future generations.

The BSUIII program outcomes and outputs are structured so as to follow the indicated outcome areas in Danida’s Concept Note for BSUIII. Seven key outputs have been defined. Implementation will be organized in work-packages that are thematic or addressing crosscutting service and infrastructure improvements. All outputs are in full accordance with SUA’s Five Year Corporate Strategic Plan 2016 – 2021 (<http://suanet.ac.tz/index.php/sua-corporate-strategic-plan-2016-2021>).

Concerning the first Danida outcome area (*capacity is improved by strengthening administrative frameworks for university research*) some outputs will materialize at university level and other outputs

at thematic area level. Firstly, the already started process of streamlining the administrative procedures for financial management of research funds will be completed and extended where necessary. This will allow researchers (including those operating within the three thematic areas) to better focus on scientific tasks instead of devoting time and intellectual resources on administrative matters. The CDU support is primarily in the form of human resource development through generic and specialized course that are offered to specific target groups in the administrative system. Secondly, the upgrading of selected and targeted laboratory and experimental facilities for use within the thematic areas will permit experimental research at international state-of-the-art level, while also training the technical staff on the use of advanced equipment. Danish BSUIII participants, both researchers and technical staff, will act as advisors to specific procurements and subsequent training in the thematic areas.

The second Danida outcome area (*capacity is improved by strengthening the organization and systems for offering research-based education and research processes*) is structured according to the three thematic areas: within all three thematic areas, university capacity is improved by strengthening the organization of researcher training and research processes. Based on the experience from the piloting of courses under BSUII, post-graduate programs will be consolidated and improved. Research teams will be established and centered on new staff-PhD positions with participation of junior and senior staff from the partnership. The CDU will continue to support the piloting and consolidation of PhD courses via active participation in the course development and implementation. Danish researchers will also participate in the research teams and resources are allocated to external PhD supervision.

The third Danida outcome area (*capacity is improved by strengthening research and outreach practices and networks*) is also structured according to the three thematic areas but some outputs will materialize at the university level. The research teams (see above) will implement pilot projects of strategic importance for capacity building of research practice; each pilot project will be conceptualized, carried out and reported in close collaboration with the involved stakeholders in order to ensure that the scope of the research conducted at SUA is determined by societal needs. The CDU will allocate funds for the active participation of the Danish researchers in planning and implementation of stakeholder workshops/conferences and short courses for external participants from civil society, the private sector and public authorities. Some of the research results will also be disseminated via existing channels at SUA to reach a wider audience while at the same time improving the efficiency and focus of the channels. This will lead to multi-pronged external outreach, strengthened cooperation and linkages with the private sector, civil society and public sector research users.

As a consequence, the activities of the partnership will operate on the basis of seven outputs as shown in the Table below. Intended activities under each of the outputs will include but are not restricted to the following:

- Output 1:* Planning and implementation of generic and specific courses for administrative staff, upgrading organization and systems for finance management
- Output 2:* Identification of gaps of laboratory and experimental facilities, prioritization of needed procurements, installment and calibration of instruments, training in operational skills and maintenance.
- Output 3:* Selection of PhD courses for consolidation through repeated implementation with Danish researcher participation, development of new core courses in the postgraduate programs, strengthening of pedagogical elements in existing courses.
- Output 4:* Selection of highly qualified SUA staff for PhD scholarships, identification of PhD research projects aligned with the interests of the respective research teams, nomination of internal and external supervisors, drafting of PhD study programs, data collection and analysis, planning of study stays in Denmark, paper and synopsis writing.
- Output 5:* Identification of research topics of mutual interest, selection of research team members, clarification of tasks and internal division of labour, planning of data collection and analysis including alignment with the PhD project, joint paper drafting and publishing, conference participation, new research proposals for external funding,
- Output 6:* Stakeholder interaction in different phases of research implementation, workshops and short courses for a broader audience.
- Output 7:* Input to general SUA channels for dissemination, adjustment and suggestion for replacement of inefficient mechanisms, extension of well-working communication tools.

S/N	DANIDA OUTCOME AREAS	PARTNERSHIP OUTCOMES	OUTPUTS
1	University capacity is improved by strengthening administrative frameworks for university research	1. Researchers are able to implement state of the art research and spend more time on core research activities and less time on financial and administrative tasks	1. Researchers, finance and administrative staff are trained in the effective use of updated business processes and new facilities for financial management 2. Laboratory and experimental facilities for specific and targeted purposes are installed; standard operating procedures are adopted and adhered to.
2	University capacity is improved by strengthening the organization and systems for offering research-based education and research processes.	2. SUA's capacity to implement research and research based teaching is improved by transforming research and training practices to foster strong linkage between research and training	3. The three Post-graduate programs started and research-based teaching is consolidated and expanded 4. Six SUA-staff complete their PhD in Agricultural Value Chains, Agro-ecology and Aquaculture 5. Research teams involving researchers and postgraduate students have successfully implemented strategic pilot projects and produced results that feed into new research projects, research proposals and research-based teaching
3	University capacity is improved by strengthening research and outreach practices and networks	3. There is an increased interaction and knowledge sharing with external stakeholders for contextualization of research and increased uptake of findings	6. Research teams have successfully identified and used new channels and mechanisms for outreach within and across the three thematic areas. 7. Existing channels for outreach (e.g. SUA based journals, TV and radio) and initiatives (e.g. ICE, SUGECO) are supported for increased access to outreach information and participation of stakeholders in events.

4. Risks

The following risks and mitigations have been identified:

- The bureaucratic decision making processes and the cumbersome procurement procedures may challenge timely implementation of planned activities. This risk will be mitigated by ensuring that activities are initiated well in advance and are closely aligned with the university calendar of meetings of decision-making organs. In particular, the procedures and decisions taken by the TCU will be closely monitored and quick follow-up actions initiated.
- Time constraint on the part of some project members due to other university commitments may also lead to some delay of project activities. Close monitoring of activities will enable action to be taken to allow replacement of a member who may not be available for a particular activity.
- Insufficient recruitment of candidates for the PhD-programs will make the implementation difficult to justify. Setting up a BSU-working group with the responsibility to promote the programs both internationally and domestically mitigates this risk.
- Lack of interest among researchers to participate in the research teams and joint collaboration/supervision of PhD students will reduce the effectiveness of the institutional capacity enhancing activities. A careful selection of themes of mutual interest for the SUA and the Danish researchers will minimize this risk.
- The selected SUA staff for the PhD scholarships needs to be highly qualified and motivated, and aligned with the research interests of the involved senior and junior researchers. A transparent selection procedure in accordance with internationally accepted criteria and involving researchers from both sides will ensure that the right candidates are identified.
- If the trained staff members leave SUA after finalized capacity enhancement (e.g. PhD graduation), institutional capacity is reduced. However, SUA regulations are already in place, ensuring a bond for 5 years after graduation.

5. Coordination, Learning, Partnership and Management of BSU-III-support

The strategic direction of BSU-III will be underpinned by concerted efforts to identify, learn and exploit possible synergies from relevant ongoing and previous research collaboration projects involving Danish¹

¹ Several projects have been implemented between partners from Danish Universities and SUA, including the following:

- ProGroV (Productivity and Growth of Organic Value chains) - focusing on organic production based on agro-ecological principles
- Prepare PhD – focusing on postgraduate training
- RUCROP/RUT – focusing on rural urban complementarity and development of emerging towns that depend on a particular agricultural value chains
- Prepare BSc. – focusing on pedagogy, curriculum development and Problem Based Learning (PBL)

and other foreign universities. BSU III will facilitate a series of events in accordance with the Directorate of Research and Postgraduate Studies to bring together representatives from all the major research collaboration projects at SUA that are supported by international partners. This will create room for possible synergies to be exploited and avoid duplication of interventions to the benefit of all international capacity building investments. Throughout BSUII it was endeavored to have university-wide workshops that reported about the BSU 'concept' and the thematic content of the program. This helped to create awareness of the BSUII program but could not cover all research, training and outreach programs, so through BSU III the Directorate of Research and Postgraduate studies will be engaged to play a more central role in creating this communication platform.

Results and insights gained during BSUIII will be up-scaled for improving the university's performance through the following mechanisms:

- The course delivery experiences gained in BSUII will be promoted to other staff members through practical implementation and workshops for sharing of experiences and developing skills.
- Experiences from the pilot projects, research group formation and management through team work will be imparted to SUA staff through training workshops facilitated jointly with Danish experts on more effective organization of research activities at SUA.
- In collaboration with the Institute of Continuing Education at SUA, long-term executive (re)training courses on cost-recovery basis will be developed and integrated into the university's ICE training system and aligned with the guidelines of the Directorate for Research and Post-graduate Studies.

BSU III will internalize and monitor the outreach activities, both those closely related to the pilot projects but also those of a more conventional nature implemented at university level. The coordinating unit under BSUIII will strengthen networking, partnerships and communication through various activities including the organization of training workshops for the thematic leaders, research teams and their associated colleagues. This may require participation of Danish counterparts but also SUA staff participation in international forums on education delivery systems, partnerships, communication and networking. These activities will assist the development of systems for communication, information handling and sharing across and beyond the university. In particular, this is planned to help in identifying and testing new areas and forms for South-South collaboration.

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- Peri-urban Livestock Farming – focusing on staff and postgraduate training
 - Development of enterprise for solar drying of fruit and vegetables – focusing on product and enterprise development
 - Growing Innovative Entrepreneurs (GIE) – focusing on adding value to SUA graduate to become job creators rather than job seekers.

Hence, BSUIII will aim to improve SUA membership and participation in activities related to the three thematic areas in regional bodies such as RUFORUM, FARA, etc. These fora bring several African universities together and thereby act as centers for mobilization of resources and South-South collaboration within the thematic areas. SUA will also strive to be close to global agricultural research center systems where world scientists meet and exchange new ideas and information. Students and researchers linked to the three thematic areas will be enriched by this information when it is shared to wider circles. The university will endeavor to become an effective connector between regional and global centers of excellence and local research and development partners. It is also important to continue collaboration with other Tanzanian research institutes with activities within the three thematic areas e.g. University of Dar es Salaam and Tanzania Fisheries Research Institute, for instance by invitations to participate in outreach activities and joint proposal writing. Collaboration is also envisaged to take place with the other Tanzanian universities participating in BSUIII to share and learn from their experiences.

Overall, the BSUII governance structure proved to be highly effective. Procedures for regular (quarterly) BSU-reporting to the SUA management have been established and it is planned to include the Director of Research and Postgraduate Studies as a member of the BSU Technical Committee in order to enhance the anchoring of BSUIII activities in the SUA management system. Some progress has already been made in this respect: the generic PhD courses developed under BSUII are now moved to SUA's post-graduate portfolio of courses, the PhD programs are embedded in the respective departments and the investments in infrastructure are integrated in the daily operations of the university.

The collaboration between the coordinators at SUA and the CDU has worked very well and the management of activities has been very efficient. The coordinators are in regular contact via e-mail and skype in order to ensure that the necessary adjustments and follow-up actions are taken. The technical committee at SUA has been instrumental in monitoring and evaluating implementation of activities and securing institutional support. On the Danish side, bi-annual meetings between the thematic area coordinators and the CDU coordinator have served to align efforts and exchange experiences gained. A reduction of the number of Danish university departments (reduced by two) participating in BSUIII will result in a leaner management and coordination structure. The more detailed coordination of activities at the level of thematic areas is taken care of by the thematic coordinators (pairwise with one from each of the partners) and with active involvement of the implementing participants. The presence of DFC follow-up administratively has made it much smoother to operate by reducing administrative duties to researchers. Therefore, no substantial changes are envisaged in the organizational set-up and management of the partnership.

6. Sustainability

The three academic thematic areas of BSUII are strongly anchored at the respective SUA departments and the finance management theme is also anchored in the finance department. This anchorage ensures institutional ownership of the curricula and the three postgraduate programs developed by BSU. The infrastructure procured and developed by BSU will be owned by the university and used for research, training and outreach activities by the other departments at the university. Arrangements are in place to mainstream generic courses developed by BSU to SUA's curricula and transfer the responsibility of running these courses to the Directorate of Research and Postgraduate Training. Some of the research groups constituted with support from BSUII are anchored at different departments and will potentially serve as instruments for ensuring proper supervision of PhD students. The identified linkages with the private sector through internship positions and stakeholder interaction will ensure support to the three postgraduate programs and acknowledgement of research activities. Furthermore, efforts will be made during BSUIII to encourage SUA departments to include support to research in their annual budgets. Finally, it is envisaged that the partnership between Danish and SUA researchers will continue beyond the lifespan of BSUIII as partners will identify areas of common interest for future research proposal and obtain external funding independently of DANIDA.

7. Framework Budget

Table 7: Summary of SUA-CDU partnership Budget by Output and partner

A. Outcome Areas																																																																																																																					
OUTCOME AREA	OUTPUT	SUA	CDU	SUA	DK	Total																																																																																																															
1. Research administration	output 1	246.460	440.000	667.672	610.000	1.277.672																																																																																																															
	output 2	421.212	170.000				2. Researcher education and research processes							i. Agricultural value chain	output 3	176.520	350.000	942.605	1.200.000	2.142.605	output 4	374.865	280.000	output 5	391.220	570.000	ii. Agro-ecology	output 3	156.520	440.000	962.600	1.310.000	2.252.605	output 4	364.860	280.000	output 5	441.220	590.000	iii. Aquaculture	output 3	198.340	360.000	981.895	1.240.000	2.182.605	output 4	372.165	280.000	output 5	411.390	600.000	3. Research and outreach practices	output 6	558.210	940.000	558.210	940.000	1.498.210	output 7	520.351		520.351		520.351	Subtotal		4.633.333	5.300.000,00	4.633.333	5.300.000	9.874.048	B. Project administration							Coordination/Anchor		370.667		370.667		370.667	OH		556.000	1.060.000	556.000	1.060.000	1.616.000	External Audit		100.000	140.000	100.000	140.000	240.000	Study stay in DK	DFC Costs	840.000		840.000		840.000	Subtotal		1.866.667	1.200.000	1.866.667	1.200.000	3.066.667	TOTAL		6.500.000
2. Researcher education and research processes																																																																																																																					
i. Agricultural value chain	output 3	176.520	350.000	942.605	1.200.000	2.142.605																																																																																																															
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3. Research and outreach practices	output 6	558.210	940.000	558.210	940.000	1.498.210																																																																																																															
	output 7	520.351		520.351		520.351																																																																																																															
Subtotal		4.633.333	5.300.000,00	4.633.333	5.300.000	9.874.048																																																																																																															
B. Project administration																																																																																																																					
Coordination/Anchor		370.667		370.667		370.667																																																																																																															
OH		556.000	1.060.000	556.000	1.060.000	1.616.000																																																																																																															
External Audit		100.000	140.000	100.000	140.000	240.000																																																																																																															
Study stay in DK	DFC Costs	840.000		840.000		840.000																																																																																																															
Subtotal		1.866.667	1.200.000	1.866.667	1.200.000	3.066.667																																																																																																															
TOTAL		6.500.000	6.500.000,00	6.500.000	6.500.000,00	13.000.000																																																																																																															

OUTPUT description

1. Updated business processes and facilities for financial management are in use by staff
2. State-of-the-art laboratory facilities for specific and targeted purposes are installed
3. Research-based teaching is consolidated and expanded
4. Six SUA staff complete their PhD in Agricultural Value Chains, Agro-ecology and Aquaculture

5. Research teams are established – each centered around research projects
6. New channels for outreach within the thematic areas strengthened
7. Existing channels for outreach are supported and their efficiency is increased

8. Annexes

Annex A: SUA Profile

The history of Sokoine University of Agriculture dates back to 1965 when it started as an Agricultural College offering diploma training in the discipline of agriculture, before becoming part of the University of Dar es Salaam (UDSM) in July 1970, as its Faculty of Agriculture. Later Faculty was re-named Faculty of Agriculture, Forestry and Veterinary Sciences after introduction of two more disciplines: Forestry and Veterinary Sciences. The Faculty was on the 1st of July 1984 transformed, through Parliamentary Act No. 6 of 1984, into a full-fledged University and became known as Sokoine University of Agriculture (SUA).

Currently SUA has four Colleges, one School and one Faculty namely; 1.Campus College of Agriculture, 2.Campus College of Social Sciences and Humanities, 3.College of Forestry wildlife and Tourism, 4.College of Veterinary and Medical Sciences, 5.School of Agricultural Economics and Business Studies, and 6.Faculty of Science.

Other academic units include; 1. Directorate of Research and Postgraduate Studies (DRPGS), 2.Directorate of Undergraduate Studies, 3.Directorate of Intellectual Property Management and Linkages, 4.Directorate of Consultancy and Services, 5.Institute of Continuing Education, 6.Centre for Information and Communications Technology, 7.SUA Pest Management Centre, and the 8.Sokoine National Agriculture Library.

The university is located in Morogoro Municipality. It has 3,350 hectares of land for training, research and production in Morogoro municipality; 840 hectares of forest land in Arusha; 320 hectares of virgin forest for research in Usambara Mountains in Tanga and 500 hectares of miombo woodlands in Kitulanghalo in Morogoro Region. The university has four campuses namely, the Main Campus and the Solomon Mahlangu Campus (SMC) both in Morogoro municipality; SUA Training Forest (SUATF) Olmotonyi in Arusha and Mazumbai Forestry Reserve in Tanga.

The mission of the university is “to promote development through training, research, extension, provision of services to the public and private sector in an environmentally friendly manner.”

SUA currently offers 35 programmes at Certificates, Diploma and Bachelor levels, and over 45 postgraduate degree programmes in various fields and professions.

The University has a total of 8544 student population of which 265 are postgraduates, 8279 are undergraduates including non-degrees programmes, this being an increase of about 20% since 2013. It has a total of 1485 employees (an increase of about 4% since 2013), 529 are academic members of staff of whom 58% are PhD holders and 835 are administrative staff of whom 36% are female.

With over 50 universities and university colleges in Tanzania SUA is the only university that offers degree programmes in the broad field of Agriculture.

Further information can be obtained from www.suanet.ac.tz

Annex B: Research Collaboration:

SUA's main research objective is to provide leadership in basic and applied research in order to generate scientific knowledge, technologies and innovations that respond to contemporary and emerging needs.

SUA thus emphasizes research that is linked to development and societal issues. Research, outreach and consultancy services are driven by trained agricultural and natural resource manpower base that comprises 529 academic staff, out whom 58% have PhD qualifications. Research capacity at SUA is further enhanced through collaborative research projects, which are supported by more than 50 memoranda of understanding. Currently, there are over 100 ongoing research projects in various fields. The memoranda of understanding have facilitated collaboration between SUA researchers and those from universities in other countries and international organizations, and have made SUA a fertile ground for intellectual stimulation due to the many collaborative activities going on.

SUA has benefitted from several institutional support initiatives supported by various donors. The most recent ones are: iAGRI; Prepare PhD and PREPARE- BSc.

a) iAGRI

iAGRI is a USAID-funded project that began in 2011 and will run up to February, 2017 for the purpose of building a sustainable food system through training, research, outreach and institutional transformation that encompasses private and public sectors. The main project partners are the Ministry of Agriculture and Sokoine University of Agriculture. The objectives of iAGRI are: i) Training: scholarships for 135 Tanzanian post-graduate students (115 at M.S. level, 20 at Ph.D. level), 50% female, 50% male. Also short-term training on technical and leadership topics; ii) Research: collaborative agricultural and nutrition research involving SUA, Ministry of Agriculture and Ohio State University Consortium scientists; and iii)

Organizational transformation: strengthen academic and administrative capacity of SUA to develop and implement agricultural and nutrition instruction, research, and outreach programs; and iv) External linkages: strengthening linkages between SUA, U.S. universities and Global South universities.

b) Promoting Excellence in Ph.D. Research Programmes in East Africa (PREPARE-PhD)
Partners

PREPARE-PhD project was a three-year (2008-2011) project funded by the European Union under the ACP-EU Cooperation Programme in Higher Education (EDULINK). The PREPARE-PhD project was a collaborative research project and the partner institutions included Faculty of Life Sciences, University of Copenhagen (Denmark), Sokoine University of Agriculture (Tanzania), Makerere University (Uganda) and University of Nairobi (Kenya). The overall objective of the project was to develop competent relevant high level human resources within agriculture, veterinary science, human nutrition, natural resource management and related fields to address socio-economic development needs of societies in East Africa. Specifically the project aimed at creating efficient and effective PhD training systems through strengthening local research capacity and regional networking in the participating higher education institutions. The main activities were updating rules and regulations for PhD programmes and harmonize them among the East African Universities, upgrading administrative system for smooth administration of PhD programmes and developing Ph.D. Student progress tracking system, training lecturers/professors on good supervision and examination, developing PhD courses on Proposal Writing and Research Methodology, Scientific Writing and Information Competence and Management, Statistics and Computer Applications in Research and Data analysis, training Ph.D. students on research proposal development and scientific writing skills and facilitating establishment of Ph.D. Student Associations.

c) Enhancing the Quality of Graduates of Agriculture to meet tomorrow's food security challenges
(PREPARE- BSC)

PREPARE-BSC project is a three-year (2014-2017) project funded by the European Union under the ACP-EU Cooperation Programme in Higher Education (EDULINK). The PREPARE-BSC project is a collaborative research project and the partner institutions include University of Nairobi (Kenya), Sokoine University of Agriculture (Tanzania), Makerere University (Uganda) and Faculty of Science, University of Copenhagen (Denmark). The overall objective is to enable the Universities to develop competent relevant high level human resources within agriculture, veterinary science and related fields to address food security as part of socio-economic development needs of the societies in Eastern Africa. The specific objective is to improve undergraduate programmes in the East African region in order to enhance graduate suitability for the job market. The main activities are assessment of attitude of secondary school students, teachers and parents towards agricultural career, assessment of university staff and students' perceptions on agricultural training, assessment of employers' attitude on agricultural training and graduates, reviewing curricula for undergraduate programmes using inputs from employers and pre-university students,

training of lecturers in didactics and pedagogy and student mentorship, establishing linkages between universities and industry players, and building interest of pre-university students on learning agriculture.

ANNEX 6

KILIMANJARO CHRISTIAN MEDICAL UNIVERSITY COLLEGE (KCMUCO) BSU-III PARTINERSHIP PROPOSAL

Revised Partnership Proposal Incorporating Comments from the Appraisal Team,

Aug 11th, 2017

1.0 RATIONALE, AND MAIN LESSONS LEARNT DURING BSUII

1.1 Reflections on BSUII

The main objective of BSUII was to ensure that KCMUCo is set to undertake relevant and evidence-based research with a strong emphasis on high quality knowledge generation, translation, dissemination and communication to the relevant key stakeholders, which include undergraduate and postgraduate candidates graduating from the College and the community at large. Significant progress towards this was achieved through strengthening of research and teaching processes. Activities were in line with and influenced KCMUCo policies and strategies. The implementation of key priority research themes led to work that enhanced both individual and institutional research capacity in cognizance with the national, regional and international priorities and trends.

The KCMUCo BSUII partnership encompasses a multitude of competencies at both the north and south collaborating Universities. The specific focus areas made it paramount that collaborators with relevant skills would partner. Special emphasis was made to ensure complementarity with existing national and international efforts between researchers at KCMC/KCMUCo and the researchers from the consortium of Danish Institutions. A number of these research links have existed for years and have been very productive scientifically and in production of much needed human resource for health (HRH).

The partnership achieved optimal operation through strategic planning. . The 10 Outputs in BSUII were led by dedicated Work-Package (WP) leaders. Regular Skype meetings, teleconferences as well as face-to-face meetings helped cement the high level of ambition. The high management support from KCMUCo/KCMC and the appointment of the BSUII PhD candidate from KCMC a testimony to the BSUII capacity building success at KCMUCo/KCMC.

The work programme was focused and well executed. The north and south work-package leaders were flexible enough to ensure successful implementation of planned activities in a cost effective manner. Experience from BSUII has led us to redefine the research areas for the BSUIII partnership program.

1.2 Rationale for bringing the partnership into the third phase

Research is an important element in both pre - and post-graduate education, and research training can only be provided in institutions with active research programs². The BSU contribution will be used

² Kilimanjaro Christian Medical University College is a constituent College of Tumaini University Makumira.

strategically to build institutional research capacity³. BSU-III aims to consolidate these efforts in broader and sustainable terms, based on successful implementation of BSUII. In BSUIII, new outreach activities will be implemented in an integrated manner across research themes. Specifically, BSUIII will enhance; capacity in research and grants management, enhanced research infrastructure and knowledge translation and research dissemination. Research capacity building through PhD/postdoc education focused will provide opportunities for learning and establishment of more research teams framework (spill-over effect) across different departments.

In this proposal, the partnership (through three themes) aims to enhance national, regional and international collaboration and outreach activities between north-south, south-south as well as inter-departmental links within the KCMUCo/KCMC institutions, resulting in enhanced education, patient care and research.

2.0 STRATEGIC CONSIDERATIONS, THEORY OF CHANGE AND NARRATIVE DESCRIPTION

2.1 Goal, Strategy and theory of change

In accordance with the theory of change (Figure 1) KCMUCo **impact level** is research (for which one indicator could be number and quality of publications – as measured by impact factor), teaching (possible indicator: number of graduates), and health provision (indicator: number and quality of services provided). The **outcome level** is the University capacity to support research, the research system, education and uptake of research results, which improve health provision. The KCMU research and teaching capacity can, with some reservations, be monitored by the international University ranking systems. The **activity level** include strengthening of the; Grants and Financial management, Stable internet access and e-health services, Ph.D/postdoc training, Lab oratory facilities (DNA sequencing), research policies and regulations.

The expected results in BSUIII will be achieved through careful implementation and monitoring of activities and results/outcomes. The pre-condition for success is sharper focus and consolidation of BSUII best practices.

³ Tangible research outputs are the results of a long series of different research activities and support undertakings, which all have to be in place to establish a functional research system.

	RESULTS	POTENTIAL INDICATORS		
IMPACT LEVEL	Societal impact of KCMUCo research increased	Research products and health solutions Graduates for health services Outreach		
OUTCOME LEVEL	University capacity improved within research and research education	University ranking Number of research graduates Number and quality of research papers		
OUTPUT LEVEL	<table border="1"> <tr> <td>Outputs from other University activities</td> <td>BSU outputs</td> </tr> </table>	Outputs from other University activities	BSU outputs	Outputs from BSU work packages 1 -5 measured by specific indicators
Outputs from other University activities	BSU outputs			
ACTIVITY LEVEL	<table border="1"> <tr> <td>Other University activities</td> <td>BSU</td> </tr> </table>	Other University activities	BSU	Activities from BSU work packages 1-5
Other University activities	BSU			

Figure 1: Outline of the project according to the theory of change. BSU activities (in yellow) results in outputs, which in combination with the outputs of other University activities (in blue) increase the capacity for research and research education. This increased capacity should impact on the society at large. The processes from activity to impact can be monitored by specific indicators.

2.2 Narrative project description

Taking stock of the KCMUCo/KCMC research system and activities within BSUII, the BSUII concept note and a realistic BSUIII budget frame, we have developed a comprehensive BSUIII proposal with activities targeted to result in outputs leading to outcomes that will contribute to the overall objective for research at KCMUCo in reflection of the national research agenda.

Considerable resources will be invested in *development of Ph.D education and postdoctoral placements*. We are doing this for two reasons. Firstly and foremost, training of young researchers is paramount for KCMUCo to recruit new scientific staff and for securing a vibrant research environment. Secondly, in the past BSU phases, the enrolment of Ph.D students at KCMUCo has expanded tremendously (from 13 to 30 students). The expansion creates a number of management, training and supervision challenges, which this proposal intends to address. Outreach is essential element of all research and research training, and the proposal specifically address the need to equip young researchers with outreach skills as part of their early research training.

Currently our Ph.D program and the administration of the program is not optimised to meet the above-mentioned demands. Thus, we will implement *changes in Ph.D program management, mentorship & supervision, development of advanced and specialized Ph.D courses and in the requirements for obtaining*

the Ph.D degree (number and quality of publications). We will also have activities to increase the number of new and qualified Ph.D supervisors. These activities will improve the quality of Ph.D candidates and research outputs. We will also increase the quality of the Ph.D program by promoting dissemination of research findings.

Resources will also be allocated to *infrastructure improvement in ICT services, research laboratories, and equipping of the Ph.D resource centre*. These facilities are paramount for teaching, learning and research activities. As a result of BSUII support in e-library and e-learning, the demand for bandwidth has increased significantly. BSUIII aims to enhance the bandwidth on the existing high speed fibre-optic cable, and develop policies and strategies for sustainable cost recovery. Initial funds from BSUIII are imperative until the cost recovery system is in place.

Other strategic investments include *upkeep and securing cost recovery for the genome sequencing facility* established with support from a FFU funded research grant and *establishment of a telemedicine unit, primarily for research, but also training and patient care*. Resources will be used to align research activities within the priority areas, support these activities and to support outreach activities and training in performing outreach.

We have re-analysed the priority areas for research and have acknowledged that some KCMUCo priority research areas are better supported by other programs (and non-Danish collaborators). Thus, the BSUII priority areas on Tuberculosis and Neglected Tropical Diseases are not part of BSUIII. The research areas being carried over from BSUII, are areas where the collaboration between KCMUCo and Danish researchers have been very active and productive during BSUII. During BSUII a collaborating link was established within HIV research. The KCMUCo activities on HIV research are still limited, but they hold promise and we will explore its expansion during BSUIII. BSUIII research areas will be:

- a) **Reproductive health** including obstetrics and gynaecology and linkage with pathology through telemedicine. Research capacity building and sustainability will be secured through the collaboration with University of Southern Denmark and the active collaboration with several Departments at Odense University Hospital on clinical care supported outside BSU.
- b) **Malaria**. This will build on the long, successful collaboration on research on malaria and other febrile illnesses between KCMUCo and University of Copenhagen as well as the collaboration with Danish Technical University based on establishment of a second generation sequencing facility at KCMUCo. Both these activities have been supported by FFU during the past 4 years.
- c) **HIV**. Though BSUII, collaborative links have been established between early/midterm career HIV researchers at KCMUCo and researchers at University of Copenhagen/ Copenhagen University Hospital. These links will be deepened.

The outcome areas of BSUIII for KCMUCo corresponds to the outcome areas in Danida's concept note. For management reasons, and to ensure the thematic anchoring of activities which again are paramount for keeping capacity development in research based education and research systems together with research and outreach practices, we will have 5 WP that relates to the 3 outcome areas of the concept note as described in Figure 2. WP1 will deal with strengthening of administrative processes and infrastructure, corresponding to heading 1 in the concept note. WP2 will deal with cross-cutting issues (issues not related to specific research themes) that falls within outcome area 2 and 3 of the concept

note, and WP3-5 contribute to outcome areas 2 and 3 related to reproductive health, malaria and HIV, respectively.

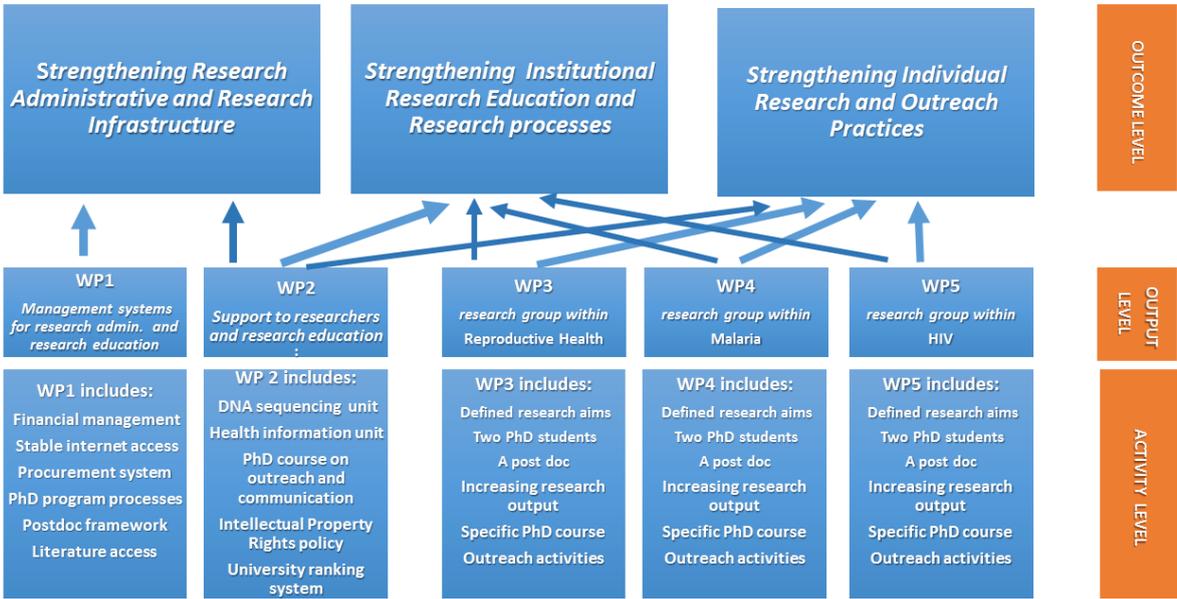


Figure 2: Organization of the programme. The programme will deliver outcomes to the three Danida headlines described in the concept note. Practically the work will be organized into 5 work packages, which will deliver outputs as indicated by the arrows (arrows size and color reflect relative contribution to the headlines).

WP1 represents a continuity of the approach of BSUII in the sense that the aim, the analytical frame for reaching the aim and method of program implementation remain largely unchanged. BSUII strengthened administrative processes in several ways and this will aid the implementation of BSUIII. Some of these processes are now self-reliant, others like e.g. financial support processes still needs some BSU support for full implementation.

BSUIII will support each thematic area through the formation of collaborative research teams involving senior researchers, early/midterm career researchers, PhD students and master students from both countries to promote peer to peer training. The proposal will fund research planning activities, pilot research activities, research outreach activities, research communication activities and research training. This will include PhD student training and training of early midterm career researchers including a time-bound postdoc position.

2.3 Outreach and policy implications of research

Innovations in healthcare aim at enhancing life expectancy, quality of life and cost effectiveness of healthcare systems. Our ability to create sustainable and efficient health systems depend on our capacity

to invent, deploy and scale-up solutions that are sensitive and appropriate for local communities. Essentially all research activities at KCMUCo involves outreach. The point of departure for nearly all studies are patients or study participants in the community. Some studies compare different treatment or disease control strategies (this can be at the hospital, at health dispensaries or community like mosquito control). These studies require that study participants understand the study and accept to participate (for reasons of research ethics and participant compliance). Obtaining such informed consent in a meaningful way involves considerable outreach activities at health facility and often also in communities (community acceptance is essential for community trials). The outcome of community trials is always communicated back to the communities. Trials are conducted to change treatment policies, but since policies are enacted under different circumstances, it is often important to conduct several trials before policy change can be decided. Policy change can be made at facility, district, regional, country or international level and processes involved in policy change are obviously based on the specific case. Thus, the mechanisms that the researcher should use to move research results into policy in terms of communication and advocacy cannot be put into a simple standard operational proceeding guideline. Here it is important that the researcher has a communication strategy and is able to communicate the findings in manners suitable for the audience.

Outreach can also be used in a narrower meaning, where researchers are guided by health providers or community members to define research questions and research strategies. Action research is an example of this. The choice of research method obviously depends on the research question and a research method does not carry any value in its own right. Action research has merit in certain situations and as such it is important that researchers are acquainted with the possibilities this method.

BSUIII will strengthen outreach and research communication in several ways. We will implement training in action research methodology, research translation and communication to under-privileged communities through PhD training, policy briefs, press releases, meetings with health providers and users of the health system to discuss research findings and research agenda. As part of WP2, we will include teaching of PhD students about the KCMUCo Intellectual Property Rights (IPR) policy, which was developed in BSUII. This will synergize with a series of KCMUCo arranged courses sponsored by the EU through World Intellectual Property organisation (WIPO).

2.4 Synergies and upscaling

BSUIII will build on the existing efforts. As detailed above this includes several FFU programmes; the Joint Malaria Programme (JMP) a collaboration including London School Hygiene and Tropical Medicine; activities with European and Developing Countries Clinical Trials Partnership (EDCTP). Malaria entomology research supported by Gates Foundation; Medical Education Partnership Initiative (MEPI) supported by US government and the European Union (EU-TBT program) support on Intellectual Property Rights (IPR) awareness.

Efforts to improve PhD education and administration, enhancement of ICT services and research laboratory will benefit students, researchers and other stakeholders. The infrastructure investments will benefit all students and researchers at KCMUCo.

3.0 OBJECTIVES, OUTCOMES AND OUTPUTS FOR THE PARTNERSHIP IN BSUIII

3.1 Immediate Objective

As a consequence of BSU III KCMUCo should have enhanced its role as provider of scientific knowledge and research-based education and advice to society. KCMUCo researchers should find that the essential research support systems are operating better than presently. Society, patients and students should experience that the research output within priority areas has improved in terms of quality and quantity. Society and researchers should experience that best practices have been improved with regard to outreach activities and alignment of research activities.

3.2 Outcomes

Outcomes and outputs are reached as a results of activities in the 5 work packages, which each relates to the three headings provided in the Danida application guideline as outlined in Figure 3.

- 1) *University capacity is improved by strengthening administrative frameworks for university research and research infrastructure:*

By 2021 Researchers and postgraduate students will have better opportunities for conducting high level research and engaging in high quality post graduate training because they have access to state of the art financial management systems, a simple purchasing system, stable and fast internet access, access to recent and relevant literature, and a PhD education system optimised to service PhD students and future PhD student throughout the process of obtaining the degree, and a post doc programme aligned with the policy of the national Commission for Science and Technology.

- 2) *For all KCMUCo researchers (across research themes) University capacity is improved by strengthening organisation and systems for researcher education and research processes*

By 2021, all KCMUCo researchers will have improved possibility of conducting high quality research because they have access to better research facilities, better research education and because the University have established a system to monitor its teaching and research performance relative to competing institutions. Giving the Institution the possibility to analyse and take action if the indicators not show a satisfactory development.

- 3) *University capacity is improved by strengthening research and outreach practices and networks within the priority areas:*

By 2021 KCMUCo will have established research groups within Reproductive Health, Malaria, and HIV, which can compete for international funding and be considered among the best at African Institutions.

3.3 Outputs

Outputs are described according to the work packages described in section 2 and illustrated in Figure 2. Outputs are numbered below and in the budget form as follows: first number (refers to outcome level),

second number (refers to WP number), letters (refers to defined output). E.G: 1(outcome level). 1 (WP in which the work is done), a (output text). The output codes are referred to in the budget

WP1:

Output 1.1,a-c: management systems strengthened. This includes

- a) That grants and financial management of research projects are operating and able to support individual research projects with real time data on expenditure on budget lines and projected expenses.
- b) That KCMUCo operates a cost recovery system which ensures end-users a reliable, stable and fast internet access.
- c) That the procurement system is flexible and efficient allowing timely delivery of research according to the nature of the obtained goods.

Output 2.1,a-c: management of research education strengthened. This includes:

- a) That administrative and academic processes with regard to PhD education have been optimised according to on-going analyses of administrative processes, PhD student satisfaction, ability to provide PhD supervisors and National PhD policies.
- b) An institutional postdoc framework in compliance with the National Commission for Science and Technology (COSTECH) guidelines.
- c) That relevant and recent literature accessible and are being used by staff and students at KCMUCo.

Indicative Activities:

- a) Implementation of the Pastel Evolution management system at KCMUCo, KCRI and KCMC. (By customization of Pastel according to user needs).
- b) KCMUCo bandwidth increased. Cost recovery system in place and operating. (by increasing connection speed to 70-100 Mbit/s with an annual percentage increase according to number of new users, by working out cost recovery mechanisms so as to recover bandwidth costs and hence foot the bill).
- c) A document analysing current procurement practices and requirements with special emphasis on procurement for research project inclusive of laboratory reagents and equipment. (By critical analysis of the "PPA Amendment Act 2016" and the "Principal Act", by conducting workshop with PMU unit, laboratory users at KCMUCo on best way to order and expedite supply of reagents for research).
- d) A document suggesting changes in current practices around PhD procedures. (By Letters of commitment, by a critical analysis of the findings from the Ph.D assessment that completed under BSU-II, by dialogue with key stakeholders).
- e) KCMUCo to spearhead a process of change on Ph.D training processes across Tanzania. The stakeholders include national regulators (COSTECH, TCU, NIMR) research and universities/Colleges offering Ph.D training in Tanzania.
- f) The current PhD holders at KCMUCo are mentored to compete for national (COSTECH), regional and international postdoctoral programs. The 3 BSU-3 Ph.D/Postdocs will be paired with a research leader/mentor from a Danish Institution to develop winning postdoc proposals.

- g) KCMUCo staff and students all have access to and actually use relevant e-databases.

Work package 2:

By 2021, Researchers across KCMUCo use DNA sequencing and telemedicine technology in their research; and are engaged in outreach activities. KCMUCo is monitoring its research and teaching performance inter alia through comparative rankings. This will enable the University have to monitor its teaching and research performance relative to competing institutions and provide the Institution with the possibility off responding to unsatisfactory developments.

Output 1.2, a-e: KCMUCo capacity to support researchers and research education strengthened

This includes:

- a) That all researchers at KCMUCo will have access to a unit for high through-put DNA sequencing;
- b) That researchers at KCMUCo will have access to a unit for health information technology;
- c) That all PhD students have participated in a course on outreach, action research and knowledge translation and dissemination/communication of research findings in a simple manner that is readily understandable by local/lay communities.
- d) That the Intellectual Property Rights (IPR) policy is operational. IPR awareness increased among postgraduate students and researchers. IPR modules are incorporated as part of foundation courses for sustainability.
- e) That the University is able to measure its research and teaching performance by establishment of systems allowing KCMUCo to be evaluated by international ranking systems. The ranking will have improved over the BSU3 period.

Indicative Activities:

- a) That the sequencing facility at KCMC Biotech Laboratory is maintained and operational. (by maintenance and optimization of equipment. Promoting knowledge about the unit, implementing user fees). A cross-cutting activity on research capacity building, research-based teaching as well as outreach with other research groups who needs the MiSeq level of services.
- b) An e-health unit established and operational. (a plan for this is available). Another cross-cutting activity across the 3 research themes. This shows greater linkage between BSU-2 and BSU-3. Enhance capacity building on research-based teaching as well as outreach activities between departments at KCMUCo/KCMC and inter-departmental outreach linkages at Odense Teaching hospital (pathology & reproductive health). Joint mentorship of MScs, Ph.Ds and Postdocs.
- c) KCMUCo PhD students are taught in outreach activities such as formulation of policy briefs and communication of research activities to the layman as part of the Ph.D mandatory foundation courses, embed in and offered the University for Sustainability.
- d) Entrepreneurship, IPR Sensitization and awareness increased. Compliance and conflict of interest declarations developed (by seminars).
- e) Ranking system identified and subscribed to. Ranking organisation receive relevant information. Ranking monitored, analysed and reflected on by management (as high level indicator for university performance).

Work package 3: Reproductive health

Work package 4: Malaria

Work package 5: HIV

WP3-5 outputs: 3.3,a-d; 3.4,a-d; 3.5,a-d

- a) Research groups are functional, which a defined research aims and ranked among the leading within their field in Africa.
- b) That senior researchers are being maintained with in KCMUCo by one postdoc taking a research leading position and that at least 50% of the Masters and Ph.D students mentored within the research groups are retained at KCMUCo as postdocs.
- c) Outreach secured in that health promotion activities in collaboration with key stakeholders in targeted communities implemented
- d) That research is aligned nationally and internationally by annual scientific symposia for students and researchers have been held.

WP3-5 outputs: 2.3,a-b; 2.4,a-b; 2.5,a-b

- a) That research activities are being institutionalised by graduation of 2 PhDs
- b) That the quality of PhD studies is increased by students received specialised skills within their research focus area through specialized/discipline specific PhD courses. Outreach is envisaged through joint development of the courses and allow access to PhD students from institutions offering Ph.D training in health within the region.

Indicative Activities for each area:

- a) Defined research strategy and work plan
- b) One PhD and one post doc identified, employed and mentored.
- c) Increasing research output
- d) Specific PhD courses
- e) Integrated Outreach activities

4.0 COORDINATION, LEARNING, PARTNERSHIP AND MANAGEMENT

4.1 KCMUCo

KCMC has introduced a new accounting and grant management system that enables the KCMC Management to obtain an overview of capacity and research activities at KCMC. This system serves as a tool to ensure an effective co-ordination of activities as the information will indicate where synergies can be obtained and overlaps avoided. During BSUI and BSUII linkages and collaboration between BSU and other capacity building projects as MCDC, THRIVE and MEPI has been established, resulting in joint activities as for example meetings and courses. Linkages and collaboration with research projects, as the 3 Danish funded FFU-projects at KCMC and the British funded PAMVERC, has also proved beneficial. In BSUIII the partnership intends to continue this collaboration by inviting relevant stakeholders to take part in meetings and other activities. An overview of projects and partners is listed in Annex B.

4.2 Outreach for lessons learned

Outcome 3 in the concept note for BSUIII underlines the need for strengthening research and outreach practices and networks. To ensure that lessons learned will be shared with relevant stakeholders a number of activities are planned within each of the prioritized research areas. Relevant researchers from KCMC and other universities, politicians, Ministry of Health, COSTECH, and representatives from the communities will be invited.

On research outputs, the scientific discoveries found in the PhD study on Pelvic floor disorders in BSU II will through translational research be transformed into ways to diagnosis and treat Pelvic floor disorders in the community. Cost-effectiveness of the scale up will be an important part of this research activity.

4.3 Management KCMUCo.

BSUII is led by Elton Kisanga, Director of Research & Consultancies at KCMUCo, and assisted by a Coordination Team (CT), work package leaders and persons responsible for respective outputs. This set-up has proven to secure a lean and effective administration of the programme as well as a smooth implementation of the proposed activities, and will be continued in BSUIII.

4.4 South-South cooperation

An assessment of PhD administrative practices was completed in BSUII in collaboration between four Tanzanian universities, among them KCMUCo. An evaluation of this ongoing in dialogue with Tanzanian Commission for Universities and other Tanzanian universities.

Laboratory activities, faculty exchange and courses, in collaboration with BSU Zanzibar and FFU-projects. Networking activities with Gulu on specific health activities and e-learning in BSUIII. Telemedicine (e-health activities) will be promoted as an outreach and research activities through involvement of other hospitals (north and south) with inter-department links.

5.0 Governance of partnership

BSUIII activities were led and monitored by the Coordination Team (CT). This team is led by *Elton Kisanga*, Director of Research & Consultancies, KCMUCo and assisted by: *Declare Mushi*, (both from KCMUCo), *Dorte Johansen*, and *Thor Theander*, (both from UCPH). The CT has scheduled quarterly meetings in person or by Skype, plus ad hoc meetings when possible.

Elton Kisanga and *Dorte Johansen* are responsible for budgets in Tanzania and Denmark, respectively. This set-up has worked well in BSUII and will be continued in BSUIII.

5.1 The Danish consortium.

The main partners in BSUII were University of Copenhagen and University of Southern Denmark, and other partners have been involved in specific activities. This set-up has proven effective and will be continued in BSUIII with a Danish co-ordination team consisting of Thor Theander, Vibeke Rasch and Dorte Holler Johansen. Other Danish partners in BSUIII include individuals from the Danish Technological University (DTU) and Danish Technological Institute (DTI).

6.0. ASSUMPTIONS, RISKS AND MITIGATING FACTORS

North collaborators and KCMC/KCMUCo staff have a clear interest in improving systems and have a generally positive response to BSU II. We hope expect the same spirit and commitment to continue in BSU-III

KCMUCo management will continue to ensure that BSU-III results are up-scaled when relevant. This is the expected result/outcome and not an assumption or a risk.

With regard to the Danish universities, the level of commitment and support during BSU-II and their continued availability in BSU-III is a clear testimony this programme will achieve intended outcomes smoothly.

The use of thematic foci to anchor programme activities makes the programme more attractive in the sense that Danish researchers can continue to align their own research agendas to the themes selected and assist their counterparts at KCMC/KCMUCo to strengthen their research processes. The consortium is composed of the collaborators from BSU-II, and we therefore expect minimal execution hiccups in BSU-III.

Assumptions:

- Careful planning will ensure that key North and South researchers are available for active participation in the collaboration and continue to have incentives for participation.

Risks:

- Timely approval by National regulators (TCU, COSTECH)
- Procurement improvements cannot be made in so far as there are national level regulations; that neither KCMUCo nor the north collaborators will be able to squeeze BSU recommendations in.
- Time constraints between north and south collaborators

Mitigating Factors:

- Engage agents of change
- Consultative meetings to highlight challenges and best way forward. Linking to scientific agendas/themes of importance
- Early planning and linking of activities with calendars in both institutions

6.1 Exit and sustainability of BSU3:

Sustainability building undertake a wide range of activities, many of which will be used in combination with each other. These activities often involve coordination with the KCMUCo management, other basic

and clinical science departments, human resource unit, infrastructure and planning, as well as working in partnership with other organisations (hospitals, donors, research groups, government).

Emphasis will be vested to improve outputs and their outcomes through continuous evaluation of both the process and outcomes including, reflection on what was more or less effective or successful – especially during the implementation stage – as a basis for adaptive management (amending and improving) of the program.

In summary, the following are important milestones:

- a) Human resource: Training of PhDs and postdocs and their retention, improvement of related remuneration packages
- b) Capacity building: Skills and competencies developed to strengthen our curricula, hence increase College's attractiveness as an institution of higher learning.
- c) Management support: Policies and guidelines endorsed and developed courses are offered by the College sustainably.
- d) Train more Masters, Ph.ds and Postdocs, increase the pool for postgraduate training and hence increase College's research and education capacity (mentor/supervise)

7.0 Framework Budget ⁴

⁴ Outputs are coded as in the text. E.G. output 1.1.a contributes to outcome 1; work is done in WP1; a defines to the text. Thus 1.1.a is 1 (outcome level). 1 (WP). a (text) ,

Outcome 1: Strengthening administrative and research infrastructure				
Outputs		South	North	Total
1.1,a-c	Management systems for research administration (WP1)	270,000	600,000	870,000
1.2a-e	Key research facilities and infrastructure (WP2)	1,558,000	1,241,000	2,799,000
Outcome 1 Sub-total		1,828,000	1,841,000	3,669,000
Outcome 2: Strengthening of Institutional Research Education and Research Processes				
Outputs		South	North	Total
2.1,a-c	Support to researchers and research education (WP1)	420,000	500,000	920,000
2.3,a	Strengthening research group (Rep. Health) (WP3)	472,500	433,333	905,833
2.4,a	Strengthening research group (Malaria) (WP4)	472,500	433,333	905,833
2.5,a	Strengthening research group (HIV) (WP5)	472,500	433,333	905,833
2.3,b	Courses and Research Output (WP3)	150,000	233,333	383,333
2.4,b	Courses and Research Output (WP4)	150,000	233,333	383,333
2.5,b	Courses and Research Output (WP5)	150,000	233,333	383,333
Outcome 2 Sub-total		2,287,500	2,499,998	4,787,498
Outcome 3: Strengthening Individual Research and Outreach Practices				
Outputs		South	North	Total
3.3,a-b	Research group WP3	216,667	216,667	433,334
3.4,a-b	Research group WP4	216,667	216,667	433,334
3.5,a-b	Research group WP5	216,667	216,667	433,334
3.3-5,c	Community Outreach (WP3, WP4, WP5)	150,000	200,001	350,001
3.3-5,d	Outreach Research Symposium (WP3, WP4, WP5)	450,000	200,001	650,001
Outcome 3 Sub-total		1,250,001	1,050,003	2,300,004
Outcome 1- 3 TOTAL		5,365,501	5,391,001	10,756,502
Coordinati	KCMC 8%	429,240	-	429,240
Overhead	KCMC 12%, UCPH 20%	643,860	1,078,200	1,722,060
External audit		60,000	30,000	90,000
GRAND TOTAL		6,498,601	6,499,201	12,997,802

ANNEX 7

Building Stronger Universities Phase III (BSU III) – SUZA

Version August 2, 2017

Partnership Proposal

Both sides of the partnership find the “mentorship approach” to research and capacity building applied during BSU II a rewarding and feasible model. This approach includes a continuous process where thematic teams of SUZA staff have been involved in the identification of research areas and research objectives related to environmental public health and environmental science. Defining research areas under BSU II involved close communication with external stakeholders in Zanzibar. During BSU II, collaborators from Denmark acted as discussion partners on technical aspects, research design and contributed with international experiences, which helped develop the research focus of the projects. An initial consultation phase resulted in the formulation of pilot research projects followed by the development of research protocols, formats for data collection, fieldwork, data analysis and the drafting of manuscripts and reports. Throughout the process, one or more researchers from Denmark were closely associated with the particular project teams working at SUZA. In addition to the core research project teams, a larger group of SUZA staff participated in training events thus allowing a large number of SUZA staff to benefit from the BSU II activities.

The launch of BSU II included a valuable consultation with key external stakeholders on identification and prioritisation of pilot research questions. Subsequently several stakeholder workshops, media reports etc. have communicated the results of the initial research findings. Also, the completed pilot research projects and the established baseline information have formed the basis for funding applications. There are still many unexplored opportunities in terms of creating new cultures and space for on-going mutual learning and collaborative solutions-seeking and follow-up, engaging public and private sector partners even more actively throughout the research process.

The starting point for BSU I continued in BSU II was to build upon existing strategies, infrastructure and resources at SUZA. An example of this has been the establishment of basic laboratory infrastructure based upon already purchased, but never mounted, laboratory

equipment, provided by previous international donations. The equipment installed under BSU II and necessary shelves, benches, water supply, storage etc. were fitted to create the foundation for a functioning laboratory. Furthermore, for the installed equipment, maintenance practices, standard operating procedures and good Laboratory practice have been introduced and future laboratory staff trained. By the end of BSU II, relatively advanced laboratory services are in place ready to service the future research projects and offer basic external services to government or private stakeholders. Another example of development of existing infrastructure has been the support to the library and document management system where teaching and research documents have been organized and registered into a searchable database resulting in increased access to research publications, learning materials at the library, complemented by BSU investments in hard copies of textbooks and increased access to online resources.

The curricular development and TCU accreditation of the first environmental health degree program on Zanzibar is one of the remarkable successes of BSU I and II. This is the result of a coordinated effort to train MSc and PhD candidates, as well as a close involvement of a large number of stakeholders in defining the required competencies of the students. This has helped focus the education of future graduates in areas with a great demand for employment. Important to the success of the new environmental health degree was the capacity building, including the development of e-learning modules, establishing e-resources, basic laboratory facilities, the introduction of new pedagogic approaches and the close collaboration between a large number of SUZA teachers and their partners in Denmark to develop 11 new tailored modules. The first students have graduated and are finding relevant job opportunities on the mainland and in Zanzibar. The environmental health program has become one of the most popular programs at SUZA. With the BSc program well established, a pool of graduates to select among and an increasing research activity in the field of environmental health, the way is paved for SUZA to proceed with the establishment of a Master level curriculum in environmental health.

The development of e-learning capacity and strategies at SUZA during BSU I and II have furthermore been successful and greatly appreciated among staff responsible for a large number of courses. The integration of SUZA produced material and not least, the quality assurance and integration of e-learning material produced from outside SUZA (Open Educational Resources) have developed beyond expectations with three times as many courses on a blended format and many more course instructors trained than expected. There is still room for further training to produce documentaries on local research findings for dissemination and to be used as open educational resources aimed at relevant students and other interested parties within and outside

SUZA. In addition, challenges remain for students to fully access online material given poor internet and a lack of access to devices among students.

The BSU II facilitation of project management training followed an approach where different administrative units from within SUZA discussed organisation and management of new specific external projects. This approach was greatly appreciated and highlighted the need for improved communication across the different branches of the SUZA administration. During the process, lack of human capacity, insufficient financial management systems and significant challenges in procurement, were identified. Likewise, the potential for improved coordination and communication across externally funded projects was identified as a means to increase the outputs and outcomes of the investments.

During BSU II a number of policies and guidelines, on research and publication, post graduate studies and on external consultancy services, have been drafted with the strong support from the top management at SUZA. The policies will be finally approved during 2017. Such policies setting standards across the institution will be very useful in the development of an expanded SUZA and will save significant administrative resources once fully implemented.

The BSU II partnership has shown its strengths as individuals involved from the very inception have found it useful to remain engaged. The involved researchers have invested a significant amount of unpaid time to the partnership and the partnership has been sufficiently flexible adjusting implementation plans as required.

1. Strategic direction of a continued partnership

The State University of Zanzibar has a mandate to provide educational and research services to public and private partners. In its strategic planning at SUZA environmental health and marine sciences are given high priority, these areas also playing an important role towards supporting the Archipelagos' socio-economic development activities within the framework of Zanzibar national economic growth strategy (MKUZA II).

In accordance, the two themes have been given much attention in the BSU partnership and the capacity at SUZA in terms of teaching and undertaking research within related subjects has expanded significantly because of the investments undertaken so far. It is the aim in BSU III to maintain this focus, engaging in new activities addressing pertinent research questions identified in even closer partnership with external stakeholders. BSU III will actively seek to create relevant

synergies between the two research areas i) environmental public health and ii) marine ecosystem health and services. In this way the focus during BSU I and II on environmental sciences will for BSU III be even further focused upon the marine ecosystem health and services.

The greatest potential for economic growth, employment and use of research and innovation on Zanzibar may well rest with the coastal communities, the relevant government authorities and the management of the tourist resorts located along the coastline. At the same time, some of the most significant risks to sustainable development and potential conflicts also rest with the same connections. Challenges and solutions linked to the tourism sector will be a joint and overarching concern for both themes pursued during BSU III.

Regarding gender integration, BSU III partnership will ensure gender balance and equity is given high priority on all levels and in all interventions, within the SUZA community and outside.

Marine and Coastal Ecosystem Health and Services (MaCES)

Sustainable management of marine and coastal resources is essential for the growth and employment in fisheries, tourism and the emerging businesses building upon aquaculture and the use of marine resources. These sectors are the pillars of the Zanzibar economy and the main foreign earners to Zanzibar. Over the past years, SUZA and partners have identified a clear need for continuous monitoring and exchange of data on e.g. marine water quality to support fisheries and especially aquaculture development and building a more sustainable tourism. Likewise, research is required to support the planning and monitoring of marine and coastal conservation initiatives. SUZA has a number of evolving partnerships with national and international donors, e.g. FAO and COSTECH, who are interested in using marine production systems for livelihood improvements. SUZA can become an important knowledge and research hub in this respect.

Environmental Public Health (EPH)

Zanzibar faces several significant environmental health challenges including poor solid waste management, poor sanitation, pressure on the water resources, insufficient food hygiene, and an increasing risk of urban and waste related mosquito borne diseases and frequent outbreaks of cholera. Based upon previous BSU activities, a review of past and ongoing research on Zanzibar and needs articulated by stakeholders, it has been proposed for BSU III to focus on the above mentioned environmental health problems in the context of coastal communities. This will

involve the close collaboration with government agencies and private sector partners particularly linked with the management of tourist resorts. Specifically, BSU III will focus its research on improving waste management, mosquito control and food safety.

A common geographical and institutional focus on particular coastal communities will facilitate data sharing, logistical and collaborative activities across the two BSU III focus areas (MaCES and EPH) addressing important research and developmental questions such as e.g. how the quality of seafood and other marine products may be influenced by hygiene management from the hotel. When SUZA engages in new researcher partnerships in the coming years to the co-location of activities in the same geographical areas will be explored to improve sharing of resources across projects.

The research and research capacity building within the areas of MaCES and EPH will be directly linked with the development of a Master curricular and supervisory capacity in the field of EPH and specific course development and supervisory capacity in the areas of MaCES.

During BSU III the outreach efforts will be focused upon the stakeholders related to the two thematic areas MaCES and EPH. Partners will be engaged throughout the research process rather than as an end of project communication strategy. Also, engaging the coastal communities and private sectors within the areas of research will be emphasized. This is needed to better assess the real life challenges and opportunities related to the introduction of new technologies or models e.g. as it relates to waste management.

BSU II supported SUZA the installation of already purchased equipment from others sources and purchase of furniture for the laboratory. Thus, currently SUZA labs have in place the capital equipment for lab operations. However, what is lacking are robust skills for of the lab staff on proper use, sustaining and maintaining these new equipment installed to fully support teaching and research activities at SUZA. Therefore, BSU III will improve capacity of SUZA laboratory scientists on instrumental operating skills and maintenance of working laboratory environments. BSU III will further provide a framework to assess the risks, opportunities and business case for SUZA to achieve its target of providing basic income generating services to private and government stakeholders.

Cross Cutting Issues (CCI)

During BSU II the development of e-learning capacity and strategies at SUZA enabled staff responsible for a large number of courses to effectively distribute teaching materials on the online course platform. Apart from the integration of e-learning material developed, students do not make good use of online material given poor internet and a lack of access to devices among students. BSU III will strategically work to improve the student access to increase the usability of the BSU II online materials developed. Likewise, the online course platform will be used to manage student assignments and BSU III will specifically support the integration, installation and training of academic staff on the use of plagiarism software to quality assure student assignments. In addition, ICT will strengthen its capacity to produce documentaries and educational resources based upon the studies related to the MaCES and EPH areas of research.

The support to the SUZA administrative framework and systems under BSU III will build on investments made under BSU II. During previous BSU phases, an emphasis was placed on the support to the formulation of SUZA policies. However, during BSU III the focus will be on support to the implementation and consolidation of the policies approved and no new policy formulation processes are expected.

During BSU II situational analysis of financial system to support research grants was undertaken and the results highlighted the type of system to be installed for improving financial practices. The recommended system will be installed within the BSU II while BSU III will focus on the capacity to coordinate activities and share information across external partnerships.

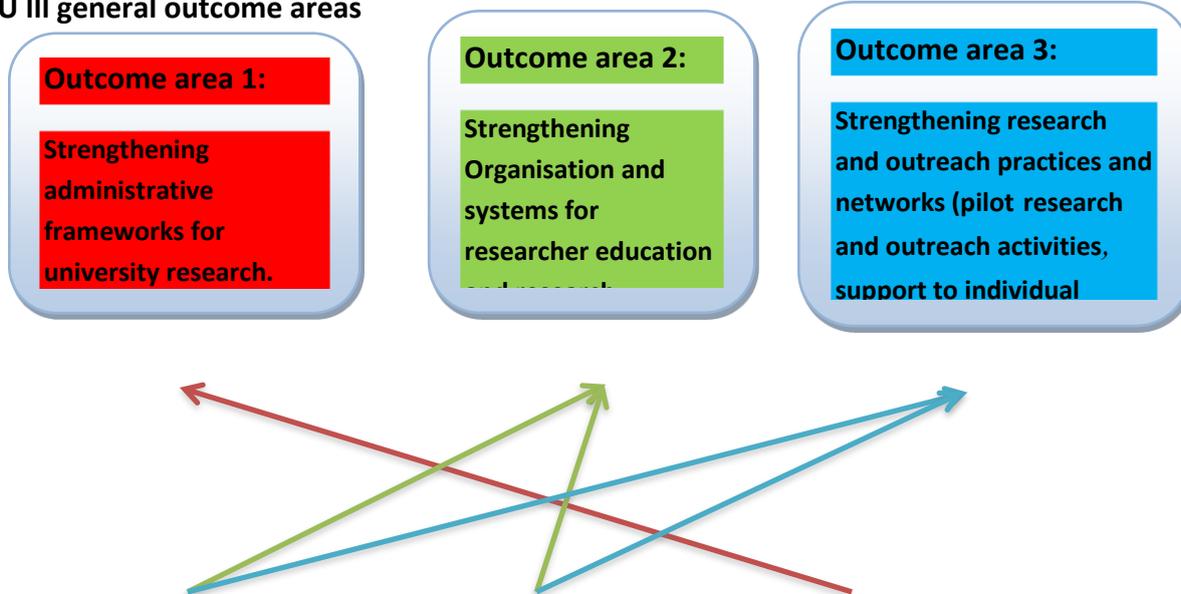
As three additional colleges and institutes were merged into SUZA January 2017, the library services and infrastructures need to expand to accommodate increased teaching and research demands. As previous phases of BSU have supported the SUZA library information management systems i.e. repository, BSU III focuses on critical element of IT support to ensure students remote access to online material and to support the infrastructure required to manage the increasing volume of e-books. Inter campus connectivity systems needed for the management of learning and research materials will, given BSU support, be in place end of 2021.

[Linkages between Outcomes and Work Packages](#)

BSU III SUZA will use a somewhat similar work package organisation as in BSU II maintaining the elements proving to be practical and helpful in terms of managing and reporting on the project. Two separate work packages (WPs) will again serve as the framework for the activities within the two thematic research areas namely 1) EPH and 2) MaCES. In addition WP1 will serve as common host for lab and outreach outputs while follow-up outputs to the former separate ICT WP will be

integrated respectively in WP1 and in a crosscutting WP3 including ICT equipment, library, financial management and strategy and outputs Linkages between the three BSU III SUZA work packages and the three outcome areas outlined in the BSU III Concept Note are illustrated in Figure 1 below.

BSU III general outcome areas



BSU II SUZA work packages

WP 1	WP 2	WP 3
Environmental Public Health 3.1.1 PhD in EPH 2.1.2. Master curriculum development 2.1.3 Pilot research projects and stakeholder engagement incl. staff exchange 2.1.4 Insectarium	Marine and Coastal Ecosystem Health and Services (MaCES) 3.2.1 PhD in MaCES 2.2.2 Systems and protocols 2.2.3 Pilot research projects, staff exchange and stakeholder engagement	Cross – Cutting Issues (CCI) 1.3.1. Improved access to Moodle 1.3.2. Plagiarism control 1.3.3. Library system 1.3.4. Financial management system 1.3.5. Strategies and synergies

2.1.5. EPH and MaCES Educational documentaries 2.1.6.Laboratory services		
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Re. the numbering: The first number in the rows indicates the BSU III outcome area (1-3...); the second the work package (1-3), the third the specific output (1-...). A fourth number may be added e.g. in the Gantt to distinguish between single activities (1-...)

3.1 Overall Objective and Process of Change

The overall objective of the BSU III partnership between the State University of Zanzibar (SUZA) and the Danish partners led by the University of Copenhagen (UCPH) is to contribute to the enhancement of the capacity at SUZA to effectively conduct and manage research, deliver relevant and high quality education, as well as engage in active public and private partnerships to maximize knowledge sharing and a culture of collaborative solutions-seeking for the myriads of problems facing key economic sectors. Activities involve tourism and marine and coastal sectors, where to we will provide relevant data to inform policy formulation and management practices in Zanzibar. By doing this we aim to improve public health and enhance the sustainable growth of the tourism sector. These are both part of the overall developmental targets outlined by Zanzibar development strategic action.

To achieve such impact, BSU III has given outreach and partnerships special attention. Through active engagement with stakeholders in defining problems and generating and sharing of new knowledge, we aim to support the community, government and the private sector. To strengthen impact we will concentrate on two main thematic areas i.e. Environmental Public Health (EPH), Marine, Coastal Ecosystem Health, and Services (MaCES). To support these thematic areas strategic investments will be made at SUZA to raise capability document management and sharing through the library, laboratory, ICT environment and the effective financial management practices for research grants.

The following section describes the major outcome areas and outputs of the project as prescribed under the DFC guidelines.

Work Package 1: Environmental Public Health (and common host for lab and outreach outputs)

Work package 1 outcome:

By 2021, the uptake of research by relevant stakeholders will result in improvement in solid waste management, vector control and food safety practices, EPH research teams are actively

involved in conducting research and disseminating findings in collaboration with relevant external stakeholders; full functioning lab for teaching and research in place, and a Masters curriculum on EPH is ready for submission to Tanzania Commission for Universities (TCU).

Output 3.1.1 One SUZA staff upgraded to PhD in EPH

During previous phases of BSU program, significant improvements have achieved within the ability of SUZA staff to conduct field and laboratory studies within environmental public health. BSU III intends to strengthen research competence at SUZA by upgrading one staff to PhD level thus increasing the number of research staff within the area of EPH. In addition, after the PhD training, the staff will have improved teaching capacity in terms of application of relevant research methodologies and teaching approaches hence ability to teach at postgraduate level and supervise graduate students thus contribute to the production of competent graduates. Research teams will be established and carry out research of direct relevance to societal needs in collaboration with relevant stakeholders. Likewise, in line with TCU's requirement, having PhD holders will pave the way for SUZA to establish Masters Program in EPH in future, which is considered a priority in Zanzibar.

Output 2.1.2: Curriculum for a Masters Program in EPH is developed, approved by the University authorities

BSU phase I supported the establishment of a highly successful Bachelor program in Environmental Health with courses tailored to the situation on Zanzibar and the East African region and with significant pedagogic innovations. The program is one of the two SUZA programs that attract the largest number of candidates each year. This trend coupled with the very high demand for environmental/public health professionals in Zanzibar and the region create a high demand for a Master's Program in this discipline. During BSU III, a full Master program will be developed and following approval by the SUZA (School Board, Academic Committee and Senate) as well as the TCU the first intake of 20 students is expected to take place 2022.

Output 2.1.3: Three pilot research projects successfully implemented with active stakeholders involvement in the areas of solid waste, vector control and food safety.

During BSU II, pilot research projects were completed on solid waste management, vector control and food safety. BSU III will develop and expand the existing research areas with special emphasis on improving solid waste management through reduction strategies, mosquitoes control and food safety, with full involvement of stakeholders from local communities, hotels, private as well as government enterprises. The implementation of pilot projects will strengthen SUZA capacity in designing and conducting EPH research that will expand and persist even beyond the BSU partnership. The research competence will enable SUZA staff to be able to successfully win for external grants and improve the basis for research based teaching.

The implementation of pilot projects will involve staff exchange between partner institutions throughout the research processes including proposal development, data analysis, write-up/publication and conference attendance and other means of research dissemination and communication. Staff exchange is considered a useful means for creating synergy and strengthening the partnership.

Relevant stakeholders have been identified in the previous phase and effective partnerships have been initiated. BSU III aims to consolidate the partnerships and engage new partners specific to the research areas. For example, in the area of solid waste management, a business model based on recycling waste generated from hotels will be established in partnership with local private recycling agents. Likewise, a model of environmental management for pest control approaches on resorts and surrounding coastal communities will be analyzed as part of sustainable tourist certification processes. Successful implementation of these activities will not only strengthen SUZA partnership with tourism industry but also will benefit the community at large through improving environmental sanitation, seafood quality and reduction of mosquito breeding.

Apart from engagement of stakeholders as part of research activities, they will be a case completion where students will be asked to address a particular problem (real life problem) put forward by external stakeholders in pedagogical way. Then students will be given number of days to work on it intensely to propose the solution and present it. Students will get the opportunity to interact and seek solutions with partners from various sectors practicing a combination of approaches and disciplines that matches the given challenges best.

[Output 2.1.4: An insectarium established and in use for conducting entomological research](#)

The findings from vector study in BSU II highlighted the need for further research on the ecology of vectors and nuisance mosquitoes in Zanzibar. This kind of research requires a well-functioning insectarium for rearing and identification of insects. At present, none exists at SUZA, which

necessitates the establishment of one, even of small scale, which will facilitate entomological studies expected to be conducted in BSU III and through the involvement of additional partners and donors. Such small facility will also attract entomological researchers from outside SUZA hence creating networks of researchers in this field. An insectarium will be formed by renovating an existing building to fit the required structure and function. This task will be done in collaboration with partner institution, notably KCMC, which has the expertise in this area.

Output 2.1.5: Four SUZA research projects and its key findings related to EPH and MaCES communicated as open educational resources aimed at university students at SUZA and students and interested individuals from outside the university

Only limited educational material in use at SUZA, and in the region in general, take a starting point in the problems faced locally. Also, the research activities, research findings and the local researchers get very limited publicity. To support the awareness of research undertaken by SUZA researcher and its partners addressing problems in the specific context of EPH and MaCES, the SUZA ICT unit will produce four documentaries profiling the research topics, the research process, methods applied and the research results achieved. The documentaries will be applicable for sharing on educational platforms such as MOODLE and online educational portal developed with an Africa focus and will be freely available as an open educational resource.

Output 2.1.6: Enhanced SUZA laboratory research, teaching and consultancy services in function

SUZA acquired a number of analytical instruments from various donors such as World Bank and Arab Bank for Economic Development in Africa (BADEA). BSU II enabled installation of the equipment and procurements and installment of much needed basic infrastructure. BSU III will strengthen the institutional capacity in lab management. This support will have impact on support sound scientific research and teaching for postgraduate level at SUZA. Furthermore, it will support research undertaken by academic staff in the area of EPH and MaCES. Lastly BSU III project will provide a framework to assess the risks, opportunities and business case for SUZA to achieve its target of providing basic income generating services to private and government stakeholders.

Work Package 2: Marine and Coastal Ecosystem Health and Services (MaCES)

Work package 2 outcome:

By 2021, SUZA will support marine related decision-making, policies and coastal economic activities (i.e. environmental authority, fisheries and tourism sector). To strengthen this support, continued pilot research projects, including monitoring and assessment of marine and coastal ecosystem health data will be gathered and made available to the relevant external stakeholders. The activities under this work package will contribute significantly to the already existing education and practical teaching in Masters Program in environmental sciences.

Output 3.2.1 One SUZA staff upgraded to PhD related to the MaCES.

During BSU II, SUZA managed to establish baseline and research and generated baseline information in areas in marine and coastal ecosystems. The team successfully conducted field and laboratory studies in close collaboration with Danish counterparts. BSU III aims at enhancing more expertise to SUZA staff on the area by upgrading one staff to a PhD level. This output will strengthen academic capacity for effective teaching, research and mentoring postgraduate students and young researchers in the areas related to MaCES. Furthermore, a PhD graduate will contribute in designing new research studies, supporting data analysis, organizing fieldwork and laboratory studies. The graduate will also lead facilitation processes of communication, networking between SUZA and external stakeholders, public and NGOs in particular. This will enhance SUZA capability on interaction and demonstration of research findings to research users and practitioners in the context MaCES promoting spillover affect within SUZA departments and to the stakeholder outside the University.

Output 2.2.2 By 2021, SUZA will perform consistent collection and analysis of key Marine and Coastal data that are regularly shared with relevant external stakeholders.

The ecosystems on Zanzibar is under pressure due to population increase, pressure on natural resources, rapid tourist developments, poor waste management and global climate change. Baseline studies in BSU II provided snapshots of the state of the marine and coastal environment providing important initial information but making it difficult to evaluate longer-term changes in support of policy formulation and decision-making. The BSU III approach will focus upon the establishment of continuous environmental assessment and monitoring system for a few critical

variables in the marine environment and undertake focused analysis of the impact on the marine environment from hotels. The data will also contribute to the coastal economic production sectors such as fisheries and aquaculture. The datasets will be presented and mainstreamed to the Environmental Authority, Fisheries department, community and Zanzibar Tourism investors.

Output 2.2.3 Three pilot research projects successfully implemented with active external stakeholder engagement in the areas of behavior and dynamics of pollutants and nutrients in coral reef waters.

BSU II supported the conduct and publishing of scientific articles on the environmental status of coral reefs and nutrients and pollutants levels in the marine environment. BSU III will expand the existing research areas with special emphasis on behavior of nutrients by using mathematical models to further investigate trends and effects of pollutants in marine ecosystems. These studies will strengthen SUZA capacity on analyzing the dynamics of coastal and marine ecosystems and their responses to different pressures. To optimize investments and ensure the theoretical basis and the practical implementation of the studies, longer exchange visits (~2 months) will be part of BSU III. The exchange will add special value in terms of knowledge and technology exchange between North and Southern partners.

Apart from engagement of stakeholders as part of research activities, there will be a case competition where students will be asked to address a particular real life problem put forward by external stakeholders. Then students will be given number of days to work on it intensely to propose the solution and present it. Students will get the opportunity to interact and seek solutions with partners from various sectors practicing a combination of approaches and disciplines that matches the given challenges best.

Work Package 3: Cross Cutting Issues (CCI)

Work package 3 outcome:

By 2021 SUZA has well established and functioning frameworks, systems and facilities in place in the areas of e-module access; assessment of research assignment plagiarism; library access to

research and learning materials; external research grant management; research strategies and coordination to support delivery of high quality services mainly in the areas of EPH and MaCES.

ICT

Output 1.3.1 Improved access among the students and staff to the established e-modules in SUZA MOODLE platform

BSU III will focus on improving student and staff access to the e-modules established during BSU II on the MOODLE platform. The results from baseline study conducted in BSU II revealed that over 50% of SUZA students own smart phones. This provides an opportunity to introduce these modules through mobile platforms and the aim is to introduce MOODLE mobile so that the developed e-module can be accessed to the student via smart phones. For those students who cannot access via smart phones, tablets will be purchased during BSU III so as to improve equity in accessing this service across students.

Output 1.3.2 By 2021 SUZA academic departments have functional plagiarism software in use to quality assess all research assignments by undergraduate and postgraduate students.

Currently, assessments of plagiarism of assignments submitted by undergraduate and master level students are done by the SUZA academic staff by reading the report and spot checking text that may seem suspicious. This takes a significant amount of time and is insufficient to detect all cases of plagiarism and quantify the level of plagiarism. Such lack of software and automated systems undermine the credibility of SUZA, influence the learning achieved by the students and likely influence employability of future candidates. BSU III will invest in a software license that will test for plagiarism assessment. The project will also train all academic staff and dedicated support staff in the center of graduate studies and research in the use of the software to assess all large student assignments and sustain it beyond the project period.

Library

Output 1.3.3 Functional SUZA Library system capable of sharing material across SUZA campuses and knowledge management system established

SUZA has recently expanded with campuses across Zanzibar and has doubled the number of students. BSU III will improve student's access to library materials across the campuses. In addition, BSU III will support the establishment of a system of storing e-research and educational materials. Each campus will have its own server and Virtual Private Network to facilitate storage

and remote access to this system. The library will also establish a mechanism of sharing knowledge (scientific publications, technical reports and thesis) in the areas of EPH and MaCES to specific institutions in Zanzibar including i.e. COSTECH⁵ and the office of the 2nd Vice President office. Such agencies have currently very limited access to research reports making it difficult to support policy formulation and evidence based decision making within Zanzibar Government.

Financial management

Output 1.3.4 By 2021, external research grants are managed effectively and to the overall satisfaction of researchers and grant source.

The University research administrative and grants management staff have been involved in research management training, and skills training in the previous BSU phases and initial investments have been made in terms of installing software. It has been decided to focus the activities during BSU III on the SUZA capacity to manage and report on external grants. The three members of financial department will be participating in knowledge exchange through different professional visits within the south region.

Strategy and synergy

Output 1.3.5 Coherent EPH and MaCES research and education strategies in place and use

In addition to strengthening of skills and capacities within EPH and MaCES research groups (outcomes 1 and 2), which includes improving coordination of activities on campus and in the field, BSU III will invest in the strengthening and alignment of SUZA's overall research, education and outreach strategies. Specifically these BSU III activities will include. (i) engaging in mutual learning process with other internal project stakeholders through review meetings; (ii) support synergies across different existing projects funded by different donors at SUZA through donors coordination meetings; (iii) initiate platform for feedback and experience sharing between various entities at SUZA and external stakeholders. Since the overall aim is to strengthen SUZA's general capacity to share and coordinate experiences and interventions among internal and external partners at some point various heads of all departments and management are assumed to become involved.

⁵ Tanzania Commission for Science and Technology

4. Risk and Mitigation Measures

The timing of the BSU III activity plan might be affected by the teaching sessions at SUZA and DK partner institutions since work package leaders and resource persons are regular university instructors. Thus, careful planning is required to avoid overlapping of tasks. Another challenge could be changes in the management at SUZA and/or at the Danish partner institutions that might entail the risk of losing key people who took part in the conceptualization and fully understands the project. Thorough briefing and other adequate support must be provided in case newcomers replace resource persons.

Bureaucratic procedures delaying procurement processes are also assumed as a potential risk. To reduce these constraints arrangements will be prepared to start the procurement timely. Also together with KCUMCo current procurement practices and requirements will be analyzed with special emphasis on procurement for research projects including laboratory reagents and equipment and possibilities of upgrading and/or introducing new practices while still abiding to national and institutional guidelines, will be considered.

To mitigate the risk that PhDs supported under BSU III could leave SUZA it should be noted the SUZA Training Policy requires that any staff who undergoes long term training (i.e. Master and PhD) has to remain for five years working in SUZA. This each staff needs to sign contract bond before attending the training for PhD. This contract assures that he/she will come back and serve the University.

In case there occurs a lack of match between SUZA's needs for assistance in capacity building and available local expertise mainly in the areas of laboratory and library likeminded institutions in the region will be consulted for advice.

Section 5: Coordination, Learning, Partnership and Management of BSUIII-support

Coordination with other partners and exchange of lessons learnt

Contact and consultation with stakeholders throughout BSU III will be a cornerstone and built into the work plans of the separate work packages and across the partnership. As explained throughout the proposal, sharing lessons learnt will not merely be a question of sharing findings

as activities are being completed, but will be an ongoing activity that will support a mutual learning process on various levels: Internally among relevant staff at SUZA, AU, and UCPH; with other partner universities; within the communities involved in pilot research activities; and with private and public sector partners and likeminded donors.

It will be a key priority to SUZA under BSU III to keep track of and cultivate linkages between activities related to capacity development and relevant research areas. This will include facilitating accessibility and exchange of relevant information among relevant partners including donors. Based on a mapping of national and international SUZA partners, as a part of BSU III SUZA will host meeting(s) for external stakeholders in Zanzibar supporting research and research capacity strengthening in particular within the focus areas of EPH and MaCEH.

Strengthening and alignment of grant management procedures and practices will be a separate area of priority.

Governance and Management

BSU III accomplishments are foreseen to constitute an overarching contribution to the achievement of strategic goals of SUZA as a catalyst of social change as it endeavors to support a more productive engagement with outside SUZA private and public institutions.

BSU III directly involves Department of Natural Sciences, Department of Social Sciences, Department of Environmental Health, Center for Tropical Research Center for Oceanography, Environment and Natural Resources, the Department of Computer Science and IT , the Directorate of Library Services, the Center for Digital Learning as well as the Library and the Finance and the Planning Departments. E.g. the library component is specifically going to benefit all campuses that have recently been merged with SUZA. Eventually experiences are shared with other parties in other departments' at various levels, incl. Heads of Departments and Management.

The BSU III SUZA partnership itself is headed by overall Anchors at SUZA and UCPH each assisted by a coordinator responsible for day-to-day communication and crosscutting project management.

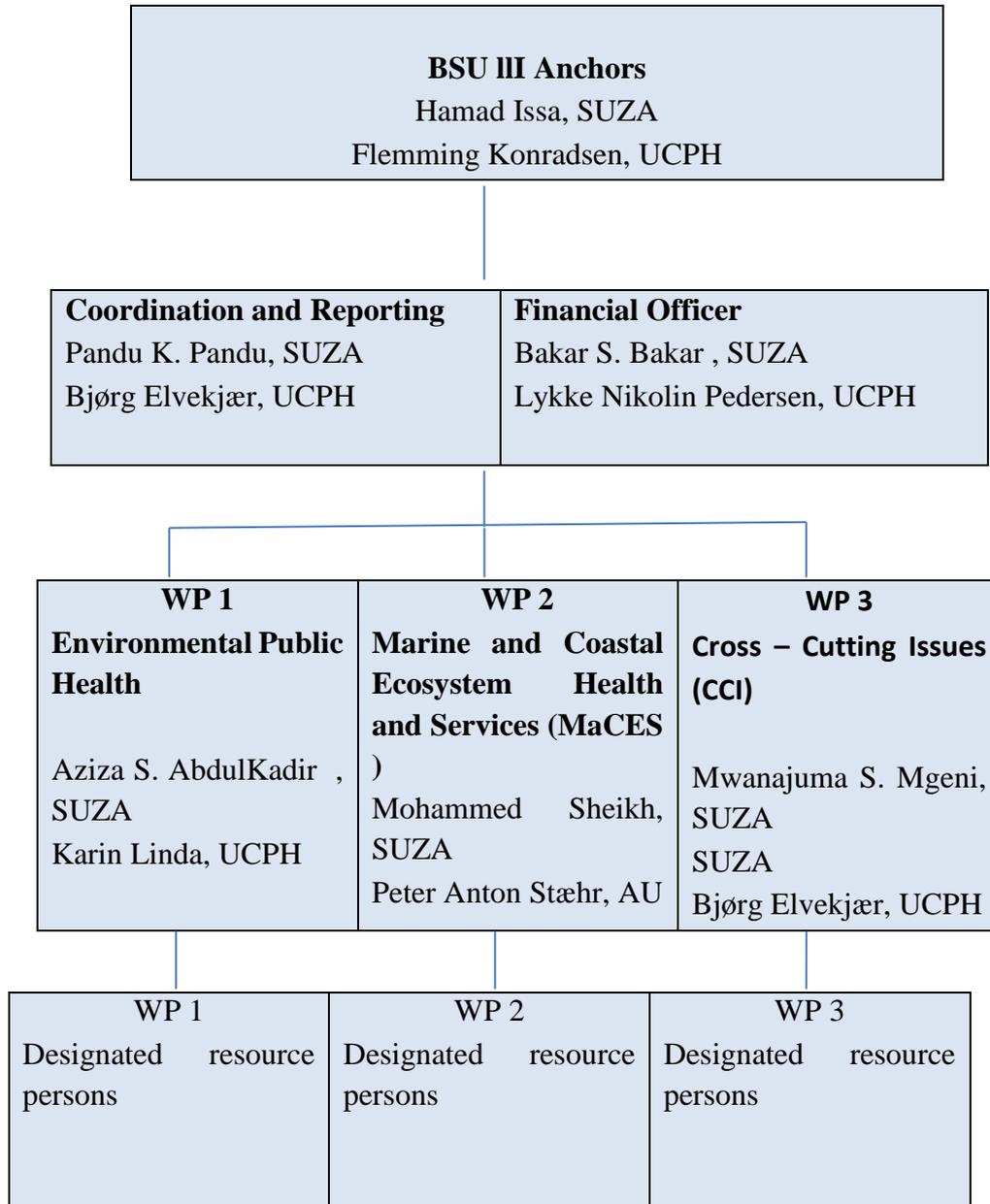
The BSU III SUZA partnership covers three work packages. A SUZA and DA leader who share the overall responsibility for carrying out, monitoring and reporting on the specific WP activities for ensuring that specified outcomes and outputs are achieved head them each. Their tasks also include, through consultation with the coordinators, drafting of terms of reference, and recruitment, briefing and debriefing of resource persons. Furthermore, it is assumed that the WP

leaders support the establishment and maintenance of synergies across the work packages. E.g. to the extent possible planning workshops, courses and other activities under each WP back-to-back allowing for sharing of resources, skills, and ideas across the WPs to strengthen synergies and coherence.

A mix of longer-term visits and regular shorter stays in Zanzibar and in Denmark respectively by DA staff with SUZA colleagues and SUZA staff at DAs institutions will be pursued to keep the momentum of the project.

To secure timely delivery of agreed inputs and services the partnership relies on committed team work between DA and SUZA key resource persons, while in accordance with DFC's general conditions for BSU III it is SUZA as the South partner who holds the overall and final responsibility for prioritizing, coordinating, reporting on and managing the partnership. It is the SUZA coordinator who acts as the primary entry point for communication with DFC. And it is the SUZA Coordinator who is responsible for compiling and sharing key reports, documents and documentation. The details of the organisation structure of BSU III project is found in diagram below:

BSU II SUZA ORGANISATION DIAGRAMME



Consolidation of names and roles will take place during finalization of Implementation Plans.

6. Sustainability Consideration

The SUZA-Danish partnership under BSU has been in place for more than five years and four more years to come so far. The motive behind such a partnership was to enhance the capacity of SUZA to be strong enough in teaching, conducting research and engaging with other stakeholders in the process of bringing wider developmental impact to the society.

BSU project has laid down the basic foundations to achieve such goals by supporting development of university wide framework for example for supporting curriculum development, research processes, graduate studies, library services, grant finance management, laboratory facilities, etc. SUZA has institutionalized these outputs and thus mainstreamed to regular ever ongoing functionalities of the University. The following are key areas for addressing sustainability of the project:-

- Integration of the research products from BSU projects baselines studies in teaching as case studies for undergraduate as well as graduate students.
- The research capacity enhanced as a result of baseline studies conducted will be used in newly established University research groups in other faculties.
- Policies have been mainstreamed within the University system and will be implemented base on the existing University's framework.
- The consultancy policy has laid down a platform for enhancing post BSU project collaboration between SUZA and other stakeholder.
- The availability of functional laboratory will provide basic lab services, which will open more opportunities to stakeholder collaboration.
- Baselines outputs will be used to apply for other external grants to support more flow of the resources to various faculties of the Universities. The SUZA environment promotes this culture as part of promotion criteria.

- The three PhDs to be are going to be part of the department staff, contributing to administration, teaching and consultancy at university.

1. Work Package Budget

	South	North	Total cost
			Total cost
Work Package: 1 EPH + Outreach + Lab			
Outputs	DKK	DKK	DKK
3.1.1 PhD in EPH	690.000	190.000	880.000
2.1.2. Master curriculum development	105.000	140.000	245.000
2.1.3 Pilot research projects and stakeholder engagement incl. staff exchange	1.070.210	1.589.500	2.659.710
2.1.4 Insectarium	170.700	50.000	220.700
2.1.5. EPH and MaCES Educational documentaries	135.000	380.000	515.000
2.1.6. Laboratory services	340.500	380.000	720.500
Sub Total	2.511.410	2.729.500	5.240.910
Work Package 2: MaCES			
Outputs			
3.2.1 PhD in MaCES	690.000	190.000	880.000
2.2.2 Systems and protocols	300.500	407.859	708.359
2.2.3 Pilot research projects, staff exchange and stakeholder engagement	1.070.250	1.371.650	2.441.900
Sub Total	2.060.750	1.969.509	4.030.259
Work Package 3: Cross-cutting			
Outputs			
1.3.1. Improved access to Moodle	340.000	140.000	480.000
1.3.2. Plagiarism control	69.500	50.000	119.500
1.3.3. Library system	240.300	45.000	285.300
1.3.4. Financial management system	27.800	140.000	167.800
1.3.5. Strategies and synergies	139.000	190.000	329.000

Sub Total	816.600	565.000	1.381.600
Total	5.388.760	5.264.009	10.652.769
Coordination	431.101		431.101
Overhead	646.651	1.052.802	1.699.453
External Audit	120.000	50.000	170.000
Total	6.586.512	6.366.809	12.953.323

2. Outcome Budget

	South	North	Total cost
Outcome 1: Administrative capacity			
Outputs	DKK	DKK	DKK
1.3.1. Improved access to Moodle	340.000	140.000	480.000
1.3.2. Plagiarism control	69.500	50.000	119.500
1.3.3. Library system	240.300	45.000	285.300
1.3.4. Financial management system	27.800	140.000	167.800
1.3.5. Strategies and synergies	139.000	190.000	329.000
Sub Total	816.600	565.000	1.381.600
Outcome 2: Research and outreach capacity at system/organizational level			
Outputs			
2.1.2. EPH Master curriculum development	105.000	140.000	245.000
2.2.2. MaCES Systems and protocols	300.500	407.859	708.359
2.2.3. MaCES Pilot research projects, staff exchange and outreach	1.070.250	1.371.650	2.441.900
2.1.3. EPH Pilot research projects and stakeholder engagement incl. staff exchange	1.070.210	1.589.500	2.659.710
2.1.4. Insectarium	170.700	50.000	220.700
2.1.5. EPH and MaCES Educational documentaries	135.000	380.000	515.000
2.1.6. Laboratory services	340.500	380.000	720.500
Sub Total	3.192.160	4.319.009	7.511.169
Outcome 3: Research and outreach capacity at individual level			
Outputs			
3.1.1. EPH PhD	690.000	190.000	880.000
3.2.1. MaCES PhD	690.000	190.000	880.000
Sub Total	1.380.000	380.000	1.760.000
Total	5.388.760	5.264.009	10.652.769
Coordination, 8%	431.101		431.101
Overhead, (South 12% & North 20%)	646.651	1.052.802	1.699.453
External Audit	120.000	50.000	170.000
Total	6.586.512	6.366.811	12.953.323

Appendix I

The State University of Zanzibar (SUZA) is the only public University in Zanzibar. The University was established by Act No. 8 of 1999 of the House of Representatives of Zanzibar and became operational on 26th September 2001. The headquarters is located at Tunguu about 14 km from Zanzibar Town, others are Vuga campus at Vuga Road, Mnazimmoja in the heart of the Stone Town in Unguja Island and the Nkrumah Campus is at Beit-el Ras, Maruhubi Campus, Mbweni Campus, Chwaka Campus and Mchangamdogo Campus at Pemba Island.

Currently, SUZA has five (6) operational schools and one (1) institute in different locations across Unguja and Pemba islands. SUZA is expected to have more schools as described in the strategic plan of the university. The existing schools and Institutes are as follows:- School of Education (SoE), School of Natural and Social Sciences (SNSS), School of Kiswahili and Foreign Languages (SKFL), School of Continuing and Professional Education (SCOPE), School of Health and Medical Sciences (SHMS), School of Business (SoB) and Institute of Tourism Development (ITD). In addition of Schools, there are four centres namely: Centre for Graduate Studies and Research (CGSR), Global Centre for Kiswahili Studies and Advancement (GCKSA), Tropical Research Directorate for Oceanography, Environment and Natural Resources (TROCEN) and Centre for Digital Learning (CDL)

SUZA in total has about 5,000 students and 500 staff including 290 teaching staff. The sharp rise of the students and staff (from 280 staff and 2700 students) is the result of the recent merging of SoB, SHMS and ITD. The total university annual budget is about US \$ 6,000,00. The figure is expected to increase for 80% in the coming financial year. The Government of Zanzibar contributes a total of 40% of SUZA budget share and 45% comes from the internal source of revenue such as fees collections, consultancy and other university revenue, while the remaining percentage is contributed by development partners (DP) in contributing a specific projects or programs. The keys development partners are World Bank (WB), DANIDA, NORAD, UNICEF, Millele Foundation, Huawei Company, JICA and Government of China which plan to build two buildings for SoE at Tunguu Campus and SKFL at Nkrumah Campus.

Contacts

The State University of Zanzibar

P.O.BOX 146

Tunguu, Zanzibar South

Telephone: +2(55) 123-4567

Email: vc@suza.ac.tz

Website: www.suza.ac.tz

Appendix II

The State University of Zanzibar (SUZA) is actively and strategically engaged with international universities to collaboratively broaden and deepen its impact throughout the world through collaborative research and professional learning. For example,

- **TRANSLED (Transformation, Language, Education and Development) Project** ; The project is implemented by SUZA, University of Dar es Salaam – Tanzania and University of Oslo (UiO). The project started 2014- 2018 under the sponsorship of NORAD through the NORHED projects. The value of project is 18 million Norwegian Kroner , SUZA is a lead partner. Project website is: <http://www.suza.ac.tz/transled-web/> .
- **SUZA OTAGO Project**; SUZA through the School of Education (SoE) at SUZA has been collaborating with the Higher Education Development Centre (HEDC) at the University of Otago, New Zealand. The research interest of this area are; Technological trends in higher education, Flipped classroom and blended learning technologies and modalities, Social network analytics . Ongoing research activities is available at <http://hedc.otago.ac.nz/forms/form/rctCAdl9MH>
- Woods Hole Oceanographic Institution (WHOI) and SUZA signed agreement of construction of Hatchery costing USD 60,000. The hatchery aimed to supply fish

breeding to local farmers. The agreement also involves conducting of joints research on production of fish bleedings.

- Vulnerability, Resilience , Rights and Responsibilities Project (V3 Pwani Project). The project is implemented by SUZA, University of Dar es Salaam and Norwegian University of Life Science (UMB) from Norway under NORHED Projects sponsored by NORAD. The project aiming building capacity on climatic changes in relation tom coastal resources , gender governance in coastal Tanzania and Zanzibar .
- SUZA and Leibniz – Institute – Bip GMPH from Germany are jointly conduct research project on Analysis of Diet and non-communicable diseases in Zanzibar. The two institutions are also looking more research collaboration.
- Other institution with academic collaboration with SUZA are, International Law and Policy (ILIP) from Olso – Norway, ONDOKUZ MAYIS University from Turkey and Mianyang University from China.

Annex 8

BUILDING STRONGER UNIVERSITIES PROJECT PHASE THREE (BSUIII) KNUST-DANISH CONSORTIUM PARTNERSHIP PROPOSAL

I. Rationale, and main lessons learnt during BSUII

Main Achievements and Lessons Learned in BSUII

The Kwame Nkrumah of University of Science and Technology (KNUST) is made up of six constituent academic Colleges, and requires research capacity building across its colleges in order to fulfill its role in national development. The BSUII initiative has contributed to developing research capacity at KNUST in line with the university's key research and teaching mandate⁶. Within the three thematic areas, namely Climate-Smart Agriculture and Environmental Management (WP1), Entrepreneurship and Job Creation (WP2) and Health Delivery Systems (WP3), short courses, methods-oriented workshops, engagement with industry and mentored pilot projects have provided the opportunity for a number of young researchers in the Colleges involved⁷, to hone their research skills.

Under BSUII, over 80 KNUST staff have directly benefited from research capacity building activities facilitated by both south and north partners. The knowledge acquired is evident in the ability of the participating staff members to undertake pilot research projects, develop research proposals for external funding as well as the writing of manuscripts for publications. A typical example is the publication of an article on the locally fabricated cookstove pilot project in the MDPI Energies Journal. A total of 7 (3 from WP1 and 4 from WP 3) research proposals were also jointly developed and submitted to the Danish Ministry of Foreign Affairs for research grants (FFU) by the BSUII pilot study teams in all WPs out of which 1 (WP3) has been accepted for phase two.

A coherent and mentored learning approach has sought to ensure that researchers apply the theories and methods gained to tangible research problems (as opposed to merely scientific

⁶ The strategic mandate of KNUST is to provide higher education, undertake research, disseminate knowledge and foster relationships with outside persons and bodies.

⁷ Colleges of Agriculture and Natural Resources, Engineering, Health Sciences and Science

questions) and gaining of experience at each step of the research process, from formulation to communication of results. Pilot research projects in the three thematic areas, have contributed to building capacity in problem-based research concepts manner for addressing specific societal problems that fall within KNUST's research remit.

In the area of postgraduate education, three new and one revised PhD curricula have been developed to address specific needs in the areas of Climate-Smart Agriculture and Entrepreneurship (2 WP1 and WP2). To augment KNUST's efforts to reach out to industry partners, BSUII under the WP2 has sponsored the development of an Academia-Industry (AI) linkage database and the creation of office space to facilitate the process. The AI database has created a common platform for KNUST researchers to interact with other researchers, industry partners, donors, alumni and students.

In addition, BSUII engaged in activities aimed at strengthening the university-wide research support systems, including ready access to literature, laboratory services, and grants management. This has yielded the dual benefit of strengthening the administrative capacity for sustainable research processes as well as equipping the staff to conduct high quality research.

Under the University-wide Services and Facilities Supporting Research Work Package (WP4), a number of university-wide research support initiatives has been introduced, all of which should be considered important elements towards KNUST's framework for institutionalizing a research-responsive administrative system. This framework will facilitate consolidation of grants and research as well as graduate education and training guidelines for easy access by internal and external stakeholders. These initiatives include the development of a Research Management Information System (ReMIS) and the Grants Accounting Management Software (GAMS), upgrade of facilities and resources at the 'Research Commons' of the University library and enhancement of the central laboratory standard operational and management processes. Other initiatives are development of postgraduate education and training guidelines/policies including enhancement of written and oral thesis examinations, PhD Supervision guidelines, Publication Policy, Graduate Student's Handbook and introduction of new and enhanced PhD Curricula to address emerging market trends and societal needs. In addition, the development of an automated tracking system for thesis submission and examination has been prepared to empower the School of Graduate Studies to provide graduate students the needed support to complete their programmes within stipulated time frames. This will improve KNUST's overall visibility and make KNUST the university of choice in Ghana for postgraduate education and training.

South-led management of donor supported projects is gradually becoming the norm at KNUST as the university requires of its staff to initiate and submit winning research proposals for external funding. The south-led mode of BSUII has also led to increased ownership at all levels of the project, in comparison with the north-led BSUI. The KNUST research management capacity has benefitted from the north-south interactions with respect to structured project planning and implementation of the partnership, with logical framework based approaches as key ingredients. Members of the Danish consortium have also benefitted from networking, particularly with respect to research collaboration and the contextual perspectives derived from the interactions, leading to identification of new researchable areas.

These gains notwithstanding, BSUII faced a number of challenges during implementation. The delayed start of the project coupled with the short timeframe for implementation resulted in the need for a no-cost extension to enable the effective completion of activities. Implementation of activities with a relatively high number of Danish partners was also challenging. The relatively high number of different people involved in the different work packages sometimes made it difficult to follow through and achieve timely implementation optimum knowledge sharing, synergies and efficiency. The continued partnership will therefore aim at enhancing south-led initiation of TORs, joint and timely negotiation for timelines suitable to team members, improving communication between north and south partners and timely submission of assignment completion reports. This will lead to improved timely completion of activities by assignment holders, consolidation, coherence and greater degrees of institutionalization of the outputs.

Rationale for Continued Support

The overall objective of BSUIII is that the partnering African universities will enhance their roles as providers of scientific knowledge and of research-based education and advice to society. This objective is well aligned with those of KNUST. As outlined above, BSUII has created a sound foundation for further advancing the research capacity of KNUST. However, the institutionalization of novel research paradigms and support systems is a long-term and continuous process that requires further efforts within the three thematic areas, as well as with respect to creating sustainable research support systems.

In the case of a large university such as KNUST, the aim is primarily to address the objective at the Colleges particularly in the Colleges of Agriculture and Natural Resources, Science, Health Sciences, Engineering as well as the Humanities and Social Sciences. KNUST thus acknowledges

the need to consolidate and focus activities for better effect in the Colleges that reflect the WP thematic areas.

II. Strategic Direction and Theory of Change

Priority Research Capacity Development Areas

The major strategic research capacity development areas for the BSUIII partnership are conduct of problem-based (demand-driven) research (PBR), innovation, entrepreneurship, outreach and research support systems and structures. In BSUII, capacity building for conduct of research was at a pilot scale, directed at and carried out by specialized groups and individuals with limited diversity as regards disciplines, expertise and skills. While useful research has been carried out and capacity built among those involved, we expect that adoption of the new research paradigms at college level, as well as better outreach will be more effective through multi-disciplinary research groups. As will be accounted for later, capacity building of these research groups will revolve around a climate-smart agriculture, environment and health research nexus, with focus on one or more catchment areas⁸, with the promotion of innovation and entrepreneurship as key ingredients. This nexus aligns with KNUST and national priorities, reflects the competences and resources of the work packages, and holds promise for integrated training and research.

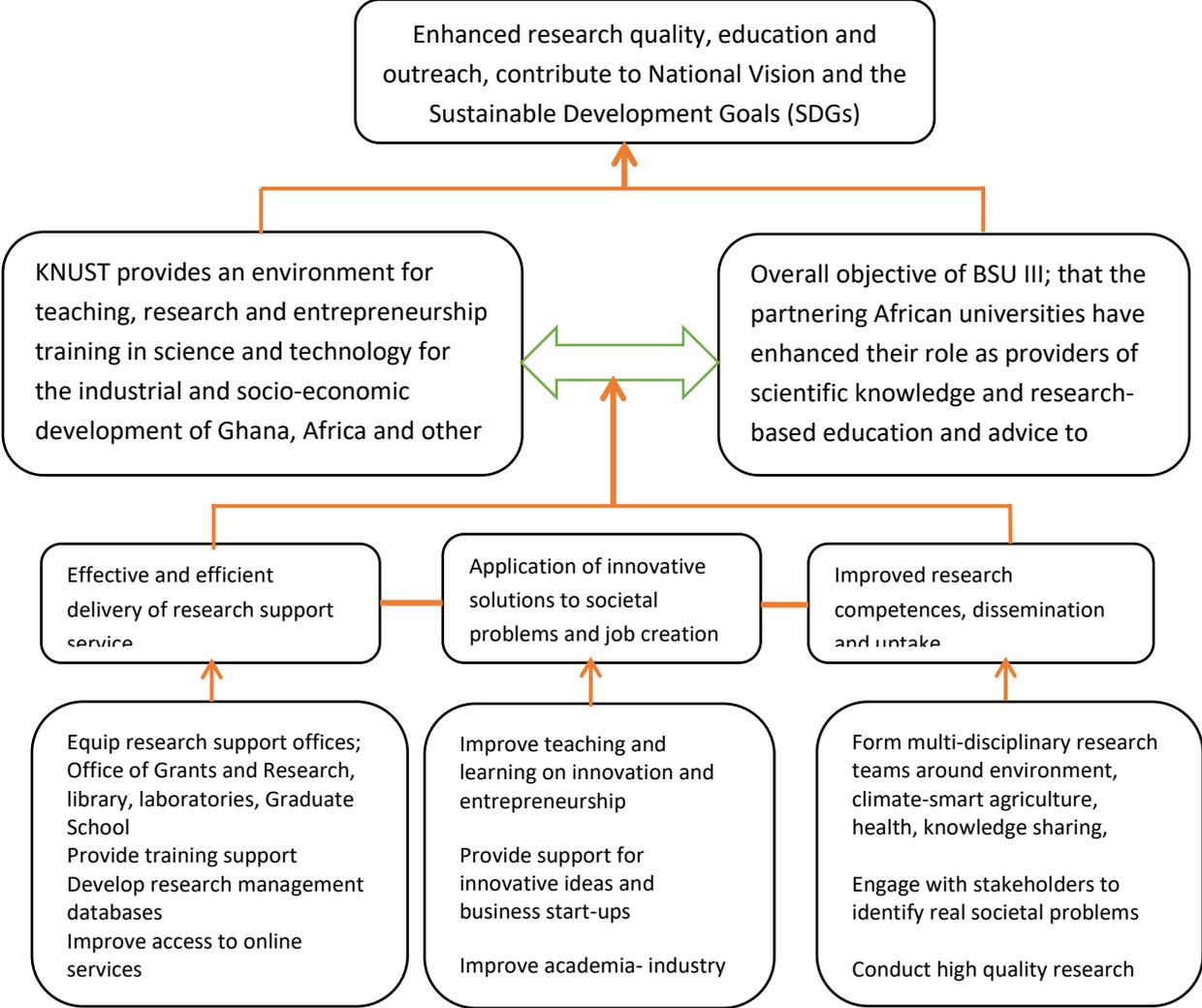
Theory of Change

In line with the overall objectives of BSUIII and KNUST's vision, three main outcome areas are envisaged in this proposal. These can be summarized as follows: strengthening the administrative capacity to support research; improving outreach/stakeholder collaborations for high quality research and improving university capacity by strengthening research and outreach practices and networks. These outcomes will be achieved by carrying out activities that will yield desired outputs, as outlined in the subsequent sessions. This is in line with the theory of change of the BSU III Concept Note, as it is believed that strengthening these areas, will enhance research quality, education and outreach and contribute to enhanced social and economic development.

⁸ The Owabi catchment in the vicinity of Kumasi is envisaged as the key 'field laboratory'. The catchment offers problematics that are relevant in natural resource management and public health perspectives, which are best addressed through multi-disciplinary approaches and the involvement of non-academic partners.

Multi-disciplinary research groups are central to the strategies of the world's best universities, as they are seen to foster collaboration with external stakeholders, and have the potential to conduct high quality research that addresses societal problems in a relevant and holistic manner. The capacity of staff and students involved in this process will be enhanced through peer learning, training, networking and learning-by-doing. To ensure the success of this process, other administrative structures such as the Office of Grants and Research, the Library, laboratories and the School of Graduate Studies will be equipped with the relevant resources. This will be provided through staff training, equipment support and the provision of automated systems such as software and databases. The achievement of KNUST's vision will further be accelerated as the ability of both staff and students to proffer innovative solutions to address specific problems through teaching and research get sufficiently improved. This is illustrated in Figure 1.0.

Figure 1.0: Theory of Change



Source: KNUST-DA, 2017

To this end, KNUST will form cross-theme and cross-college research teams to promote synergies in the research processes and better respond to societal demand and enhance collaboration

among staff and between colleges. This will stimulate and lead to adoption of multi-disciplinary research approaches with a view of enhancing problem setting and solving by the scientific research teams.. Furthermore, KNUST will apply a more demand-driven approach than was the case in BSUII. This will involve consultations with relevant stakeholders from industry, the public sector and communities. This is with a view to placing KNUST research in the relevant innovation landscape.

The scientific themes of BSUIII will focus on issues that are relevant to Ghana especially in the achievement of Sustainable Development Goals 1, 3, 6, 9 and 13, Ghana National Climate Change Policy as well as other relevant national policy documents⁹. While the three thematic areas under BSUII will be maintained, the focus will be narrowed to developing capacity for conducting problem-based/ demand-driven research (i.e. research that is based on actual problems of relevance to society), through the application of innovative processes with and entrepreneurial mindset as opposed to research of a purely scientific and theoretical nature. Research groups will be formed to address Climate Smart Agriculture and Environmental Management and Health Delivery Systems research questions under WP1 and WP3 respectively.

WP2 (Innovation and Entrepreneurship) in BSIII will be used and applied as a more focused tool to foster innovative processes and entrepreneurial thinking in conducting research. Thus, WP2 will focus its activities, from training to mentoring, at the research groups in WP1 and WP3 with the aim of ensuring that innovative and entrepreneurial processes and opportunities are explored in research. WP2 will also be used to expand KNUST's business incubation concept to unearth innovative ideas by staff and students for job creation. Lessons will be learnt from the Danish model of business incubation particularly at Aalborg University to improve upon KNUST's existing model.

WP4 (Research Support Services and Facilities) will continue to focus on University-wide research support services and facilities. The Office of Grants and Research, Library, Central Laboratory and the School of Graduate Studies will continue to be supported in providing quality research support services to staff and students of KNUST. In particular, the Office of Grants and Research will continue to improve its research-responsive support system to facilitate the institutionalization of research and research-based educational programmes across the

⁹ Ghana Strategic Investment Framework (GSIF) for Sustainable and Management, Climate Change in Ghana: impacts on agriculture and policy implications, Identifying opportunities for climate-smart agriculture investment in Africa, Ghana Forest and Wildlife Policy, Climate change adaptation: A primer for water conservation, flood risk reduction and irrigation strategy for Northern Ghana, Climate change and disasters: perspectives from Ghana three northern Regions, National climate adaptation strategy, Increased resilience in Northern Ghana through the management of water resources and diversification of livelihoods.

university. Pilot research projects will be designed to collect baseline data needed for the development of externally funded research projects. With the institutionalization of BSUIII outputs and other processes, KNUST will be better placed to serve, as a knowledge hub that provides innovative solutions to developmental problems in Ghana, Africa and beyond. Furthermore, BSU III outputs will contribute to the improvement of the academic ranking of KNUST because of the improved research culture, increased research publications, citation counts and online presence.

Ultimate Outcome (Goal)

By 2021, KNUST will be recognised as innovation platform for teaching, demand-drive research and entrepreneurship for the accelerated achievement of relevant Sustainable Development Goals (SDGs). KNUST, as a centre of excellence will be better positioned to provide scientific and technological support to countries, especially in Africa, for the achievement of the SGDs and other development targets. . This will be evident in the visibility of KNUST researchers and postgraduate students in various problem-solving endeavours such as policy-oriented research, innovation, public policy and private sector development across Africa

Assumptions

The attainment of the intermediate outcomes and their transition to the ultimate outcome rests on the following assumptions:

- a) KNUST has well-trained researchers capable of undertaking problem-based research projects to promote and disseminate knowledge and other research outputs to relevant stakeholders. This implies that BSUIII will enhance and sustain the ongoing efforts.
- b) KNUST is an international centre for the promotion of excellence and advancement of scholarship. BSUIII support will be a catalyst for striving to enhance KNUST's visibility during and after the project.
- c) KNUST's industry partners are willing and able to collaborate with researchers throughout the research cycle.

Major Development and Changes from BSUII

Overall, BSUIII will focus on developing for conducting problem-based research in multi-disciplinary research groups at the level of individuals.. This involves a focus on synergies and the convergence of hitherto scattered skills in the context of a climate-smart agriculture,

environment and health axis. WP2 in BSUIII will seek to develop capacity for innovation and entrepreneurship in the context of this axis, i.e. through training and the promotion of (pilot) research that includes innovation and entrepreneurship dimensions, when addressing agricultural, environmental management and health delivery problems. Pilot research projects will be identified and implemented with stakeholders ensuring their involvement in the research process.

Improved monitoring and evaluation of processes at college level represents an additional element of consolidation, the aim being to better internalize capacity building processes. Furthermore, improved monitoring and evaluation will foster more effective communication of the capacity building experience to the university leadership, thereby enhancing the potential for seeing the scaling up of approaches to the university wide level.

Under WP1 and WP3, multi-disciplinary Research Groups will be formed across Colleges of Science, Agriculture and Natural Resources, Engineering, Health Sciences, and will in some cases also involve Humanity and Social sciences. The groups will comprise both young and experienced faculty members who will work together with external stakeholders to identify and conceptualize real life research problems. The Research Groups will be taken through various methodology training, and be introduced to state-of-the-art in the specific fields. Experienced researchers from both KNUST and the Danish partner institutions will be assigned to the groups to provide mentorship. The idea is to ensure that KNUST research becomes well-equipped for providing solutions to societal problems in a holistic manner. The approach is also expected to promote research dissemination and uptake by appropriate stakeholders.

Emphasis on Outreach, Innovation and Entrepreneurship

Increasingly, the government of Ghana, along with industry, has voiced concern about universities' ability to carry out research needed for solving the country's development problems. The global and the national development agendas are becoming closely aligned with the UN's 17 Sustainable Development Goals (SDGs) framework. Achieving these goals demand concerted efforts, through engaging with external stakeholders in the private and the public sectors, in the identification, conduct and dissemination of research. The strategic mandate of KNUST charges it to provide higher education, undertake research, disseminate knowledge and foster relationships with external stakeholders. The mission of KNUST also mandates the university to provide knowledge and expertise that directly support the industrial and socio-economic development of Ghana. In line with this, BSUIII will build on KNUST's mission to provide relevant solutions to Ghana's developmental problems through the generation of new

knowledge for use by social and economic actors, especially in the areas of climate-smart agriculture, environmental management and health delivery systems.

An important feature of the SDG agenda is its holistic approach to development, with emphasis on working in partnership with to achieve goals. Therefore, the intensification of KNUST's partnership with public and private sector actors in addressing critical developmental issues in the selected thematic areas under BSU III is therefore appropriate and consistent with the global agenda. Developing the capacity of KNUST researchers in applied multi-disciplinary research and institutionalizing problem-based research as the norm, will make research more relevant for addressing existing societal challenges. In BSU III, these processes will include the strengthening of linkages with the government, private and public sector operators as well as with civil society. Moreover, WP2, as already indicated, will be assigned a much more 'cross-cutting' or integrating role, as regards improving capacity of WP1 and WP3 research teams in the use of conceptual and concrete tools innovation and entrepreneurship. Acquisition and use of such knowledge will enhance KNUST's capacity to provide the innovative solutions needed for the industrial and socio-economic development of Ghana.

In addition, the innovation and entrepreneurship focus will create an enabling environment for interaction between KNUST and local SMEs geared towards improving teaching and mentored students' learning activities.

BSU III will also strengthen institutional capacity in the provision of research-based advisory services and consultancy. The Danish model for public and private sector consultancy, i.e. research based-advice provided to public authorities and the private sector (typically ministries, companies and industry associations) will serve as guide. These activities, which are highly institutionalized in the Danish partner universities, represent outreach at a structural level. It is believed, that the combination of strengthening the ability of KNUST researchers to carry out applied research through research groups, with a focus on strengthening KNUST's ability to do so as an institution that serves key national authorities, will have far reaching capacity building potential that extends beyond the BSU III timeframe. In BSU III activities in this regard will revolve around inspiration and learning visits to Denmark, as well as seminars on typical models.

Gender Mainstreaming

Even though women are underrepresented in the university teaching and research staff population, BSU III will ensure their effective participation in all the work packages of the project. In each work package, it will be ensured that women, representing various areas of expertise, are involved and in fair proportions. Overall, KNUST will stay committed to gender equality and

increase female involvement in all the research, training and outreach processes in BSUIII. In BSUII, about 25 percent of pilot study participants were females. Efforts will be made to increase female participation to 30 percent in all activities involving staff. This is also aligned with the University's increasing efforts to promote female career and education in Science, Technology, Engineering and Mathematics (STEM).

III. Objectives, Outcomes and Outputs for the Partnership in BSUIII

Development Objective

The overall objective of BSUIII is to contribute to of KNUST's vision of producing high caliber graduates and knowledge to support the sustainable economic and social development of Ghana and Africa.

Immediate Objective

The immediate objective of the BSUIII is that KNUST has strengthened its frameworks, systems and practices for research to the extent that it is better able to engage with private and public sector stakeholders for the generation of new knowledge for addressing social and economic problems of Ghana.

Overall Outcomes

1. KNUST staff have access to highly improved research-responsive administrative processes and systems (Danida Outcome Area 1)

2. KNUST has strong stakeholder collaborations and able to offer tailor-made solutions to societal problems through the conduct of demand-driven research (Danida Outcome Areas 2)
3. KNUST adopt the culture of innovation and entrepreneurship in teaching and research to foster technology transfer and commercialization of knowledge (Danida Outcome Areas 3)

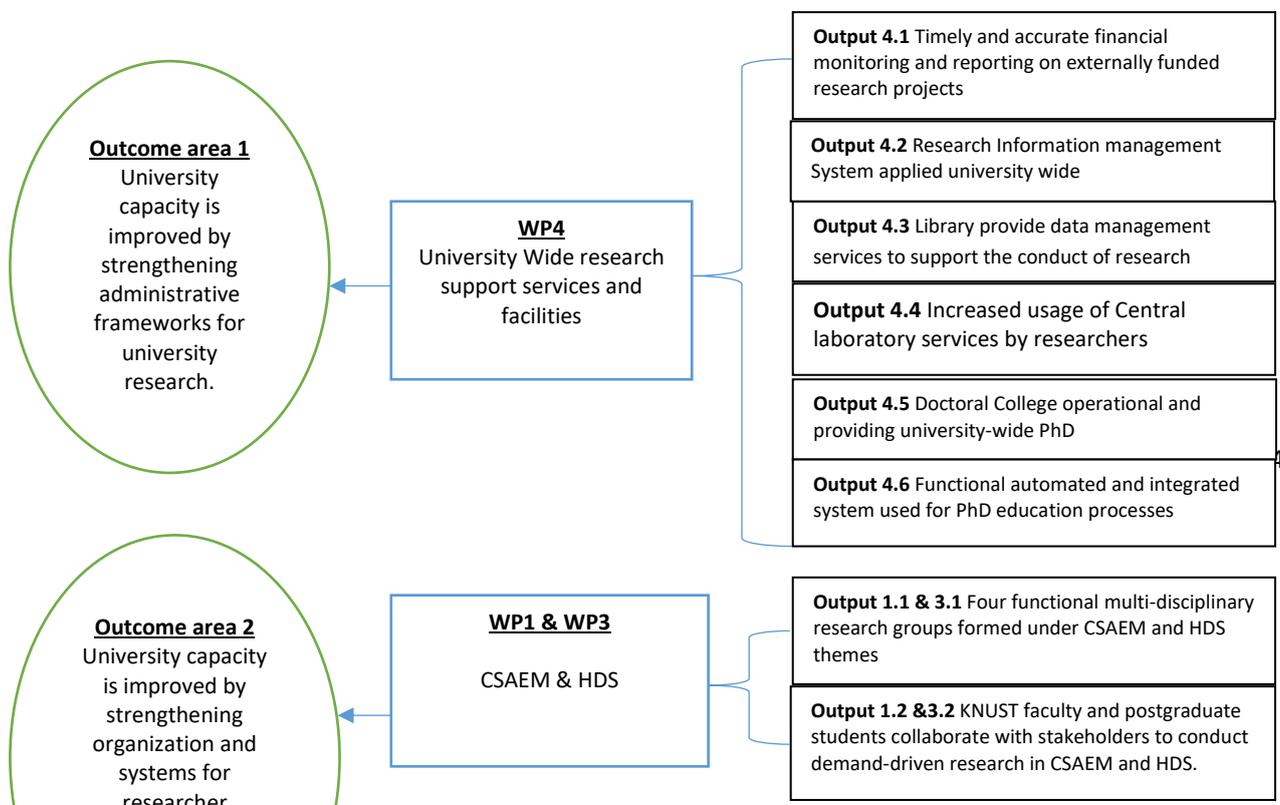
DANIDA OUTCOME AREAS AND KNUST OUTPUTS

In reference to the DANIDA Concept Note, three outcome areas are envisaged in the BSUIII Proposal: These are:

1. University capacity is improved by strengthening administrative frameworks for university research
2. University capacity is improved by strengthening organisation and systems for researcher education and research processes.
3. University capacity is improved by strengthening research and outreach practices and networks

KNUST’s outputs for BSUIII in the four work packages have therefore been aligned to the above outcomes as illustrated in figure 2.

Figure 2: BSUIII Implementation Structure



Source: KNUST-DA, June, 2017

Outcome Area 1: University capacity is improved by strengthening administrative frameworks for university research

The outputs under this outcome area predominantly fall under WP4 – University-wide Research Support Services and Facilities and include the following:

4.1 Timely and accurate financial monitoring and reporting on externally funded research projects

The use of the Grants Accounting Software and training of accountants and researchers in grant financial management will increase timeliness and accuracy in project reporting.

4.2 Research Management information systems providing synchronized data on research expertise and activities across the university

Training on research management and the use of the Research Management Information System (ReMIS) will ensure that such information across the university is centrally available and accessible.

4.3 Library provide data management services to support the conduct of research

BSU III will initiate a research data management system for the university because this is currently non-existent. The library will lead this process that will eventually result in the provision of support for researcher data needs and storage of datasets that will be made accessible for further research.

4.4 Increased usage of Central laboratory services by researchers

The central and affiliate laboratory system will reach out to the research community in the University and in industry, and provide equipment specific and application training in order to promote and expand use of the state of the art central laboratory. Use of Standard Operating Procedures (SOPs) and ISO certification will ensure that the laboratory is providing quality services to users.

4.5 Doctoral College operational and providing university-wide PhD courses

A Doctoral College will be established at the School of Graduate Studies to institutionalize the provision of PhD skill enhancement training through the offer of mandatory PhD courses developed in BSU II.

4.6 Functional automated and integrated system used for PhD education processes

The automated and integrated system for post graduate education processes developed in BSUII will be operationalized. Further upgrade will be done to capture the entire spectrum of graduate students' training processes at KNUST. Training of supervisors and students will facilitate understanding and appreciation of their specific roles and responsibilities towards enhanced postgraduate training and education processes.

Outcome Area 2: University capacity is improved by strengthening organisation and systems for researcher education and research processes.

The Outputs under this outcome area relate to element of the 3 thematic areas: WP1-Climate Smart Agriculture and Environmental Management (CSAEM), WP2-Innovation and Entrepreneurship (I&E) as well WP3-Health Delivery System (HDS).

1.1 & 3.1 Four functional multi-disciplinary research groups established In many countries, multi-disciplinary research groups have proven to be one of the most effective ways of obtaining high quality holistic and relevant research findings whilst capitalizing on the benefits team dynamics. In KNUST, the research group concept is not well developed neither at the College level, nor across Colleges; rather, is research undertaken on an individual basis and in single-disciplinary fashion. As a result, capacity development and internalization at the collective level is limited, and while the research produced may be excellent in its own right, the societal relevance that may be achieved through the addition of multi-disciplinary perspectives, usually leaves room for enhancement.

The core research groups will comprise Danish partners, KNUST faculty, and PhD students, from relevant colleges. Research capacity building will revolve around an agriculture/climate change, environment and health research axis, with the Owabi catchment in the vicinity of Kumasi envisaged as the key microcosm 'field laboratory'. The catchment offers problematics that are relevant in natural resource management and public health perspectives, which are best addressed through multi-disciplinary approaches. Therefore, the research groups are also likely to include participants from social science and, may also, end up being mixed CSAEM-HDS groups. The exact composition and scope of these groups will be determined during the BSUIII inception/work planning. The groups will be trained and mentored to function as a strong research entity in KNUST.

1.2 & 3.2 KNUST faculty and postgraduate students collaborate with stakeholders to conduct demand-driven research in CSAEM and HDS. .

This output is tied to output 1.1 & 3.1 as the research groups will be trained on relevant models for stakeholder engagement and outreach. KNUST researchers will work together with external stakeholders to conceptualize relevant societal problems which will be taken up for further studies by the research groups as research projects. Findings from the research will then be shared with the relevant stakeholders for uptake.

2.1 KNUST staff and students make use of innovation processes and explore entrepreneurial opportunities as part of their learning and research processes.

Research groups in WP1 and WP3 will be taken through innovation processes of doing research with cases drawn from the Owabi catchment and elsewhere. External stakeholders (entrepreneurs, end-users) will also be taken through trainings to enable them appreciate the technical and commercial benefits of the research. Entrepreneurship clinics will also be organized across the university to create entrepreneurship awareness amongst staff and students.

2.2 Well-equipped learning hub for innovative activities established at the Kumasi Business Incubator for prototyping.

With the establishment of the industry-academia database in BSUII, a linkage between industry and academia has been forged. A continuous collaboration between KNUST and Industry is therefore of utmost importance. KNUST has taken the lead to provide the necessary environment for introducing students to entrepreneurship and has gone further to establish the Kumasi Business Incubator to cater for students who have the passion to establish ICT-related businesses. Due to the limited capacity (25 offices) of the Business Incubator many students are turned away. However, there is physical space to support incubation of a larger group as well as virtual support to start-ups.

To upscale the innovative activities of students and members of the public, a fully equipped innovation laboratory will be established for the use of greater number of prospective job-creators across departments. This will be in the form of a well-equipped Makers' Space, where students and researchers can sit and develop creative ideas towards prototyping and product-development after extensive market research. What is important is that an enabling and guided environment is created for people with creative and innovative ideas towards job creation. In addition to the innovative lab, the major missing link is research and development funds.

Furthermore, the capacity for lecturers across departments will be developed (e.g. in the CSAEM and HDS research groups) to support this center, in the area of business plan reviews, business support training and entrepreneurship coaching.

Outcome Area 3: University capacity is improved by strengthening research and outreach practices and networks

The outputs under this outcome area relates to elements under WP1, WP2 and WP3.

1.3 & 3.3 Staff upgrade and Exchange Program for PhDs and Postdocs in CSAEM & HDS groups

Having high numbers of staff with PhDs is widely recognized as a core element in research capacity building. This output does not involve full scholarships for post-doctoral studies or PhDs, but will offer training and capacity building support to both young and old faculty members especially those who have had little or no further training after completion of their academic degrees.

The support will include an exchange program with Danish partners, intensive training on research/grant proposal writing and networking for both postdocs and staff enrolled in PhD programmes in the two thematic areas of WP1 and WP3. This is expected to improve staff capacity in the teaching and conduct of research. Preference will be given to female staff members during the selection process.

2.3 Academic-Industry networks developed to facilitate innovation, outreach and entrepreneurship

Processes to enhance academia-industry linkages at KNUST were initiated in BSUII. An academia-industry database was developed and a office equipped. A few pilot research collaborations were commenced and showcased on the AI Database. There is the need to strengthen collaboration with industry through sector by sector stakeholder meeting. Also surrogate/ external entrepreneurs will be engaged to provide entrepreneurial inputs into research and to convert innovations from the laboratory to a viable product in a market place. Further training and awareness on the use of the database, and capturing of appropriate data on the linkages is required to strengthen research collaboration and outreach.

IV. Risks

1. **Timely availability of research and other staff for implementation of project activities:** The risk of staff not being available for BSU III activities at scheduled time will be avoided by scheduling project activities in a manner that will minimize conflict with teaching and other duties of targeted staff. Project activities in a manner that will minimize conflict with teaching and other duties of targeted staff.
2. **Institutional support:** The risk of inadequate support by the University for institutionalization of BSU III outputs and outcomes, will be mitigated by aligning the project leadership to existing university management structures through the involvement of various College leaders and the BSU III Steering Committee to be constituted by the Vice-Chancellor.

Delays in project implementation: Delays in the inception phase processes as well as joint scheduling of activities by KNUST and Danish partners pose a risk to the timely implementation of activities. Adequate allocation of time for the planning phase and for the execution of activities will be ensured by the project leads. Project management support teams will help in the timely identification of implementation deviations and prompt introduction of corrective measures.

V. Coordination, Learning, Partnership and Management of BSU III Support

The overall coordination of the South-led partnership with Danish institutions will be anchored at KNUST. It will be aligned to and fully integrated into the existing university management structures as the leadership is designed to involve various College leaders and includes overall project accountability to the Vice Chancellor. KNUST, as the project holder, will have the overall responsibility of coordinating and managing the grant. A Steering Committee will be constituted by the Vice Chancellor to provide a higher level of supervision over the project. A Steering Committee will be constituted by the Vice Chancellor to provide a higher level of supervision over the project. KNUST leadership led by a Coordinator, will be responsible for the overall communication with the partners of the Danish Consortium, as well as Danida and DFC, when needed. He will also be responsible for technical coordination of BSU III activities, including preparation of technical and financial reports with the help of a project administrator.

The planning, implementation and monitoring of the partnership will be managed by a joint north-south partnership management team led by the KNUST and Danish coordinator, the work package leaders at KNUST and the work package leaders of the Danish consortium. The north-

south partnership management team will meet over Skype within a maximum of one month, or as needed. The Danish consortium coordinator and work package leaders will meet physically every 6 months.

Work Package Leaders, both north and south, will have academic backgrounds and experience relevant to the work package themes. This is expected to enhance professionalism in selection of assignment holders and in implementation of assignments, something which has a bearing on efficiency and consistency in project delivery. The work package leaders will draw on specialised and dedicated expertise in their academic and administrative hinterlands, and are expected to outsource activities to fewer and more specialised individuals as output leaders with a view to enhancing continuity, and sustained capacity development processes. This implies that WP leaders at the intra-WP levels communicate and agree on these matters. Efficient implementation, along the lines of these principles, will be ensured through detailed work planning at the inception workshop. The Danish consortium will be led by the Department of Agroecology, Aarhus University. The KNUST and Danish Consortium Coordinators will lead the day-to-day management and decision-making for the project, and will meet via Skype as and when needed. Aarhus University as the Danish lead institution will also be the legal entity that enters into the trilateral agreement with KNUST and DFC.

The Danish Consortium will be represented by three universities (Aarhus: WP1, Copenhagen: WP3 and Aalborg: WP2) and WP4-a private company (CG consult). All 4 entities have considerable BSU experience and will offer specialised expertise within the thematic areas. In the case of WP2, the expertise of Aalborg University will be augmented by an operational link to Access2Innovation, an organization specialized in support to innovation processes, bringing together civil society organisations, businesses, public institutions and the academic world in new collaborations, creating new sustainable solutions and business models targeting developing countries.

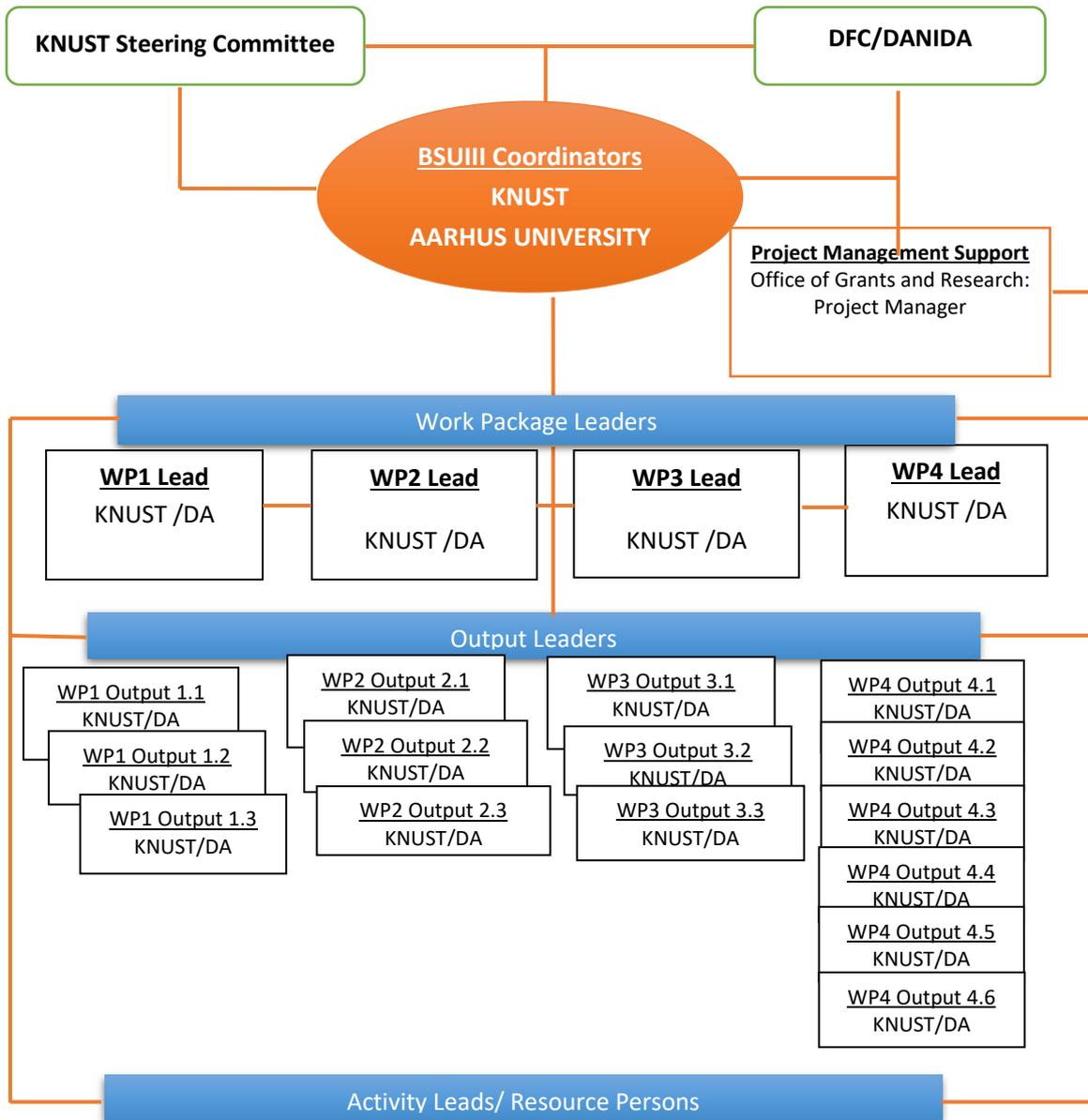
The chosen thematic areas will be consolidated and strengthened by focusing efforts on identifying and pursuing mutual learning and synergies from relevant ongoing and previous research collaboration and capacity building projects with Danish and other foreign collaborators. Building upon current and past experiences will also minimize duplication of work and efforts through encouraging joint planning and implementation of similar activities across

Work Packages. The awareness at KNUST created during the BSUII project will be utilized in BSUIII to enhance effective communication among all research, training and outreach programs across the University. The up-scaling of results and continued insights and lessons learned during BSUIII are all envisioned to impact on KNUST's performance within the three outcome areas.

BSUIII will seek to strengthen networking, partnerships and communication through various activities including the organization of training workshops for the thematic leaders, research teams and their associated colleagues. These activities will assist the development of systems for communication, information handling and sharing across and beyond KNUST. The partnership will develop South-South linkages as part of this phase to enrich the implementation and outcomes of BSUIII with contextual relevance, peer learning, potential synergies and optimized use of resources. These collaborations will enable the partnership opportunities to develop high impact and relevant research that contributes to building research culture of a cross disciplinary manner. The chosen thematic areas will be consolidated and strengthened by focusing efforts on identifying and pursuing mutual learning and synergies from relevant ongoing and previous research collaboration and capacity building projects with Danish and other foreign collaborators. Building upon current and past experiences will also minimize duplication of work and efforts through encouraging joint planning and implementation of similar activities across Work Packages. The awareness at KNUST created during the BSUII project will be utilized in BSUIII to enhance effective communication among all research, training and outreach programs across the University. The up-scaling of results and continued insights and lessons learned during BSUIII are all envisioned to impact on KNUST's performance within the three outcome areas.

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Figure 3: BSUIII Management Structure



VI. Sustainability Plan

The BSU intervention by DANIDA will eventually come to an end. Therefore, it is important to put in place mechanisms for sustaining the achievements garnered by the project. It is worth mentioning that the BSU intervention is well situated in KNUST's mandate and vision as a science and technology university. This implies that it is highly unlikely for the university to relent its efforts on strengthening research capacity.

In BSUII, wide stakeholder consultations and involvement was used a tool to ensure ownership and commitment towards the project. This approach will be continued and even strengthened under BSUIII. In the formation of research groups, Provosts of all Colleges will be directly involved in the nomination and selection of staff members to constitute the research groups. This will ensure that the research groups are continuously supported beyond BSUIII. The motivation to continue with the research group concept and even upscale it university wide lies in the ability of the research teams to submit research proposals external funding and ultimately increasing the size of KNUST's research fund portfolio. Therefore, training and skills development in grant proposal writing and successful delivery of projects will be given additional focus during implementation.

In addition, as mentioned earlier, the selection of work package leaders will be strategically done to ensure that the assigned tasks fall within the scope of work of the selected persons. This will ensure that BSUIII activities are incorporated in the day to day activities of the units the output leaders largely represent.

In BSUIII, improved documentation and dissemination of project achievements will be explored. Specific milestones on the project will be shared with all relevant stakeholders through dissemination meetings, university website and all other means possible. This will increase awareness and commitment towards the project.

VII. Framework Budget

NO.	OUTPUTS	KNUST	Danish Consortium	Total
		DKK	DKK	DKK
OUTCOME AREA 1: STRENGTHENING ADMINISTRATIVE FRAMEWORKS FOR UNIVERSITY				
4.1	Improved financial monitoring and reporting processes	267,000	542,963	809,963
4.2	Research Information Management Systems	144,000	452,963	596,963
4.3	Library providing data management services	223,000	272,963	495,963
4.4	Increased use of central lab services	172,000		172,000
4.5	Doctoral College	123,000		123,000
4.6	Automated PhD system	76,000		76,000
	Sub Total Outcome Area 1	1,005,000	1,268,889	2,273,889
OUTCOME AREA 2: STRENGTHENING ORGANIZATION AND SYSTEMS FOR RESEARCHER EDUCATION AND RESEARCH				
1.1	Form multi-disciplinary research groups in CSAEM	388,000	692,963	1,080,963
1.2	Stakeholder collaboration for demand-driven research in CSAEM	501,333	492,963	994,296
2.1	Staff and student capacity in innovations and entrepreneurship	270,000	692,963	962,963
2.2	Business Incubation Center	623,000	402,963	1,025,963

3.1	Form multi-disciplinary research groups in HDS	336,000	692,963	1,028,963
3.2	Stakeholder collaboration for demand-driven research in HDS	361,000	492,963	853,963
	Sub Total Outcome Area 2	2,479,333	3,467,778	5,947,111
OUTCOME AREA 3: STRENGTHENING RESEARCH AND OUTREACH PRACTICES AND NETWORKS. PROCESSES				
1.3	Staff upgrading and exchange programs (CSAEM)	1,070,000	180,000	1,250,000
2.3	Academia-industry linkages	137,000	270,000	407,000
3.3	Staff upgrading and exchange programs (HDS)	632,000	180,000	812,000
	Sub Total Outcome Area 3	1,839,000	630,000	2,469,000
	OUTCOME TOTAL	5,323,333	5,366,667	10,690,000
	Overhead (12%)	638,800		638,800
	Coordination Cost (8%)	425,867		425,867
	DK Overhead (20%)		1,073,333	1,073,333
	SUB-TOTAL	6,388,000	6,440,000	12,828,000
	Audit	112,000	60,000	172,000
	OVERALL TOTAL	6,500,000	6,500,000	13,000,000

VIII. Annexes

Information on KNUST

The Kwame Nkrumah University of Science and Technology (KNUST) is one of Ghana's public tertiary institutions. The campus is situated about seven kilometres from the centre of Kumasi, the Ashanti regional capital, and covers an area of about sixteen square kilometres of undulating land. The campus represents a panorama of beautiful and modern buildings interspersed with verdant lawns and tropical flora that provide a cool and refreshing environment congenial for academic studies. The University was established in 1961 and started awarding its own degrees in June 1964. Internal and external examiners examine all degree programmes. In addition, some programmes are reviewed by external moderators to ensure that high academic standards are maintained. The University runs both undergraduate and postgraduate programmes with a student population of about 40,000 and about 900 academic staff. Total graduate output of KNUST has increased from about 2000 in the 1999/2000 academic year to over 10,000 in 2014/2015 academic year.

The vision of KNUST is to advance knowledge in science and technology for sustainable development in Africa. The mission of KNUST provides an environment for teaching, research

and entrepreneurship training in science and technology for the industrial and socio-economic development of Ghana, Africa and other nations. KNUST also offers service to the community. The University is open to all, and positions itself to attract scholars, industrialists and entrepreneurs from Africa and the international community. The University operates a collegiate system with six (6) academic Colleges namely: (1) College of Agriculture and Natural Resources (CANR); (2) College of Art and Built Environment (CABE); (3) College of Humanities and Social Science (CoHSS); (4) College of Engineering (CoE); (5) College of Health Sciences (CHS); and (6) College of Science (CoS). The Colleges are made up of Faculties and Departments, most of which are located on campus. Some of the departments and research stations of the University are located outside the campus. These include the clinical departments (Medicine, Surgery, Pathology, Child Health, Obstetrics and Gynaecology, Internal Medicine, Surgery, Anaesthesia and Intensive Care, Radiology and Eye, Ear, Nose and Throat) located at the University's affiliate Teaching Hospital (Komfo Anokye Teaching Hospital), the Dairy/Beef Cattle Research Station at Boadi and the Agriculture Research Station at Anwomaso, all in Kumasi.

KNUST is a public University established to train the science and technology manpower for Ghana and Africa. , Until five to ten years ago, KNUST produced about 90% of the manpower for Ghana's industries including engineers, architects, building technologists, planners and pharmacists. State funding has over the years reduced from 100% to about 49%. The University makes up this shortfall from student fees, other income generation activities and externally funded projects.

The University is currently expanding the conduct of research through increase in postgraduate enrollment and improving the institutional environment for research projects. These are being facilitated by academic departments as well as the School of Graduate Studies and the Office of Grants and Research. KNUST continuously seeks for collaborations to build its research and teaching capacity.

More information on KNUST can be found at www.knust.edu.gh.

Research Capacity and Research Collaborations with Other External Partners

KNUST has a number of research capacity building collaborations with each focusing on a specific thematic area. Some of these collaborations are outlined below.

The Energy Center and the Department of Mechanical Engineering of KNUST are partnering with the Norwegian University of Life Sciences and Norwegian University of Science and Technology at Alesund to implement a project to build capacity in higher education and research within the fields of energy and petroleum. The five-year NORAD-funded project titled "Upgrading Education and Research Capacity in Renewable Energy Technologies at KNUST is expected to end in 2019.

The KNUST Department of Surgery is collaborating with the University of Washington to strengthen injury control research in Ghana and West Africa. This is being implemented through the training of Masters and PhD students in injury related research. The project, funded by the USA National Institutes of Health commenced in 2016 and will end in 2021.

KNUST is also hosting the Regional Centre of Excellence for Water and Environmental Sanitation Centre, Kumasi (RWESCK), a World Bank funded initiative under the African Centres of Excellence Programme to provide support for postgraduate training in water supply and environmental sanitation. KNUST is partnering with the National Water Resources Institute of Nigeria, University of Benin, Nigeria, Universite Cheikh Anta Diop, Senegal and the Ministry of Education, Gambia in this programme.

KNUST also participated in the Development Research Uptake in Sub-Saharan Africa (DRUSSA) initiative, a five-year DFID-funded programme supporting 22 universities across Africa to strengthen the management of research uptake. It was led by the Association of Commonwealth Universities and ran from October 2011 to September 2016. The purpose of DRUSSA was to help improve the capacity of universities to contribute research evidence in pro-poor policy and practice. The project provided training for staff of KNUST and other participating Universities and produced a wealth of programme-derived knowledge, tools, and resources that university leaders, research staff and research uptake managers can continue to use as they strengthen their own systems for getting research into use.

The capacity built in engaging stakeholders and outreach to non-scientific populations in the DRUSSA will be leveraged for the implementation of BSUIII. Persons with expertise built in areas including mentoring, collaborative research, interdisciplinary research in the other projects will be involved in BSUIII to ensure strengthening previous efforts and maximizing returns on investments. Joint planning will be explored with projects in similar areas to avoid duplication of activities. Experiences and lessons learnt in other capacity building projects will also be tapped into for learning.

ANNEX 9

Partnership Proposal - University of Ghana

1. Rationale, and main lessons learnt during BSU II

A major recent development at the University of Ghana (UG) has been the strategic focus to transition from a traditional teaching-intensive university into a modern research-intensive university. The transformation process has been driven through the following strategies: increase in the proportion of postgraduate students, upgrading existing academic staff without terminal academic degrees to PhD level, and restructuring of the PhD training process by increasing the duration of the programme from 3 to 4 years with the inclusion of an obligatory experiential learning year. The University has also established the following 4 centres of excellence as the main research thematic areas. The University has also established a) Malaria Research; b) Trans-disciplinary Research into Climate Change Adaptation; c) Enhancing Food Production and Processing; and d) Development Policy and Poverty Monitoring and Evaluation. These thematic areas have been selected based on the availability of a critical mass of UG researchers skilled in these fields, and also in response to national development needs.

The BSU II project has successfully contributed to this process in three outcome areas: 1. Enhancing institutional capacity for PhD delivery at UG, 2. increasing the capacity of UG faculty to achieve the improved PhD delivery, and 3. improving the financial and administrative capacity to support the transition of UG as outlined above. BSU II achieved several outputs in each of the three outcome areas.

With respect to the first, four crosscutting PhD courses were designed and executed; these courses are planned to be integrated into the standard curriculum at UG. The first ever PhD conference held at UG proved an efficient way of involving all invited Ghanaian universities and attracting public attention. The conference allowed PhD students to communicate their research findings and opened a promising discussion on how best to run a modern research-intensive PhD school. This is an important step in equipping PhD students in Ghana with the skills and avenues to enable them to disseminate their research to an audience of both researchers and non-researchers.

With respect to the second outcome area, experiential learning opportunities were created to enhance the capacity of the participants to successfully proceed with their research in the themes of the four Centres of Excellence. This was further buttressed by Training-of-Trainer workshops that provided the capacity to replicate the PhD courses conducted as part of BSU II; an important step towards improved research-based teaching at UG. Finally, provision of four full-time PhD scholarships allowed UG faculty without terminal degrees to upgrade their academic status within the areas covered by the UG Centres of Excellence. Having successfully completed their coursework and comprehensive exams, they are currently attached to research projects in marine science, gender mainstreaming and malaria.

With respect to the third, a state-of-the-art multi-purpose seminar and conference room was established at the School of Graduate Studies, and this is already allowing efficient, timely, and cost-efficient examination of PhD candidates and facilitating communication for scholars across long distances.

Improved research administration and postgraduate thesis tracking was achieved through the installation of a modern grants management software. This software has already been rolled out to manage the UG Conference Grant and enrolment of other UG grant portfolios, such as the UG Research Fund should follow soon.

BSU II confirmed the key positive lesson from BSU I that North-South institutional collaboration is an effective tool to advance research and training ambitions on both sides; advances that would have been extremely difficult to achieve otherwise. The specific focus in BSU II on the four UG Centres of Excellence proved to be successful in further strengthening collaboration and capacity building within the three outcome areas.

The above successes and achievements notwithstanding, the BSU II project also revealed challenges and difficulties. Evidently, the targeted activities were highly ambitious, considering the project's in-built temporal and financial constraints. Secondly, pre-existing schedules of both South and North partners posed challenges in timing of some activities. This put further pressure on the timelines, although that was partially alleviated by a 6-month extension of the project. Additionally, general price increases necessitated modifications in some of the planned activities. The ambition to hold two PhD conferences and to build two multi-purpose seminar/conference rooms proved unachievable. However, one conference was executed, and one seminar/conference room was created.

Administrative and coordination tasks were reasonable, as were reporting deadlines. The support from DFC was adequate. The partnership was de facto South-led, and the major part of the budget was allocated to activities taking place in Ghana. These elements, which enhanced project management capabilities at UG, should be retained in their present form in BSU III.

Based on these experiences, we propose a BSU III project that will consolidate the gains made in BSU II to ensure the sustenance of its core activities and capacity elements. The ultimate goal of the project, which are based on the capacity development needs of UG, is to support the ambition of UG to transform into a research-intensive modern university, that can contribute to the knowledge-based societal progress. Progress, which must be at the core of all education and research, and which is essential for training the nation's workforce appropriately for the knowledge-based development era we are in today, and for spurring development more generally, as were the founding goals of the university.

We propose to achieve these goals by increasing focusing energy and resources on specific thematic areas that were most effective in BSU II, to attain the greatest impact. Thus, the partnership has narrowed its focus to target fewer activities to achieve a higher impact, thus achieving a realistic balance between ambition and the available temporal and financial parameters. Such adjustments are vital to ensure the continued progress of the BSU collaboration in terms of outcomes and ultimately societal impact. Thus, in BSU III, we will focus on the two most productive thematic areas from BSU II, namely Malaria research and Trans-Disciplinary Research into Climate Change Adaptation. Within these areas, BSU III will establish strong linkages in the areas of PhD education, post-doctoral training, experiential learning and industrial outreach. We are mindful of the continued relevance and importance of the other two thematic areas to UG's strategy. Hence, even though they will not be directly incorporated in the BSU III project plan, we will salvage the prior investments and UG's interests by integrating poverty monitoring into the malaria theme and food security aspects into the climate change theme, wherever such a coordination and integration is possible and meaningful. The research focus on malaria and climate change emanates from the identified needs, anticipation of future challenges and opportunities, and direction of UG research consolidation, national policy alignment and sustainable development goals. It was also informed by the emerging capacity developed through the North-South BSU partnership.

Our partnership proposal is designed specifically to contribute to the overall objective of BSU III, which is to further enhance the role of the South partner university as a provider of scientific knowledge and research-based education and advice to society, through its research, educational output, and its engagement with external partners.

2. Strategic direction and Theory of Change of a continued partnership in BSU III

A critical mass of qualified human resources is required to sustain the momentum of the UG agenda to transform into a research-intensive university, and to maintain and increase the societal relevance of the university. This requires a versatile capacity-development strategy that consolidates the gains of BSU II, especially those within recognised UG strategic areas with the best potential for impact. There is also the need for a versatile, sustainable, and collaborative organisational and leadership framework from the north partners. The BSU III project, therefore, focuses on research capacity building and outreach in two of the four thematic areas of the UG Centres of Excellence. The rationale is that these areas have the demonstrated the greatest potential for sustainable progress and impact of the north- south partnership. In addition, BSU III will ensure more focus and consolidation on the selected two thematic areas.

The strategy to deliver this research capacity in the two selected areas is to create thematic research groups with integrated PhD/post-doctoral training teams collaborating on a pilot research platform that simultaneously anchors the collaborative project and becomes the basis for the students' PhD theses fieldwork. Although the pilot projects are small PhD-based studies, the accumulation of the intellectual collaboration promises the demonstration of a development impact, a proof of concept of sorts of how improving scientific capacity can contribute to problem-solving and to enhance the lives of Ghanaians. The initiatives and approaches applied will be in alignment with UG's structures and will be anchored with UG management and leadership to ensure institutionalisation. The success of these research groups will be underpinned by increased capacity for outreach, for research management and administration, as well as provision of adequate infrastructure upgrade. We will train UG faculty in stakeholder outreach, improve the administrative capacity to attract and maintain research funds through training of research managers, improve the ability to communicate on multiple electronic platforms, and upgrade thematically relevant laboratory facilities. Uniformed approaches will ensure similar workflows and eliminating parallel systems and structures.

The Theory-of-change behind this strategy is that capacity for knowledge-based decision-making is an important foundation of societal progress. Malaria and climate change are two prominent challenges to such progress in Ghana. We will therefore, provide relevant thematic research, research-based teaching, and outreach activities towards communities, private sector and policy-makers. This will be achieved by enabling nationwide student access to state-of-the-art research, training and facilities, and by increasing researcher stakeholder outreach. An important outcome is increased UG contribution to global problem-solving in the selected thematic areas by forming and supporting focused research teams, composed of senior scientists, postdocs, and PhD students. All initiatives within the two thematic areas will position UG with a solid foundation and institutionalised capacity whereby and from which external funding, research grants and international collaboration can be attracted enabling UG to consolidate and strengthen even further.

Furthermore, we will put emphasis on developing efficient thematic research groups by including postdoctoral training and pilot research, by strengthening the capacity of the teams for societal outreach, and by providing them with enhanced administrative support and facilities. Improved capacity for UG societal outreach will be achieved by training UG faculty and students in outreach and

stakeholder engagement in demand-driven research. The research groups will become the basis for attracting additional resources, such as students, networks and projects thereby strengthening the research environments at UG and thus, will provide a model of training and capacity building that ensures continuity and sustainability. A career structure or framework which will serve as a model for postdoctoral and PhD education, and will form the basis for early-career research in the thematic areas. This model involving senior researcher, postdoctoral and doctoral tutelage moves UG away from the traditional supervisor/student based PhD education to a group learning experience, where the phased doctoral and post-doctoral training and a chain of mentorship ensures efficiency, builds cohesion for sustainable partnership

The focus on malaria and climate change stands on the shoulders of an extensive experience with collaboration between Danish universities and UG. With respect to malaria, Danida-sponsored research collaboration between UG and University of Copenhagen has been active since 1993. Examples include the ENRECA project “Accra-Copenhagen Research Link”, the Larger Strategic Research Collaboration “MAVARECA”, as well as several FFU-sponsored individual research projects, PhD fellowships, and postdoc fellowship grants. Currently, two BSU II PhD students are doing their experiential learning and research projects at UG and University of Copenhagen.

With respect to climate change, UG has collaborated with Aarhus University, University of Copenhagen, and the Technical University of Denmark (DTU) since 2010. Examples include the Larger Strategic Research Collaborations “SIFA” and “WEBSOC”, as well as the FFU-sponsored individual research project “CLIMCOCOA”. Currently, one BSU II PhD student is doing her experiential learning and research projects at UG and University of Aarhus.

One of the strategic priorities in UG’s new strategic vision is to create the best environment for equal opportunity in gender and diversity. In concert with UG’s Strategic Plan, the promotion of gender equality in all activities of the project is essential. The partners are committed to avoid discrimination between men and women, in respect of national and international laws. We will ensure that the gender dimension is properly addressed by promoting the participation of women in all project areas, making efforts to ensure that the final team includes the presence of women in the correct positions and competencies, promoting an environment for equal opportunity in gender and diversity and thus, equity. The Financial Manager and the Coordinator of the project will perform a careful monitoring to respect these guidelines. Participants will be advised of actions to promote gender balance within the project.

The improved UG leadership in the selected thematic areas is expected to act as a catalyst for further improvement outside those areas and even beyond UG by acting as an inspirational beacon for others. This will lead to increased outside awareness from society and sponsors, leading to a spreading of knowledge-based societal progress in Ghana.

3. Objectives, Outcomes and Outputs for the Partnership in BSU III

Capacity for knowledge-based decision-making is an important foundation of societal progress and the ability of any society to cope with political and environmental challenges.

Developmental objective

The overall developmental objective of the partnership is that UG, by 2021, will be a primary source of locally relevant scientific knowledge and research-based solutions to societal issues in Ghana within the selected thematic areas of malaria and climate change. We would have demonstrated, through the limited examples emanating from the selected themes, that locally-relevant scientific research can be applied to improve the lives of Ghanaians. Therefore, Government and industry players will have confidence in the quality of the research produced in these areas and in its ability to impact society. Well-trained researchers and students will conduct regionally relevant research to provide needs-based solutions to the Ghanaian society.

Malaria and climate change are two prominent examples of such challenges to human welfare in Ghana, and these thematic areas are, therefore, the focus of this Partnership Proposal.

Towards the developmental objective, the immediate objectives/project outcomes for external stakeholders are: (i) An improved access of students, nationwide, to state-of-the-art research and research-based university-level training in the themes of malaria and climate change. (ii) An increased awareness in surrounding communities about the benefits of research-based analysis and interventions in these areas, and (iii) an increased involvement of the commercial sector in developing solutions to malaria- and climate change-related threats. With respect to UG, the project outcome is an increased international ranking of the university, which will increase its attractiveness to sponsors, researchers, teachers, and students, at the local, regional, as well as an international scale. Similarly, higher ranking means research output from UG will gain more credibility with government and the populace at large.

The project outcomes are the effects of a series of carefully framed outputs. The overriding Theory-of-Change is: Collaborative research and research-based training of PhD- and postdoc-level scientists within thematically focused research teams at UG will result in active research teams applying state-of-the-art research in the thematic areas, preparing high-quality grant proposals, and publishing international-level research findings, and providing relevant solutions to Ghana's developmental needs. This improvement is achieved through training activities; by upgrading necessary learning tools (relevant literature availability and laboratory and communication facilities); by increasing outreach to external stakeholders (external collaborators, non-academic partners in industry and elsewhere, and sponsors); by enhancing the capacity for acquisition and maintenance of external research funding; by paving the way for sustainable career structures for postdoctoral level researchers, and by providing seed funding for pilot research.

The activities in this Partnership Proposal are organised in three work packages with associated outcomes and outputs.

WORK PACKAGE 1: Administration, organisation and facilities, cross-cutting

Outcome WP1: By 2021, researchers and students at UG will benefit from state-of-the-art financial management support within the selected thematic areas, from improved access to African contextual literature, and from high-quality supervision, facilities, and from a framework for a formalised postdoctoral career structure. Research managers will be equipped to manage grants more effectively and efficiently. This will effect a shift from administrative chores to productive research.

Output 1.1: Researchers and students have electronic access to African contextual literature within the

selected thematic areas that can constitute an increased part of the learning and research materials, thereby enhancing the societal relevance of UG research.

[Output 1.2](#): Researchers and students at UG use an upgraded PhD virtual classroom facility (created in BSU II) for efficient examination with external/international participation, and for other collaborative activities involving external and international partners.

[Output 1.3](#): Effective grant management and financial procurement systems are established, and implemented for improved UG-wide research grant administration resulting in a more quality research administration environment.

[Output 1.4](#): Researchers at UG are submitting competitive research grant applications, facilitated by improved grant-writing skills and improved coordination with grant managers, resulting in increase in research funding means an increase in quality research that improves lives.

[Output 1.5](#): A framework (career structure) for postdoctoral level researchers at UG has been created and the framework is implemented within the selected thematic areas.

WORK PACKAGE 2: Malaria

[Outcome WP2](#): By 2021, internationally competitive malaria research is performed by thematically focused research teams composed of established researchers leading teams of highly trained postdoctoral fellows and PhD students. Research-based training, teaching and coursework, participation in international research networks, as well as outreach activities are integrated components of the productivity in these teams.

[Output 2.1](#): Several malaria research teams with defined aims and capable of conducting competitive research, training young researchers, producing international- and national- level publications, performing societal outreach, and attracting national, regional, and international funding for their activities; actively providing evidence from the research that improves lives of Ghanaians.

[Output 2.2](#): Advanced thematic PhD courses that include modern e-learning components are an integrated part of the PhD education in malaria at UG.

[Output 2.3](#): At least 2 PhD degrees have been awarded to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses, and these researchers are engaged by UG to work in the focused malaria research teams.

[Output 2.4](#): At least 2 experienced postdocs have been trained and taking leadership of new thematically focused malaria research teams.

[Output 2.5](#): UG faculty trained in stakeholder outreach. External stakeholders are involved in the formulation and implementation of pilot research by participating in shaping the research themes pursued, and in outreach activities such as symposia and conferences and the results from the research will enrich lives. Industry engagement workshops and seminars are institutionalised (regularly organised with policy briefs) by thematically focussed research teams.

WORK PACKAGE 3: Climate change

[Outcome WP3](#): By 2021, internationally competitive climate change research is performed by thematically focused research teams composed of established researchers leading teams of highly trained postdoctoral fellows and PhD students. Research-based training, teaching and coursework, participation in international research networks, as well as outreach activities are integrated components of the productivity in these teams.

[Output 3.1](#): Several climate change research teams with defined aims and capable of conducting competitive research, training young researchers, producing international- and national-level publications, performing societal outreach, and attracting national, regional, and international funding for their activities; actively providing evidence from the research that improves lives of Ghanaians.

[Output 3.2](#): Advanced thematic PhD courses that include modern e-learning components are an integrated part of the PhD education in climate change at UG.

[Output 3.3](#): At least 2 PhD degrees have been awarded to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses, and these researchers are engaged by UG to work in the focused climate change research teams.

[Output 3.4](#): At least 2 experienced postdocs have been trained and taking leadership of new thematically focused climate change research teams.

[Output 3.5](#): UG faculty trained in stakeholder outreach. External stakeholders are involved in the formulation and implementation of pilot research by participating in shaping the research themes pursued, and in outreach activities such as symposia and conferences, the results of which will enrich lives of Ghanaians. Industry engagement workshops and seminars are institutionalised (regularly organised with policy briefs) by thematically focused research teams.

[Output 3.6](#): Laboratory facilities allow state-of-the-art research and research-based training.

The linkages to the three outcomes in the Danida Concept note are shown in Table 1.

		Concept Note Outcome Area		
		1	2	3
		Administrative	Research, outreach (organisational)	Research, outreach (individual)
1	Work Package 1: Administration and organisation			
1.1	E-library facilities including contextual literature within the selected thematic areas	X		
1.2	Upgraded PhD virtual classroom facility created in BSU II	X		
1.3	Effective grant management and financial procurement systems within the areas malaria and climate change	X		
1.4	Competitive grant application skills within the area of malaria and climate change		X	
1.5	Framework (career structure) for postdoctoral level researchers	X		
2	Work Package 2: Malaria research			
2.1	Competitive malaria research teams		X	
2.2	Advanced malaria PhD courses including e-learning		X	
2.3	PhD degrees to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses			X
2.4	Postdocs ready to take leadership of new thematically focussed malaria research teams			X
2.5	External stakeholders in the formulation and implementation of pilot research		X	
3	Work Package 3: Climate Change research			

3.1	Competitive climate change research teams		X	
3.2	Advanced climate change PhD courses including e-learning		X	
3.3	PhD degrees to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses			X
3.4	Postdocs have been trained and are ready to take leadership of new thematically focussed climate change research teams			X
3.5	External stakeholders in the formulation and implementation of pilot research		X	
3.6	Existing laboratory facilities upgraded		X	

4. Risks

Research and research capacity building are critically dependent on continued financial support. The ability to conduct research-based teaching and training thus presupposes the availability of adequate external support for the research on which these activities are based. This includes continued support for research and capacity building by DFC. All partners involved in this proposal are continuously seeking funding for research that underpins the activities proposed, nationally, regionally, and internationally, and lack of success in procuring such funding will jeopardize the work proposed. Furthermore, in view of the potential decline of available funding opportunities worldwide, as well as the requirement for scientific and financial performance for researchers increases the pressure under which those involved in this collaboration – not least the North partners – must perform. Topics like malaria and climate change are not exempt from these challenges. Due to the competitive nature of grant funding, we will strive to submit as many quality proposals as possible to increase our chances of success.

Research and research capacity building are also potentially susceptible to delays. This is particularly true in the case of long-distance collaborations. The causes of delays can be internal (e.g. institutional demands on participants), as well as external (e.g. political and natural disturbances, infrastructural difficulties). To mitigate these risks, we will take care to schedule project activities in a timely manner and well ahead of the time of planned implementation. Furthermore, both north and south participants will take care to keep their institutions well informed about the demands on participant time required for the successful execution of the project, with a view to obtain a prior institutional acceptance of such requirements.

Finally, research and research capacity building critically depends on the ability to recruit and retain talented and dedicated people to plan, execute, and report the activities planned. We will recruit project staff (postdocs, PhD students) in a competitive manner, selecting those best qualified. Furthermore, we have

taken care to make the project positions adequate financially, research-wise, etc. This is expected to mitigate the potential risk of PhDs leaving at the end of the programmes.

5. Sustainability

The successful implementation of this project will enhance UG's ability to access grants beyond BSU III to sustain the activities of the North-South partnership established. The PP design allows us to enhance the ability of research managers to support faculty to win additional grants. The postdoctoral framework to be developed under the partnership will form part of the UG's orientation programme for faculty. This function will be managed by ORID in partnership with the Academic Quality Assurance Unit (AQAU) of the university. The Grants Management software and the laboratories to be upgraded have university buy-in and will, therefore, be taken over by the relevant University units to ensure continued usage beyond the life of the project. The industrial engagement component of the proposal will also be sustained through ORID's newly formed Technology Development and Transfer Centre (TDTC). With the high-level buy-in of the BSU activities at the office of the Pro Vice-Chancellor, the partnership activities will be sustained by UG beyond BSU III.

6. Coordination, Learning, Partnership and Management of BSU III- support

All the proposed training activities will be coordinated with the UG Academic Quality Assurance Unit to enhance participation, streamline training with the university system and maximise budget efficiency.

Additionally, the partnership will exchange information and lessons learned under BSU III with actors engaged in other funded projects in UG. Dialogue with relevant local and external stakeholders (e.g. through stakeholder workshops) will be conducted.

Information on the project and project activities will be shared on the main UG website, and on the web page of Office of Research, Innovation and Development (ORID). The project narrative reports will be made available to the wider UG community via the UG website.

We will maintain the existing governance and management structure at UG as it has been successful. The project will be housed at the ORID, which is under the leadership of the Pro Vice-Chancellor (Research, Innovation and Development). The management team consists of a steering committee composed of a Coordinator, Faculty representing the thematic areas, as well as Project Administrators. The Management Team will be headed by a BSU III Project Coordinator, in the person of Professor George Obeng Adjei (Director of Research at ORID), who will have the overall responsibility to ensure the implementation of activities and timely delivery of technical and financial reports. On the north side, the project will be managed by Aarhus University as under BSU II, but with increased academic support from University of Copenhagen. Additional assistance will be obtained from the North partner leadership, the North lead Dr Finn Plauborg, AU and North Work Package Leaders (see the Table below).

The Steering Committee members representing both South and North partners are as follows;

		Work Package 1	Work Package 2	Work Package 3
South	1	Prof Richard Boateng	Dr Michael Ofori	Dr Kwadwo Owusu
	2	Ms Empi Baryeh	Prof. George Obeng Adjei	Dr Christiana Amoatey
	3	Mr Collins Amofah		
North	4	Dr. Christian Gregart, CGC	Dr. Lars Hviid, KU	Dr. Finn Plauborg, AU

Overall, the learnings from BSU II have been incorporated in the coordination setup for BSU III. The management structure both in the South and the North is leaner and characterised by more focus, mutual learning, lessons learned and continuity to improve efficiency.

The project partnership will explore opportunities for South-South cooperation with national (Kwame Nkrumah University of Science and Technology, University of Cape Coast, University of Health and Allied Sciences, University of Energy and Natural Resources) and regional universities (e.g., Kilimanjaro Christian Medical University College and Sokoine University in Tanzania, which have thematic foci similar to those here) with respect to the proposed pilot research, experiential learning, acquisition of additional funding, and co-supervision of PhD students.

7. Framework Budget

North-South-UG TOTAL BSU III BUDGET: DKK 13,000,000

№	MAIN ACTIVITY/COST ITEM	UG (55%)	North (45%)	Total
		DKK	DKK	DKK
1	Outcome area 1: Administrative capacity	1,077,352	792,945	1,870,297
1.1	<i>E-library facilities including contextual literature within the selected thematic areas</i>	427,000	377,778	804,778
1.2	<i>Upgraded PhD virtual classroom facility created in BSU II</i>	171,049	0	171,049
1.3	<i>Effective grant management and financial procurement systems</i>	200,000	270,000	470,000
1.5	<i>Framework (career structure) for postdoctoral level researchers</i>	279,303	145,167	424,470

2	Outcome area 2: Research and outreach capacity at system/organisational level	2,265,830	2,395,150	4,660,979
1.4	<i>Competitive grant application skills within the area of malaria and climate change</i>	200,000	517,778	717,778
2.1	<i>Competitive malaria research teams</i>	616,704	414,242	1,030,946
2.2	<i>Advanced malaria PhD courses including e-learning</i>	100,000	343,519	443,519
2.5	<i>External stakeholders in the formulation and implementation of pilot research in the area of malaria</i>	211,211	180,926	392,137
3.1	<i>Competitive climate change research teams</i>	616,704	414,242	1,030,946
3.2	<i>Advanced climate change PhD courses including e-learning</i>	100,000	343,519	443,519
3.5	<i>External stakeholders in the formulation and implementation of pilot research in the area of climate change</i>	211,211	180,926	392,137
3.6	<i>Existing laboratory facilities upgraded</i>	210,000	0	210,000
3	Outcome area 3: Research and outreach capacity at the level of individuals	2,490,153	1,641,906	4,132,058
2.3	<i>PhD degrees to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses (malaria)</i>	738,965	397,115	1,136,080
2.4	<i>Postdocs ready to take leadership of the new thematically focussed malaria research teams</i>	506,111	423,838	929,949
3.3	<i>PhD degrees to UG staff having acquired state-of-the-art skills through relevant experiential learning, research training, and high-quality PhD courses (climate change)</i>	738,965	397,115	1,136,080
3.4	<i>Postdocs ready to take leadership of new thematically focussed climate change research teams</i>	506,111	423,838	929,949
4	Sub-total (a)	5,833,334	4,830,000	10,663,334
5	<i>Coordination costs South university (max. 8% of total UG expenditures in budget lines 1.1-3.6)</i>	466,666	0	466,666
6	Sub-total (b)	6,300,000	4,830,000	11,130,000

7a	<i>Overhead UG university (max. 12% of total expenditures in budget lines 1.1-3.6))</i>	756,000	0	756,000
7b	<i>Overhead North (max. 20% of total expenditures in budget lines 1.1-3.6)</i>	0	966,000	966,000
8	Sub-total (c)	7,056,000	5,796,000	12,852,000
9	<i>External Audit</i>	98,000	50,000	148,000
10	TOTAL (UG) BUDGET	7,154,000	5,846,000	13,000,000

Annex 10 - Climate Change and Green Growth Screening Note

Climate Change and Green Growth Screening Note

Basic Information		
Programme title:	Building Stronger Universities Phase 3	
Country/region:	Ghana, Tanzania, Uganda	
Estimated allocation:	90 Million DKK	
Brief description of the Programme support:	Capacity development support to 6 universities which in cooperation with Danish partners will work on research, research-based teaching and outreach in key thematic areas.	
Dates (expected):	Development Policy Council/UPR: September 2017	
Climate change screening		
Assess the status of policies and strategies to respond to climate change in the country and sector. If the issue is inadequately dealt with (indicated by a tick in the “no” box), please add comments and assess the potential impact on the program (see also “next steps” section, below).		
<i>Issue:</i>	<i>Yes</i> <i>No</i>	<i>Comments and further work to be done:</i>
1. Are the processes and impacts of climate change documented (e.g. in national communications to the UNFCCC)?	<input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Is there a national climate change policy or strategy , including estimates of the economic costs of adaptation?	<input checked="" type="checkbox"/> <input type="checkbox"/>	
3. Have nationally appropriate mitigation actions (NAMAs) and or Low Carbon Development Plans been identified (e.g. targets for renewable energy production)?	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. Has a national adaptation programme of action (NAPA) been approved identifying key sectors where adaptation is required?	<input checked="" type="checkbox"/> <input type="checkbox"/>	
5. Are there effective and operational meteorological and disaster preparedness organizations ?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

Summarize the overall assessment of climate change impacts and responses:		
<p>According to the available information all three countries have developed a range of policies and strategies to respond to climate change. In Tanzania and Ghana, the BSU programme includes specific focus on adaptation to climate change</p>		
Screening of Country Green Growth Framework		
Assess the status of policies and strategies for green growth and the procedures for environmental impact assessment in the country and sector. If an issue is inadequately dealt with (indicated by a tick in the “no” box), please add comments and indicate further work to be undertaken (see also “next steps” section, below).		
<i>Issue:</i>	<i>Yes</i> <i>No</i>	<i>Comments and further work to be done:</i>
1. Do national procedures and legislation for Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) exist?	<input type="checkbox"/> <input type="checkbox"/>	
2. Are there operational Green Growth Strategies/actions plans and/or National Environmental Action plans ?	<input type="checkbox"/> <input type="checkbox"/>	
3. Are there regularly updated state of the environment reports and green growth monitoring systems with indicators ?	<input type="checkbox"/> <input type="checkbox"/>	
4. Is there sufficient institutional and human capacity for green growth and environmental management in the sector concerned?	<input type="checkbox"/> <input type="checkbox"/>	
Summarize the overall impression of the Country Green Growth Framework:		
<p>All three countries have developed environmental legislation and green growth strategies. In Tanzania and Ghana, the BSU programme includes specific focus on green growth linked to agriculture, marine resources and tourism.</p>		
Climate change and Green Growth opportunities and risks of programme		
Assess how climate change and environmental opportunities and risks will arise through the programme:		

<i>Will the programme ...</i>	Opportunity:	Risk:	None:
1. ... support green growth initiatives including livelihood improvements and resource efficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. ... support the creation of decent and green job ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. ... contribute to effective management and efficient use of natural resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. ... have direct or indirect impact on climate change (e.g. through increasing or reducing emissions of greenhouse gases)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. ... have direct or indirect impact on occupational health and safety ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. ... lead to changes in land and resource tenure and access rights, including the rights of indigenous peoples ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. ... include activities within or adjacent to protected or environmentally sensitive areas ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. ... have direct or indirect impact on the resilience of communities in the face of natural disasters ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Summarize and explain climate change and green growth opportunities:			
The thematic research areas will focus on e.g. climate smart agriculture, sustainable management of marine resources, job creation in agriculture, reducing environmental risks of tourism, and land and resource rights.			
Summarize and explain climate change and green growth risks:			
While the programme itself present small environmental risks, it may indirectly foster growth in e.g agriculture and aquaculture which may add to emissions.			
Identify requirements for undertaking an Environmental Impact Assessment (EIA). Categories are: [A] Full EIA required; [B] Partial EIA required; [C] No EIA required ¹⁰ .			
<i>Intervention Name</i>	<i>Category A, B or C:</i>		
1: Six development engagements with 6 universities	C		
2:	Select category:		
3:	Select category:		

¹⁰ Category A = Intervention is likely to have adverse environmental impacts that may be sensitive, irreversible, and significant in scale/scope; B = Intervention is likely to have negative impacts, but which are less significant, not as sensitive, numerous, major or diverse; C = The environmental risk of the intervention are of little or no concern.

Will national regulations and procedures for EIA be applicable to activities of the programme that have potential environmental impacts? – Yes - No

When will the EIA be undertaken?:

Next Steps – process action plan

Need for further work during the preparation, appraisal and implementation of the programme arising from the climate change and green growth screening:

Suggested activity: *Action needed* *Comments and elaboration:*

- | | |
|---|--------------------------|
| 1. Assessment of green growth and climate change opportunities in sector development plan. | <input type="checkbox"/> |
| 2. Assessment of capacity for green growth and climate change management in the sector/country. | <input type="checkbox"/> |
| 3. Prepare ToR for and conduct Country Analytical Work. | <input type="checkbox"/> |
| 4. Prepare ToR for and conduct SEA(s) of sector policies or plans. | <input type="checkbox"/> |
| 5. Prepare ToR for and conduct EIA(s) for programme interventions. | <input type="checkbox"/> |
| 6. Initiate donor harmonisation in the sector on green growth and climate change. | <input type="checkbox"/> |
| 7. Other...? | |

Signature of Screening Note

Copenhagen 1 august 2017

Lars Christian Oxe

Evaluation Department

Annex 11 - Human Rights Based Approach/Gender Screening Note

<i>Tool for Human Rights Based Approach (HRBA) and Gender Equality Screening</i>	
<p>Purpose: The purpose of the note is to facilitate and strengthen the application of the Human Rights Based Approach and mainstreaming of gender equality programming related to Danish development cooperation. It can be used as an inspirational checklist by all staff.</p>	
Basic info	
Title	Building Stronger Universities Phase 3
Country/ region	Ghana, Tanzania, Uganda
Budget in DKK mio.	90 million
Starting date and duration	September 2017, 4 years

Human Rights Based Approach			
Assess whether a Human Rights (HR) Based Approach has been applied in the programme:			
Human Rights Assessment and Standards			
Issues:	yes	no	Explain:
Have major HR analysis relevant for the country been consulted (UPR, OHCHR, EU HR Strategy, other relevant donor documents)	x		Danish country policy and planning documents have been screened
Have key international HR standards and/or mechanisms influenced choice and formulation of outcome areas?	x		Academic freedom, non-discrimination and gender equality have been considered
Where relevant, is application at national level, including major gaps between human rights in principle vs. human rights in practice, evaluated and identified?	x		Cf. reference to Danish country level documents
Are key recommendations from UPR for the thematic programmes and from any treaty bodies, special procedures, INGOs, HNRIs etc.		x	

that require follow up at national level considered?			
Are rights-holders identified?	x	x	The concepts of right holders and duty bearers are not easily applied to universities, researchers and students.
Are duty-bearers identified?			
Assess whether Human Rights Principles have been applied in the preparation and in the design of the programme?			
Non-discrimination: Are any groups among rights-holders excluded from access and influence in the thematic programme areas identified?		x	
Are disaggregated data available on most vulnerable groups?		x	Universities have as yet no data on e.g. indigenous groups, people with special challenges
List any key support elements included to promote non-discrimination			Focus on gender as part of research theme in Northern Uganda, gender equality targets for participation
Participation and inclusion: Are barriers for participation, inclusion and empowerment of rights holders identified?	x		
List any key support elements included to promote participation and inclusion			Gender participation targets
Transparency: Is the extent to which information is accessible to rights holders including marginalised groups assessed? Where relevant, whether information is available in other than official languages of the country in question should be indicated.	x		Universities operate with good basic levels of transparency, though in most cases only available in English.
List any key support elements included to promote transparency			Standards for and follow up on results including gender equality, and on accounting and auditing
Are key accountability mechanisms in the relevant area – both horizontal and vertical listed?	x		
Are obstacles, e.g. capacity and political-economy incentives that duty-bearers and rights holders face to exercise their obligations and rights listed?	x		See risk section
List any key support elements included to promote accountability			Support from DFC to the management of the support by Southern Partners
Results/Indicators			
List any indicators designed to monitor the realisation of specific human rights			a. b. c. d. ..
List any indicators designed to monitor the integration of the four principles			a. b.

			c. d. ..
List any key indicators chosen to track capacity of key partners (both rights holders and duty bearers)			a. b. c. d.

Dialogue Partners			
Define key dialogue partners (duty bearers) to be addressed by the country programme			
Define key alliance partners, including other likeminded donors, multilateral partners and CSO's			
State major dilemmas/risks associated with the policy dialogue and proposed mitigation measures (incl. reference to Framework for Risk Assessment)			

Gender Screening Tool			
Are key challenges and opportunities for gender equality identified?	x		
Are reference made to CEDAW-reporting, UPR, and other relevant gender assessments?		x	
Identify opportunities/constraints for addressing gender equality issues			Universities and tertiary education is strongly dominated by men, both indicating the long road ahead and the opportunities.
Describe key strategic interventions to promote gender equality within each thematic programme?			Focus on specific participation targets eg. In granted PhDs, participants in trainings.
Explain how gender specific purposes with be reached, which strategic approach, what activities are planned			See above
Define expected outputs.			See above. Indicators ar engagement level will only be defined during inception phase
Identify gender equality indicators aligned with national targets on gender if possible.			

