Inception Report

BSU II – Kwame Nkrumah University of Science and Technology

1. Summary Fact Sheet

1.1 Partners

The Partners under this BSU II Project are:

1. Kwame Nkrumah University of Science and Technology (KNUST), webpage: www.knust.edu.gh. The KNUST anchor is Professor Robert C. Abaidoo, Dean School of Graduate Studies, KNUST Email: abaidoorc@yahoo.com Tel: +233208438958

2. Consortium of Danish Universities Applicants (DAs) led by the University of Copenhagen (UCPH). The DA's anchor is Peter Furu, Department of International Health, Immunology and Microbiology, Faculty of Health and Medical Sciences, UCPH. Email: furu@sund.ku.dk Tel: +4535326786

The Kwame Nkrumah University of Science and Technology (KNUST) is one of Ghana's public tertiary institutions. The campus is situated about eight kilometres away from the centre of Kumasi, the Ashanti regional capital, and covers an area of about eighteen square kilometres of undulating land. The campus represents a panorama of beautiful and modern buildings interspersed with verdant lawns and tropical flora that provide cool and refreshing environment congenial for academic studies. The University started awarding its degrees in June 1964. Initially, externally examiners marked all degree examinations externally after they had been marked by internal examiners of the University. Currently, 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 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. It is open to all people and positions itself to attract scholars, industrialists and entrepreneurs from Africa and the international community. The University operate the collegiate system with six (6) Colleges namely: (1) College of Agriculture and Natural Resources (CANR); (2) College of Architecture and Planning (CAP); (3) College of Art and Social Science (CASS); (4) College of Engineering (CoE); (5) College of Health Science (CHS); and (6) College of Science (CoS). All Faculties and Departments are located on campus with the exception of the Faculty of Forest Resources Technology which is located in Sunyani, KNUST Dairy/Beef Cattle Research Station, Boadi and Agriculture Research Station, Anwomaso. Other Departments outside campus are Medicine, Surgery, Pathology, Child Health, Obstetrics and Gynaecology, Internal Medicine, Surgery, Anaesthesia and Intensive Care, Radiology and Eye, Ear, Nose and Throat all located at Komfo Anokye Teaching Hospital.

1.2 Project Duration

BSU ll runs until November 2016. However, it is anticipated that the partnership will be continued beyond this phase in support of long-term institutional capacity building.

1.3. Objectives

The overall objective of the BSU II partnership between the KNUST and the DAs is to support KNUST in creating an enabling environment for high quality and relevant research; and research-based education that will promote sustainable technological and socio-economic development in Ghana and Africa. The specific objectives of this program are to (i) Strengthen KNUST's capacity to deliver quality research and promote postgraduate education and, (ii) Improve university-wide services and facilities that support research.

1.4 Project themes, outputs and activities

This project is organized in four work packages: Three thematic work packages (WP 1-3) and one cross-cutting WP (WP4) that relates to university-wide services and facilities that enhance efficiency of research delivery and ultimately the achievement of KNUST's vision. The three thematic WPs address the core thrust of KNUST's research mandate in all the 6 Colleges. These thematic WPs are: WP1 – Climate-smart Agriculture and Environmental Management (CSAEM); WP2 Entrepreneurship and Job Creation (EJC); and WP3 -Health Delivery Systems (HDS).

The BSU ll project will increase the capacity of KNUST staff to effectively conduct and disseminate research in the thematic research areas. The key outputs will be research proposals and dissemination products including manuscripts, PhD staff upgraded, strengthened PhD curricula and strengthened industry-academia linkages. In WP4, the key outputs will be improved administrative and financial grant management, postgraduate supervision processes, as well as university-wide, generic PhD course, library and laboratory facilities and services. The core activities include training and mentoring, conducting of pilot studies and provision of necessary hard and software solutions.

1.5 Budget Summary

	KNUST	DA	Total
WP 1- CSAEM	1.715.676	1.316.840	3.032.516
WP 2 - EJC	1.521.673	1.032.440	2.554.113
WP 3 -HDS	1.422.673	1.032.440	2.455.113
WP 4 - USF	2.589.253	1.346.138	3.935.391
Subtotal - Activities	7.249.275	4.727.858	11.977.133
Inception phase	111.870	306.570	418.440
Coordination costs	579.942		579.942
Overhead	869.913	945.572	181.5485
DFC expenses	99.000		99.000
External Audit	90.000	20.000	110.000
Total	9.000.000	6.000.000	15.000.000

2. Objectives, outcomes, outputs and activities

2.1 Objectives

KNUST's mission is "*to provide 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*". Its vision is to "*advance knowledge in science and technology for sustainable development in Africa*". The BSU Program is central to achieving its mission and vision. KNUST envisages a continuation of the collaboration with DAs in BSU Phase I in supporting KNUST to create an enabling environment for conducting relevant and high quality research and research-based education that will promote sustainable technological and socio-economic development in Ghana and Africa. Specifically, this BSU II program aims at strengthening KNUST's capacity to deliver quality research and promote postgraduate education and, to improve university-wide services to facilitate effective mobilization and efficient use of research funds and access to improved laboratory and library services and facilities that support research.

2.2 Outcome

The BSU Program will strengthen and magnify KNUST's function as a node of innovation and knowledge production and contribution to the economic, social and political development of Ghana. The WPs have been organized to contribute to the development of skilled and motivated graduates who can contribute to the further development of their societies and address the challenges they face. Universities in Ghana are mandated to build human capacity and develop innovative solutions to address the many challenges the country faces. As a university of science and technology, KNUST is expected to provide solutions to the key development sectors in Ghana i.e. Agriculture, Education, Small-scale Businesses, Health and Environment. On this basis, this BSU II project has identified three thematic areas in tandem to the development needs of Ghana and also in line with KNUST's strategic mandate. Therefore, the interventions are expected to accelerated achievement of the KNUST's vision.

It is envisaged that KNUST by 2016 will have in place CSAEM research prioritization and quality monitoring, systems that that guide staff and students in identification of research problems, proposal development and curriculum revision. This prioritization will within the three sub-themes be captured as outcome 1.1 WP1 on CSAEM, as follows: (i) Climate-smart agriculture and agricultural water management – focusing on processes and interventions to enhance agricultural productivity of smallholder farming systems in Ghana (ii) Optimal and sustainable use of bio-resources – focusing on resource recovery and reuse from biowaste to enhance agricultural productivity and reduce environmental pollution and (iii) Ecosystems and natural resources management. At KNUST, research in CSAEM is a main mandate of 3 of the 6 colleges i.e. Agriculture and Natural Resources (CANR), Engineering (CoE) and Science (CoS). For achieving WP 2 (Entrepreneurship and Job Creation, EJC) outcomes, KNUST staff will be mentored to develop curriculum as well as strengthen entrepreneurship teaching and research based on academia-industry linkage models. WP2 on EJC aims at making KNUST highly responsive toward broader societal and market needs in research and economic development. Recognition of the need to 'restore confidence' and directly engage with external stakeholders through university-industry linkages is particularly important, and shows commitment to problem-based principles in promoting sustainable growth and employment. This is a core mandate of the College of Art and Social Sciences (CASS), CANR and college of Architecture and Planning (CAP). Within the implementation period WP3 (Health Delivery Systems, HDS) outcomes will include 20 additional KNUST staff being actively involved in HDS research in the three sub-theme areas and 1 more KNUST CoHS staff will be in the process of upgrading to PhD level. This

will consequently enhance the KNUST's capacity to contribute to research and knowledge management for improved population health and health-care delivery that ensures equitable and accessible health-care provision. HDS will have 3 sub-themes (i) Water and sanitation (environmental health) (ii) Antibiotic and anti-malarial drug resistance (iii) Maternal and child health. At KNUST, this thematic area is the main mandate of 2 colleges i.e. College of Health Sciences (CoHS) and CoS. The outcome of the activities in WP4 is an enhanced capacity at KNUST to provide effective and timely grant management services and ensures improved transparency in grant management, and demonstrates timely delivery of financial reports; in addition, users of KNUST Central Library and Central Laboratory experience higher quality and efficiency of library services. Furthermore, KNUST will have improved quality of PhD research processes driven by availability of user friendly protocols and guidelines on PhD planning and career development skills graduation, and better, healthy supervisor-student relations.

2.3 Key outputs and activities

2.3.1. Research processes

Related to the envisaged outcomes KNUST will be more competitive internationally in research fundraising and conducting quality research in its core thematic research areas, if human resources are upgraded and infrastructural resources are strengthened and can be better coordinated. This is the rationale behind **training and mentoring staff** involved in CSAEM (WP1), EJC (WP2) and HDS (WP3) research **in the entire research process** focusing on: research proposal development, pilot studies, and manuscript writing (Output 1.1.1, 2.1.1 and 3.1.2) as well as **investing in library and laboratory facilities** (Output 4.2.1 and 4.2.2). Science is rapidly evolving hence the need for the capacity of KNUST researchers to be upgraded to effectively use the current research methodologies and techniques in the field, hence need for specialized short courses (Output 4.3.2; also in Output 1.1.1, 3.1.2). Almost all staff at KNUST who are involved in research also have a core mandate of teaching, which often outstretches them. BSU II will be a good opportunity to provide tailored support to these staff and enhance their individual and KNUST's reputation in new research and learning approaches including Problem-based learning. The Problem-based learning (PBL) will enhance PhD students understanding of how various aspects of sustainability are interrelated within a broader conceptual framework of sustainability and the mutual interaction of environmental, economic and social sustainability. In addition, it will offer them opportunity learn about how their teaching can transform traditional engineering and science education to interdisciplinary and integrated problem based learning for sustainable development.

The plan is to take a cohort of carefully selected participants, who are or will be KNUST staff with strong research ambitions, through the entire process, so no ad-hoc activities will be conducted. Three cohorts of 60 staff (20 each from CSAEM, EJC and HDS) will participate in the process, which is planned to take 1 year (see Gantt chart). No common parallel trainings will be conducted and synergies have already been created in the three WPs for common training (see Gantt chart). For example, the stakeholder workshop will be held in the same day, while some elements in the research process like research management will also be conducted in a common pool. The thrust will be on hands-on-training and mentoring, so that at the end, other than improved skills among participants, the participants will have products (concept notes in key research issues, proposals to submit for external funding and manuscripts to submit for journals publication).

2.3.2. Facilities and support services
A prerequisite for strengthened research processes will be the **good administrative and financial grant management support to researchers**. KNUST has a newly created Office for Grants and

Research (OGR). OGR needs strengthening and its functions decentralized to colleges so that it can support researchers in identifying and responding to calls for external funding and publications. Various projects have employed different Project Administrators, who are in charge of logistics and reporting to donors. However, most of them have no training of project administration and many reports are delayed or not up to required standards. This jeopardizes the potential successes in attracting future research funds. In addition, while finance officers in colleges continue to do financial management of projects, they need specific training on financial grant management. In BSU II, there is urgent need to train financial and administrative grant administrators as well as strengthening the OGR as explained in Output 4.1.1.

Additionally, investments in equipment like for example library and laboratory are needed but will be need-based especially to support the cohort of participants in their respective research process but also beyond meeting the needs of the broader KNUST research community.

Overall, the engagement from the DA in this area will be a mentoring and co-training approach to upgrade KNUST senior staff skills to conduct training with some support from DAs.

2.3.3. Postgraduate Education and Research

KNUST already offers Department-based PhDs. For example, the Department of Civil Engineering offers PhDs in Civil Engineering. However, there are growing demands from the industry for offering subject/theme specific research. In this regard, BSU II will pilot **3 new thematic-based PhD programs** under WP1 (PhD in Environmental Science Policy and Management) and WP2 (PhD Agriculture Business Management; and PhD Business Administration) as described in Output 1.1.1 and Output 2.1.2. The process will benefit from the already developed PhDs but the plan here will be ensure active participation from industry stakeholders. It is planned that the required curricula for the 3 PhDs will be developed and submitted for approval by end of the BSU II project.

An important aspect of postgraduate education and research is the strengthening and rationalization of **guidelines for postgraduate education**. KNUST needs university-wide guidelines for postgraduate research and supervision which clearly outline responsibilities for students and supervisors, quality requirements, and even a tracking progress so as to achieve problem oriented dissertations and high impact journal publications. The current guidelines are college based and many of them are drafts only except the composite one from College of Health Sciences. Furthermore, the School of Graduate Studies runs an ineffective manual system for tracking and monitoring thesis assessment. As a response to current challenges it is highly important to **equip staff who supervise postgraduate research with necessary tools and skills** through mentoring and training. In this regard, selected active supervisors will undergo training and mentoring (part of it done in Denmark) to improve their supervision skills. BSU II (Output 4.3.1.) will liaise with the School of Graduate Studies to strengthen and approve the guidelines, improve supervision skills and install an electronic tracking system for the PhD research thesis monitoring process

Universities with a large pool of postgraduate students offer methodology and analytical courses that help students conduct better research. These courses may include (i) Quantitative and Qualitative Research Methods (ii) Scientific and Academic (thesis) Writing (iii) Research Planning and Research Proposal Writing, (iv) Innovative Statistical and Modeling Techniques, (v) Effective Information Search and Management Strategies, and (vi) Problem-based Learning approaches. At KNUST, these courses have been developed and in many cases at department level. BSU II will support in packaging and **institutionalizing these university-wide courses so that every PhD student** will be mandated to do these courses as part of the PhD requirements. The plan is to start with the 5 courses and in subsequent BSU phases, the number will be added.

2.3.4. Staff Upgrading to PhD level

The CoHS has made a specific request to upgrade some of its staff to PhD level. This direct PhD training for younger academic staff at CoHS will strengthen the human resource base and increase capacity that will translate local and international research to the benefit of Ghana. Initially, one PhD programme will prioritize one of the sub-themes identified under HDS and will register in KNUST and be co-supervised by Danish Universities. Research skills acquired during the PhD training will be applied in their own research and in teaching. We are aware that the PhD will not be completed under BSU II, but we have budgeted for the whole PhD Program (see Budget, Gantt chart).

3. Partnership Management and Governance

The overall management structure is illustrated in Figure 1 below.

The BSU ll KNUST partnership is headed by overall Anchors at KNUST and UCPH assisted by work package leaders and a project management support team responsible for cross-cutting day-to-day project communication, monitoring and management.

In total, the partnership covers four work packages each headed by a KNUST and DA leader who share the overall responsibility for carrying out, monitoring and reporting on the specific WP activities outlined in the Inception Report and for ensuring that specified outcomes and outputs are achieved. Their tasks also include, with advice from the coordinators, the drafting of terms of reference, and recruitment, briefing and debriefing of resource persons for specific assignments. Furthermore it is assumed that the WP leaders support the establishment and maintenance of synergies across the work packages.

To secure timely delivery of agreed inputs and services the partnership relies on committed team work between all DA and KNUST key resource persons, while in accordance with DFC's general conditions for BSU ll it is KNUST as the South partner who holds the overall and final responsibility for prioritizing, coordinating, reporting on and managing the partnership. It is the KNUST anchor and project management support staff who act as the primary entry points for communication with DFC. And it is the KNUST project management teams' responsibility to establish the guidelines and manage facility for easy upload and access to relevant documents including all core BSU ll KNUST and WP plans and reports from and for all key resource persons.

The WP teams (from DA and KNUST) will hold monthly meetings via Skype (or in Kumasi if the timing coincides with project activities), to assess progress according to their work plans and to adjust these where and whenever required. On a half-yearly basis these meetings will also serve the purpose to prepare the WP's input to the report to DFC that will be assembled and compiled by the project management support team. The Anchor team will have similar meetings quarterly to assess progress, and every half year to approve the financial and narrative reports before they are submitted to DFC.

At KNUST, the BSU II Project will be managed by a Steering committee (all KNUST staff listed below) and chaired by Prof. Robert C. Abaidoo) that reports to the Vice- Chancellor. The Steering Committee will have the responsibility for project implementation and financial management. The Project Management Committee will meet regularly to review and take major decisions especially in connection with project progress, financial and procurement issues. The structure proposed is in

tandem with KNUST's normal university management structure and BSU II management will follow the normal university decision making structure. The management and activity implementation processes will be administered to encourage female staff participation with the view increasing the visibility of University female research and administrative staff in the delivery of the University's main products. The two lead institutions will sign a contract with clear terms of references that will also spell out conflict resolution mechanisms.
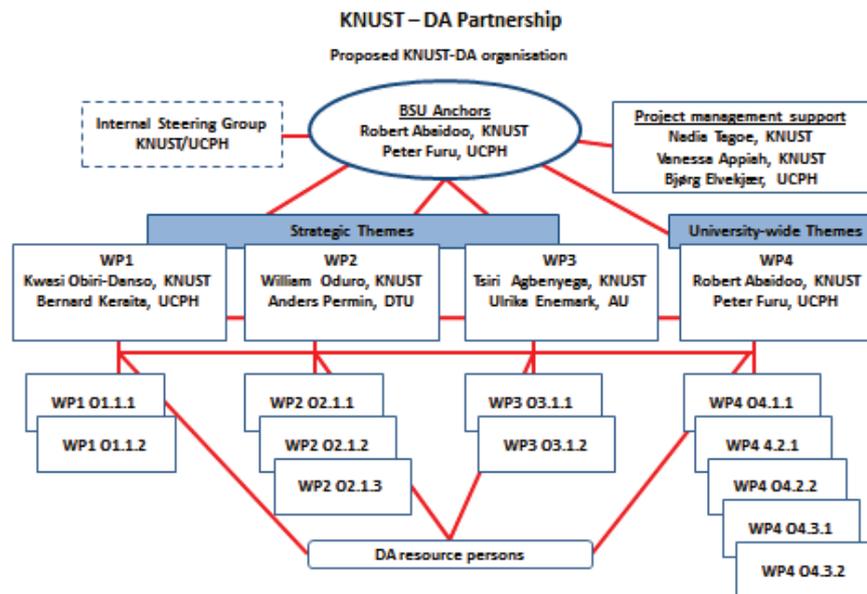
Fig 1. BSU II KNUST Management Structure

4. Risks and Mitigating Measures

- **Low motivation and commitment from participating staff**: Could be resolved through creating awareness so that staff recognize that the acquisition of skills is primarily to enhance their work performance and improve on their individual outputs in research. KNUST could also work out a sustainable rewarding system to motivate staff who spend additional man-hours implementing and contributing to BSU activities
- **Competition from other programs**: The project will be competitive (in terms of incentives and quality) to attract the best staff to participate.
- **Government research support and interference**: Expected that policy changes at government levels will not be a risk to the project implementation as KNUST is a government institution.
- **Age skewedness at the university** (gap between junior and retiring members of academic staff) causing lack of continuation – Now being addressed and partially resolved by the PhD scholarship and other interventions.
- **Delays in timely monitoring and reporting:** Programme support team providing timely guidance and reminders and WP leader teams responding accordingly.

6. Monitoring, Reporting and Auditing

Monitoring and reporting on the progress of the planned BSU ll activities will take place according to guidelines and calendar defined by DFC http://dfcentre.com/research/building-stronger-universities-bsu/inception-fase

- **Annual report** – technical and financial (<u>audited</u>) – should be completed by April 1st 2015 and 2016, respectively. The project year and fiscal year runs from January-December.

- **Progress report -** technical and financial (<u>non-audited</u>) – should be completed by October 1st 2015 and 2016, respectively. This progress report will be on the activities, achievements and spending over the previous half year.

- **Final report** – should be submitted no later than 6 months after project completion, i.e. May 1st 2017.

Annexes:

Annex 1: Logical Frameworks

Annex 2: Work plans

Annex 3: Budget

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

WP 1 Climate-smart agriculture and environmental management (CSAEM)

IMPACT		Increased capacity of KNUST staff to effectively conduct and disseminate research in the thematic areas	
1.1 OUTCOME		By 2016, KNUST will be implementing CSAEM research prioritization and quality monitoring, systems that guide staff and students' identification of research problems, projects and curriculum revision	
Outcome indicator		- List of approved CSAEM prioritized research needs - Systematic approaches and/or procedures for monitoring research progress in CSAEM - CSAEM-related PhD curriculum revised	
Baseline	Year	2014	Fragmented policies on curriculum revision, monitoring of research progress and quality assurance in CSAEM
Target	Year	2016	- Two CSAEM research prioritisation and quality monitoring systems - Two sets of procedures for monitoring research progress available to staff and students 50% of CSAEM research processes adhere to prioritization and monitoring guidelines
1.1.1 Output		By 2016, KNUST staff are actively involved in the joint preparation of CSAEM research problem identification, designing pilot studies, proposal development, scientific writing and communication of research results to non-academic stakeholders	
Output indicators		**Output Indicators** # of research concepts notes on researchable on prioritized CSAEM problems # of proposals jointly developed from the concepts notes submitted to external funding agencies # of staff that participate in entire training program on research processes (research problem identification, design in pilot studies, proposal development , and scientific writing, communication of research results to non-academic stakeholders)	
Baseline	Year	2014	2 KNUST staff with adequate skills and capacity for research development in CSAEM 4 of research concept notes in CSAEM research prepared by 2016 2 CSAEM research proposals from KNUST in collaboration with Danish partners developed annually 2 manuscripts developed and submitted in 2014
Target	Year	2016	20 KNUST staff (with at least 25% women) adequately skilled and actively involved in proposal development in CSAEM concepts 4 research concept notes developed annually on CSAEM research 4 KNUST-led CSAEM research proposals developed and submitted by 2016 4 manuscripts in CSAEM related subjects submitted

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

1.1.2.Output		By 2016, a PhD Program in Environmental Science, Policy and Management is developed and advertised for students' enrolment; the existing PhD Soil Science program revised to reflect current research needs in CSAEM	
Output indicators		**Output Indicators** • # of new PhD programs started • # of PhD programs revised to reflect current needs in CSAEM research	
Baseline	Year	2014	• No PhD program in Environmental Science, Policy and Management exists at KNUST • The existing PhD Program in Soil Science at KNUST is weak, do not address current research needs CSAEM
Target	Year	2016	• One PhD programme in Environmental Science Policy and Management developed and advertised for students' enrolment • 10 students enrolled in PhD in Environmental Science Policy and Management programme to begin 2016/2017 academic year • The PhD in Soil Science revised to include 2 new courses that reflect current needs in CSAEM research

WP 2 Entrepreneurship and job creation

2.1 OUTCOME		By 2016, KNUST staff demonstrate skills to establish and maintain academia-industry linkagesand a database system to support the process in place	
Outcome indicator		• # of teaching and research programs that focus on entrepreneurship developed and ready for approval by Academic Board • # of academia-industry linkages providing input to PhD curriculum • Operational alumni and consultative partnership database	
Baseline	Year	2014	No teaching and research programs that focus on entrepreneurship at present No tested academia-industry curriculum development models No effective alumni and consultative partnership tracking system in place
Target	Year	2016	Two teaching and research programmes focused on entrepreneurship jointly developed by KNUST and Industry Academia-industry partnerships have contributed to the development of two PhD curricula Systematic tracking of alumni and consultative partnerships
2.1.1 Output		By 2016, 15 KNUST staff (with at least 25% women) have improved their competences in proposal development on issues in growth and employment areas.	
Output indicator		**Output Indicators** • # of staff with improved skills and competencies in research proposal development with industry • # of concept notes developed • # of pilot studies carried out • # proposals for full external funding submitted	

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

Baseline	Year	2014	No formal training workshops on proposal development with industry organized at KNUST No concepts jointly developed by KNUST and industry No pilot studies jointly carried out by KNUST and Industry No proposals jointly developed by KNUST and Industry for external funding
Target	Year	2016	• Two workshops on proposal development organized to train KNUST and Industry staff • 20 KNUST and Industry staff (with 25% women) have skills in proposal development • 3 concept notes developed • 1 pilot study jointly carried out • 1 proposal jointly developed by KNUST and Industry for external funding
2.1.2 Output			By 2016, PhD curriculum developed and approved in 2 faculties for enhanced entrepreneurship teaching and research.
Output indicator			**Output Indicators** • # of PhD curricula developed and ready for accreditation • # of students applying to enrol in the PhD programs • # of industry staff appointed as Adjunct Professors
Baseline	Year	2014	Industry based stakeholder inputs into PhD curriculum development is less than 10 percent
Target	Year	2016	KNUST has PhD program in Business School and College of Agriculture and Natural Resources with at least 30% industry based inputs .
2.1.3. Output			• Database on KNUST Alumni and Consultative Partnerships with industry established
Output indicators			**Output Indicators** • # of Alumni and Consultative Partnership database developed and pretested # of Industry representatives serve on Advisory Boards
Baseline	Year	2014	• • Noindustry representatives serve on Advisory Boards of Alumni and Consultative Partnerships . • No Alumni and Consultative Partnership database • No staff with skills in database administration
Target	Year	2016	• One Alumni and Consultative Partnership database developed and pretested • Two Industry representatives serve on Advisory Board of Alumni and Consultative Partnerships . • One staff has completed hands-on training and in place as database manager • 10 staff skilled in using the database

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

WP 3 Health-Care Delivery Systems (HDS)

3.1 OUTCOME		By 2016, KNUST staff demonstrate confidence and higher productivity in HDS research	
Outcome indicator		3 research concepts and proposals on priority (eg., antibiotic and antimalarial drug resistance; drug quality and drug use; water and sanitation) sub-themes developed and submitted to external funding agencies - Number of manuscripts sub-theme areas submitted by KNUST staff involved in HDS research in to peer-reviewed journals - Number staff with PhDs	
Baseline	Year	2014	2 HDS research proposals in sub-themes areas 2 manuscripts from KNUST completed
Target	Year	2016	5 HDS research manuscripts on priority sub-themes submitted for journal publication by KNUST staff 4 HDS research proposals developed and submitted for external funding.
3.1.1 Output		1 more staff at CoHS is upgrading to PhD level and conducting high quality research and generating new knowledge for teaching at undergraduate level	
Output indicator		**Output Indicator** # of staff registered for PhD study from CoHS # of Progress academic reports submitted	
Baseline	Year	2014	1 staff registered for PhD study from CoHS supported by DANIDA
Target	Year	2016	1 staff registered for PhD study from CoHS - Two biannual PhD academic reports submitted to CoHS

3.1.2 Output		By 2016, KNUST staff are actively involved in the joint preparation of HDS research problem identification, designing pilot studies, proposal development, scientific writing and communication of research results to non-academic stakeholders	
Output indicators		# of research concepts notes on researchable on prioritized HDS problems # of proposals jointly developed from the concepts notes submitted to external funding agencies # of staff that participate in entire training program on research processes (research problem identification, design in pilot studies, proposal development , and scientific writing, communication of research results to non-academic stakeholders)	
Baseline	Year	2014	5 KNUST staff ever completed training in the entire research process 4 research concept notes prepared in 3 HDS research proposals from KNUST developed
Target	Year	2016	15 KNUST staff adequately skilled and actively involved in HDS proposal development as reflected in a survey among staff 5 research concept notes developed e.g., antibiotic and antimalarial drug resistance; drug quality and drug use; water and sanitation) interventions 2 KNUST HDS research proposals in eg., antibiotic and antimalarial drug resistance; drug quality and drug use; water and sanitation) interventions developed and submitted

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

WP 4: University-wide services, facilities and procedures supporting research

4.1 OUTCOME			By 2016, KNUST provides effective and timely grant management services in designated units and ensures improved transparency in grant management, and demonstrates timely delivery of project financial reports
Outcome indicator			- Regular formalized quality checking demonstrates effective grant administration and timely delivery of externally funded projects. - No. of staff researchers, administrative and finance staff who understand the grant administrative and finance systems and can effectively provide services to other staff # of fully operational grants administrative and financial systems and services in place at designated units
Baseline	Year	2014	- Two Grants administrative services in place (one at OGR and one at College of Health Sciences) - Only a basic grant financial management system in place at the office of Grants and Research and the Colleges - Limited transparency in grant management - Quality assurance in grant management and delivery absent
Target	Year	Beyond 2016	- Delays in preparation and submission of narrative and financial reports to Donor Agencies reduced by 50 percent - KNUST motivated to make further investment in grant management systems for the remaining Colleges (CASS, CAP, CoS) - Questionnaire survey confirms increased staff confidence in offices offering grant administration and financial management services - Course participant survey shows researchers have increased confidence in financial aspects of the research process
4.1.1 Output			Highly transparent, upgraded grant management system installed and in operation at OGR and CoHS and new systems in place in 2 additional Colleges (CANR and CoE)
Output indicator			# of software packages for grant administration and financial management accessible to the designated units (OGR and six Colleges) # of staff accessing grant administration and financial management services # of staff satisfied with the grant administration and financial management services provided by the Units # of staff able to independently use grant management software packages # of staff who know how to prepare vouchers and disbursement requests
Baseline	Year	2014	- No standard Grant administration and financial management software packages in use - One sufficiently trained staff in grant administration and financial management - No PhD student confidently access grant administration and financial management services from established offices

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

Target	Year	2016	1 Central and 3 College offices equipped with software and operational 14 admin, 14 accountants, 40 researchers able to perform grant management properly - Over 100 research staff and PhD students access grant administration and financial management services from the Units
Baseline	Year	2014	No staff skilled in grant management
Target	Year	2016	14 admin, 14 accountants, 40 researchers trained in grant management
4.2 OUTCOME			By 2016, users of KNUST Central Library and Central Laboratory experience higher quality and efficiency of facilities and services
Outcome indicator			- User surveys demonstrates an increase in customer satisfaction with library services - User surveys demonstrates an increase in customer satisfaction with laboratory services # staff experiencing reduction in service delivery time when accessing library services
Baseline	Year	2014	46% Library use satisfaction - Lab yet to be opened for use
Target	Year	2016	75 % library use satisfaction 75 '% laboratory use satisfaction

4.2.1 Output			By 2016, increased numbers of Central Library users have easy access to research publications and high impact journals
Output indicators			# of online database accessible to library users # of high impact journals and research publications accessible to library users # of available access points
Baseline	Year	2014	5 online database accessible to library users 10 of high impact journals and research publications accessible to library users
Target	Year	2016	50% increase in online databases accessible to library users 20 % more high impact journals and research publications accessible to library users
4.2.2 Output			By 2016, KNUST Central Laboratory has guidelines in COSHH operationalized and available for staff and student users
Output indicator			# of SOPs and protocols in place # of laboratory staff skilled in COSHH # of users trained in COSHH
Baseline	Year	2014	4 SOPs and protocols in place, 1 laboratory staff skilled in COSHH - No users trained in COSHH
Target	Year	2016	4 additional SOPs and protocols 20 more staff skilled in COSHH 40 users skilled in COSHH
4.3 OUTCOME			By 2016, KNUST has enhanced quality of PhD supervision, QA processes and supervisor-students relations
Outcome indicators			Supervisors and PhD students begin to appreciate improved monitoring and evaluation the PhD admission, research and graduation processes

Annex 1: LOGICAL FRAMEWORK   BSU ll – KNUST – DA Partnership

			• # of External Examiners and moderators satisfied with the PhD research process • Increase in number of students submitting plans to complete programmes within stipulated time frames •
Baseline	Year	2014	• 20 of Internal and External Examiners and moderators expressing improvements in the PhD research process • 5 percent annual increase in students enrolling for PhD programmes at KNUST • 10 percent of students submitting plans to complete programmes within stipulated time frames • 2 existing PhD research process policies and guidelines
Target	Year	2016	• 40 Internal and External Examiners and moderators expressing improvements in the PhD research process • 10 percent annual increase in students enrolling for PhD programmes at KNUST • 25 percent of students submitting plans to complete programmes within stipulated time frames • 6 existing PhD research process policies and guidelines

4.3.1 Output			Improved skills in PhD research supervision and new PhD research and QA approach in use
Output indicator			• # of electronic systems in place for tracking PhD supervision and research progress • Proportion (%) of PhD students understand their responsibilities in the PhD process • Proportion (%) of PhD supervisors mentored and do appreciate their responsibilities of the PhD process • # of PhD process guidelines and policies (admission, required courses, thesis preparation, examinations, publication/communication of research results) • # of guidelines revised • # of new guidelines developed
Baseline	Year	2014	• No electronic systems in place for tracking PhD supervision and research progress • 2 per cent of PhD students understand their responsibilities in the PhD process • 5 per cent of PhD supervisors mentored and do appreciate their responsibilities of the PhD process • 2 PhD process guidelines and policies (admission, required courses, thesis preparation, examinations, publication/communication of research results) • Currently 2 types of published PhD guidelines on admission process publication of students research data
Target	Year	2016	• One functional electronic system in place for tracking PhD supervision and research progress • 50 per cent of PhD students understand their responsibilities in the PhD process • 80 per cent of PhD supervisors mentored and do appreciate their responsibilities of the PhD process

			• 5 PhD process guidelines and policies (admission, required courses, thesis preparation, examinations, publication/communication of research results) • 4 new PhD guidelines developed

4.3.2 Output		University-wide PhD courses	
Output indicator		• # of new thematic PhD courses developed and ready for implementation • # of new PhD courses successfully conducted and evaluated	
Baseline	Year	2014	• No complete university-wide overview of PhD-courses available • No university-wide formalizing training and training materials on PBL available • Sporadic training on quantitative and qualitative methods • No formalized training on academic writing for PhD students
Target	Year	2016	• Complete list of PhD-courses available and used as guidance for choosing mandatory courses • One formal training course on PBL approaches operational and ready for implementation by KNUST faculty as a university-wide, generic course • One formal PhD-course on quantitative and qualitative research methods operational and implemented by KNUST faculty • One formal PhD-course on academic writing operational and implemented by KNUST faculty

Risks	• Low motivation and commitment from participating staff: • Competition from other programs: • Government research support and interference: • Age skewedness at the university (gap between junior and retiring members of academic staff) • Delays in timely monitoring and reporting**:** •