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Sida Review

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Enhancing Research Capacity at Makerere University, Uganda through collaboration with Swedish Universities, 2000–2008

Past Experiences and Future Direction

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Acronyms

EDCTP	The European and Developing Countries Clinical Trials Partnership
ET	Evaluation Team
Danida	Danish International Development Agency
DSS	Demographic Surveillance Site
DICTS	Directorate for Information and Communication Technology Support
GMD	Gender Mainstreaming Division
IUCEA	International University Council of East Africa
MSI	Millennium Science Initiative
MISR	Makerere Institute for Social Research
MoFPED	Ministry of Finance, Planning and Economic Development
MUHAS	Muhimbili University of Health and Allied Sciences
MUSPH	Makerere University School of Public Health
NCHE	National Council of Higher Education
UNCST	Uganda National Council for Science and Technology
NUFFIC	Netherlands Organization for International Cooperation in Higher Education
NUFU	The Norwegian Program for Development, Research and Education
RUFORUM	The Regional Universities Forum for Capacity Building in Agriculture
SGS	School of Graduate Studies
Sida	Swedish International Development Cooperation Agency
WB	World Bank

Executive Summary

The purpose of this evaluation has been to analyze and assess the bilateral research cooperation support to Makerere University, Uganda during the period 2000–2008. The focus has been the future direction and management of the support to research cooperation in Uganda, and the evaluation is intended for use as both an input to the assessment of continued Sida bilateral research cooperation support to Uganda 2010–2014 and as a contribution to lessons learned for Sida bilateral research support in general.

Makerere University has advanced in research capacity and transformed the research environment on campus since 2000 using external funding to which Sida contributed generously. The achievements are remarkable given major deficits in central administrative functions to support research and research education. Makerere University scholarships funded by Sida covered tuition, fees, and research costs for approximately one quarter of those 600 students registered in doctoral programs at Makerere, contributing significantly to a critical mass of researchers who influence the environment and culture campus-wide compared to ten years ago.

The most impressive changes since 2000, in research infrastructure, have propelled Makerere into the global research community. Information and computing technology built from the ground up, and entry of the library into the electronic age, link every element of the campus to global collaborators, resources, and audiences. New laboratories and equipment and a new Demographic Surveillance Site enable researchers to work effectively in Uganda while attracting collaborators from other parts of the world. Emergence of research themes and teams producing work highly relevant to reducing poverty and hastening development, increasing openness among researchers and commitment to continuing research as a regular feature of university life, more collaboration on manuscripts and grant-seeking, active participation in international networks, journal sponsorship and editorial responsibility, recognition in the form of growing numbers of ISI-listed publications, Millenium Science Initiative Awards, and other research prizes, and significant contributions to policy (local, national, and international as set out Sections 5.3, 5.10 and detailed in Appendix F-H) characterize the new research culture and environment.

Collaboration with Swedish University colleagues markedly enhanced supervision, publication in the science disciplines, and preparation of a new generation of research mentors for growing numbers of PhD and Master students, including increasing the proportion of women (overall, enrolment of female graduate students increased from 25% in 1990 to 46% in 2008), see section 5.1 and detailed in Appendix G-H. This alliance with Swedish researchers also encouraged Makerere University's adoption of doctoral committees, the option of published papers to meet the thesis requirement, public thesis defenses, and exclusion of supervisors from examination committees.

Less satisfactory outcomes include lack of long term strategies for building capacity by choice of projects, collaborators, and agendas for research, collaboration across disciplines, and strategies for uptake of results, including links with vital industries.

Despite the success of the program until now, there are a number of issues, many of them university-wide, and some program-wide, that need to be resolved for Makerere University to achieve its great potential for further gains in building research capacity. Deficits in university administration, financial management, and program governance plagued implementation of this program, and constitute the greatest barriers to continuing growth in research capacity, as well as to sustainability of gains. Structural problems for academic staff, including inadequate salaries, scarcity of university revenue for research, supervising graduate students without relief from teaching, service (including clinical), and other administrative duties, further burdened capacity development, output, and impacts of research.

External funds have not and cannot resolve the 'overload' dilemma for researchers or those operating the research infrastructure, but they have encouraged commitment to research, creativity, and teamwork in the face of challenging circumstances. The new Makerere University Strategic Plan 2008/09–2018/19 provides an excellent framework for continuing development of a research-driven university.

The parts of the program supported by Sida 2000–2008 that are most likely to be sustainable are those to which the university has committed funds, notably to ICT—at least for staff, equipment, and services already in place, based on University Council policy and the Master Plan. While commitment of the University to research appears in its long term strategy, it is not yet evidenced in administrative and financial reforms, nor in budgetary support from Ugandan sources; research depends almost entirely on external funds.

Recommendations for action, for further success in building research capacity, target central university administrative infrastructure to support research as well as program governance and implementation. The Evaluation Team (ET) recommends that Sida work with Makerere University in areas consistent with the University Strategic Plan. Priorities, all of which deserve urgent attention, include:

1. Driving research. As no university-wide mechanism exists to energize, oversee, and develop institution-wide expertise for optimizing research productivity, and because the program steering committee, despite ample expertise among members, has not fulfilled its oversight functions for driving research or efficient use of resources: The ET *recommends Makerere University to create a high level oversight body with authority to drive research and achieve strategic coherence, and link it to a revamped program oversight body to replace the program steering committee.*

2. Information. As lack of systematic, campus-wide management of information to inform policy and implementation of graduate education and research contributed to poor program governance and inefficient use of resources for building research capacity: The ET *recommends Makerere University to develop a unified information policy and implementation strategy at the highest level.*

3. Grant management. As central university elements of a system to support units in applying for, managing, and reporting on use of externally generated funds for research and graduate education, and for managing money and intellectual property, are scattered and inadequate: The ET *recommends Makerere University to establish mechanisms for coherent, authoritative, systematic, and transparent management of research funds and for support of researchers and research managers.*

4. Financial issues.

a. Realistic implementation of the agreements with Sida. As allocation of 'in-kind' resources for Makerere University 'undertakings' in the Agreements fell far short of those needed, seriously delaying implementation: The ET *recommends that Makerere University should budget time for all activities in agreements, including for 'in kind' or partially subsidized oversight and administrative functions to be carried out by Makerere University staff. Action plans should be developed for duties not fulfilled by any of the program partners.*

b. Performance and financial accountability. As budgets have exceeded amounts available (by 20% in 2008/09), while use of funds has been slow, reallocations not decided, implementation delayed, and advances not always accounted for within a reasonable time: The ET *recommends that Makerere University and Sida should use budgets at every level as tools for planning, forecasting, monitoring and evaluating progress, matching activities to budgets with timelines, then comparing actual expenditures to achievements, based on targets and indicators of success designated as part of the monitoring and evaluation framework. Sida use disbursements as leverage, especially for closer follow-up of advances.*

5. Enhancement and sustainability of research capacity:

a. Because research (including supervision, outputs and impact) often works best within active teams supported by university research infrastructure and connected to collaborators, venues for publication, funding sources, and end users of the results: The ET *recommends that Makerere University and Sida should allocate funds to encourage teamwork within and across disciplines, sharing of ideas in seminars, and participation in international networks, with Swedish collaborators and many others.*

b. Because engagement between Ugandan and Swedish researchers has been curtailed by lack of clarity about institutional arrangements in Sweden, late planning in Uganda, and often by lack of discussion and agreement among all parties: The ET *recommends Sida to institutionalize the collaboration among Swedish and Ugandan participants and clarify roles of Swedish institutions, Swedish coordinators, research collaborator/supervisors, status of students at Swedish universities, expectations of Makerere University staff, division of responsibilities, timelines, funds, and authority.*

c. Because a gender gap persists even after gains achieved (including unequal proportions of staff and students, grave imbalance in power): The ET *recommends Makerere University and Sida to support activities to close the gender gap, including scholarships, strategy, and policy development at the Gender Mainstreaming Division.*

d. Because resources for graduate education and for student incomes are scarce: The ET *recommends Makerere University and Sida to encourage efficiencies in graduate education to shorten completion times, including greater involvement of supervisors on proposal development, rapid institutionalization of the 'cross-cutting' PhD curriculum, tighter schedules and rewards for supervision, 'vetting' of proposals, and examination of theses.*

e. Because evidence-based monitoring and evaluation will be crucial to continuing development of research capacity for a university capable of contributing to Uganda's development and reduction of poverty: The ET *recommends Makerere University and Sida to support Quality Assurance to guide continuous monitoring and self assessment at the University, including increasing expertise in methods and engagement of researchers and administrators university-wide as an integral and essential part of the research environment.*

Acknowledgement

Many people have contributed to this evaluation. The authors wish to express gratitude to those whom we interviewed and those who completed questionnaires and data forms at Makerere University, Swedish Universities and Sida, including PhD-students, collaborators, senior researchers, coordinators, leadership and administrators, representatives of other donor organizations, and of other research programs following other models of graduate education. Without the valuable contributions from everyone, this evaluation would not have been possible.

Limitations to the study

Short notice about a change of schedule for this final evaluation constituted the primary limitation to the analysis. Instead of the previously scheduled completion date late in 2009, Sida requested acceleration from autumn to spring 2009, with a site visit in February–March instead of September. As a result, the Evaluation Team (ET) was not able to develop questionnaires, perform surveys, or collect data prior the site visit, nor to seek perceptions from Makerere participants about the survey and interview results from Sweden during the Makerere site visit. Members of the ET were not able to conduct the site visit simultaneously, given prior commitments. As the Terms of Reference were finalized late in the process of the evaluation, and data arrived throughout the period of analysis and drafting, the ET has linked all elements of the evaluation with the Questions for Evaluation in the Terms of Reference as a cross-checking exercise. Other limitations for the final evaluation include the limited baseline data, incomplete information about external grants and contracts at the University, incomplete lists of and contact information for participants (most importantly email addresses), as well as lack of data about activities and outputs of Sida-funded graduate students and senior researcher/supervisors.

1 Introduction

Support from Sida started at Makerere University in 2000 for collaboration with Swedish universities to build research capacity in Uganda. In 2005, Sida arranged for an independent final evaluation of the program covering the period 2000–2008 to be carried out during 2009, resulting in this report.

The purpose of this evaluation is to analyze and assess the bilateral research cooperation support to Makerere University, Uganda in the relation to the overall goal of Sida bilateral university support: to strengthen the capacity to develop methods to plan, conduct, and use research for poverty alleviation in Uganda, through creating conducive research environments for research and research training.
The focus of this evaluation is the future direction and management of the support to research cooperation in Uganda, and the evaluation is intended for use as both an input to the assessment of continued Sida bilateral research cooperation support to Uganda 2010–2014 and as a contribution to lessons learned for Sida bilateral research support in general.

Extensive background data that form the basis of this report can be found at www.sida.se/publications. Search article no. SIDA61263en.

The report begins with a brief description of the program (Section 2), methods (Section 3), and, as context for assessing the Sida-related contributions, an overview of research approaches, experiences, and gains across the university over the past decade (Section 4). Two sections of findings follow, first about all aspects of research capacity, including graduate education (Section 5); then findings and conclusions on administrative issues of research and graduate studies (Section 6). Section 7 contains conclusions about the change in research capacity at Makerere University based on all evidence in previous sections of the report. Section 8 contains more broadly applicable lessons, and Section 9 specifies recommendations for action.

2 Research Collaboration: Makerere University, Swedish universities, and Sida, 2000–2008

In 2000, the Swedish International Development Cooperation Agency (Sida) selected Makerere University, Uganda's national university, as the site of support for "sustainable research capacity" based on a "coherent agenda for research and research training" to facilitate a strategic transformation towards "…a vibrant, internationally competitive, research university".[1]

Sida signed three Agreements in 2000 for preparatory activities (totaling SEK 1,720,500)[2], and two agreements for the Pilot Phase (totaling SEK 25,000,000) for the period Sept 2000 to Dec 31 2001. Subsequently Sida signed two Agreements: One for Phase I with Uganda's Ministry of Finance, Planning and Economic Development (MoFPED) (1 Jan 2002 to 31 Dec 2004, extended to June 2005) for SEK 96,610,000; and the second for Phase II, a General agreement with the MoFPED and a Specific agreement with Makerere University (1 July 2005 to 30 June 2009, extended to 31 Dec 2009) for SEK

[1] All quoted material in this section is drawn from Sida documents, most recently the Terms of Reference for this Final Evaluation. See Appendix 1.

[2] The Pilot Phase was preceded by three agreements: 1)ICT Workshop 19/20 April 2000, SEK 170,500; 2) Support for preparation of research activities in 2000, SEK 350,000; and 3) Development of IT-policy and IT-plan in 2000, SEK 1,200,000. These totaled SEK 1,720,500 or approximately US$ 172,000. During the Pilot Phase, Sida signed: 1) Pre-program Agreement (1 September 2000 to 31 December 2001) for SEK 15,000,000 with an amendment (27 April 2001) for SEK 10,000,000. These totaled SEK 25,000,000 for the Pilot Phase.

181,000,000. Actual disbursements to Makerere University were less than the total amounts in the agreements (Appendix 3), as funds were also disbursed directly to collaborating institutions in Sweden or elsewhere. The total amount disbursed from Sida to Makerere University, Sept 2000 through Dec 2008, amounted to SEK 168,316,496 (excluding interest), equivalent to USD $21,368,658, in addition USD $ 12,777 was obtained in Uganda as interest on SGS's bank accounts for Sida funds[3] After completion of the evaluation additional disbursements were transferred to Makerere University[4] amounting to SEK 31,304,511 equivalent to USD $3,974,272. These disbursements are included in the table in Appendix 3.

Sida posited that: "Well-trained researchers can pose and pursue questions relevant for poverty reduction, national development in many sectors of the society, and enhanced standard of living." Thus Sida supported existing structures, and encouraged development of new ones, including a Demographic Surveillance Site, to create "…an environment that is conductive for research training and in so doing assist to identify and improve upon structures that hinder university research." The program was built around international research collaboration, principally with Swedish universities, with the education emphasis on PhDs to be awarded at Makerere University. Most commonly, both Swedish and Ugandan PhD holders were incorporated as supervisors for each of the PhD students. The Swedish counterparts were beside of being involved as supervisor for the PhD students, also supposed to train the Ugandan supervisors in relations to supervision. The funds support activities in the SGS (as coordinating unit), at six academic units, the Faculties of Agriculture, Medicine, Social Sciences, and Technology, the Makerere University School of Public Health, the Department of Mass Communication in the Faculty of Arts, and at two key sources of research infrastructure, the Directorate of Information and Computing Technology (DICTS, a new unit created in 2000), and the library system. Sida also supported graduate education and leadership for women through the Gender Mainstreaming Division under the Academic Registrar. Counterparts at Swedish universities participated as supervisors, researchers, and program coordinators. Sida characterized the support to individual research projects within faculty based research and research training programs as a tool to achieve the overall goal of 'sustainable research capacity'. This collaboration began with a theme to enhance the impact of the research "Lake Victoria and other water resources"; and with a slogan: "to support the supervisor to supervise".

3 Methods

3.1 Approach

Sida called for a formative, participatory evaluation, based on both the prior experience of members of the Evaluation Team (ET) from monitoring activities which started in 2003[5] and on a broader scope of inquiry for this Final Evaluation. The ET conferred with Sida and with Makerere University colleagues about methods, data sources, priorities, and scheduling parting the course of the analytic process leading to this report.

[3] The amounts in the agreements cover funds for: 1) Makerere University (Uganda for Uganda), 2) Swedish collaborating institutions and Swedish coordinators (Sweden for Sweden), 3) Swedish Institute (Sweden for Uganda), and 4) Regional Collaboration. Actual disbursements only cover funds for Makerere University (Uganda for Uganda) and Regional Collaboration.

[4] Disbursements made after the completion of the evaluation, but within the Phase II agreement: 16/3/2010 SEK 11,422,080 and on 21/8/2010 SEK 19,882,431 = SEK 31,304,511.

[5] In 2003 Authorized Public Accountant J. Thorvaldsson lead the audit group from Ernst & Young AB that performed the"Audit of the Swedish support to the University of Makerere" and P. Freeman and E. Johansson started activities as Research Monitors in 2004.

3.2 Sources of Information and Methods

The ET sought information from every participating unit, from every type of participant at Makerere University, and at collaborating universities in Sweden, and from other stakeholders, as well as from Sida. The ET gathered and *reviewed documentation*. Members reviewed all issues that emerged in previous monitoring reports relevant to achievements, persistent problems, and new challenges and opportunities, and all questions raised by Sida in the Terms of Reference (Appendix 1).

Sida provided some baseline data (in original Makerere University proposals, 1999–2000) for comparison to 2007/08 data held by the School of Graduate Studies (SGS), the Planning and Development Department (PDD), and the Finance Department under the University Bursar. The ET collaborated with Makerere University colleagues to conduct an *online survey* of all participating Ugandan students (Masters and PhD), supervisors, senior researchers, and the ET conducted its own online survey of all collaborating Swedish supervisor/senior researchers. For analysis of finances and financial management the ET reviewed data from Specific Agreements, Audit reports (Sept 2000 to June 2008), financial statements, Agreed Minutes from Annual Planning Meetings and Annual Review Meetings, Action Plans, reports from workshops, and all relevant manuals and guidelines and minutes from Steering Committee meetings. J. Thorvaldsson also conducted interviews with relevant staff.

For gathering experiences and insights about graduate education (from Masters and PhD students, from those having completed PhD thesis defenses, and from supervisors and senior researchers), the ET conducted *semi-structured group interviews*. To learn about gender differences, some groups were comprised entirely of females or males, some were mixed. For learning about the Steering Committee as a governance group, and its interactions with the SGS as coordinating unit, the ET interviewed two groups of Steering Committee members (from service units and academic units) and one group of financial management/accounting personnel.

With intent to compare the Sida approach to that of other sources of research support, we visited central offices managing grants and contracts (SGS, PDD, Grants and Contracts office of Finance Department), some units that manage their own support (College of Health Sciences, Faculty of ICT, School of Public Health, MISR, NUFU, RUFORUM), and talked to program officers at the Carnegie Corporation of New York and the Norwegian Embassy. The ET also *interviewed* all Swedish coordinators. For both verifiable information and insights, the ET interviewed students, supervisors, senior researchers, support personnel, and administrators who have participated in this collaboration, including program coordinators, deans, directors, and other senior administrators.

The ET used a *new method for capturing examples of research process, outputs, and impact,* as a basis for accumulating data on gains to research capacity and environment in each of the academic units. To understand better the process of using Sida funds to support formation and strengthening of research groups, the nature of leadership and agenda-setting, and the contribution of Swedish collaborators, we chose one of the most active groups and traced its history from inception through 2008.

The ET also met with the Steering Committee, senior staff of the SGS, and others in an *interim feedback session,* as well as with individuals to elicit feedback on its initial findings and potential recommendations. A *draft report for discussion* was distributed to all Swedish and Ugandan coordinators and within Sida (by posting on a website). Two feedback sessions were held on the draft report, one hosted at Sida on 20 May 2009, and one at Makerere University on 2 June 2009. Comments were incorporated in the report after each of these sessions.

4 Research and Research Education at Makerere University

Makerere University is one of the oldest and most prestigious universities in Africa, having started as a technical school in 1922. Today, Makerere University has twenty-two faculties/institutes/schools, about 30,000 undergraduates and 3,000 postgraduate students, and offers day, evening, and external study programs. Makerere University developed a new Strategic Plan 2008/09–2018/19, in which it set targets for becoming the leading university in Africa by 2018, and the leading university in Uganda for PhD-education, research and innovations.

4.1 Approaches to Research Support at Makerere University

Makerere University started to move away from its historically "donor-driven" agenda for research in 2000, when deans, directors and the VC discussed ideas about the composition of the Sida supported program. The Visitation Committee Report (2007) added impetus to this effort, the Makerere University Strategic Plan elaborates the priorities, and the Uganda National Council for Science and Technology was to issue a national plan in April 2009. Still, most of the support for research at Makerere comes from sources external to Uganda,[6] although from 2003/04 the university committed some support, although small and inconsistent, to research from "Internally Generated Funds" and student fees.

Other research funders appear to differ from Sida in several respects: they support specific research projects and scholarships to individuals rather than "institutional capacity building", and sometimes construction of buildings. The European & Developing Countries Clinical Trials Partnership (EDCTP) now collaborates with Sida to support a University Administrative reform. Each funder has its own way of collaborating on research project design and selection of projects and students for scholarships. One contrasting model is that operated by NUFU—in which each proposal is prepared jointly by researchers in Uganda and in Norway, then ranked for priority in both countries.

The SGS had internally generated funds, which Sida and Carnegie Corporation contributed to, for enhancing research management, including administration of competitive grants,[7] for institutional review for research involving human subjects, and for campus-wide training in research methods, writing of research proposals and scholarly articles. It was Carnegie Corporation that insisted on use of the logic model framework for planning and reporting. Sida, Carnegie Corporation, and the Norwegian Embassy all base their support on the university Strategic Plan, and oversight authority rests with Steering Committees, with some overlap in membership across the Steering Committees. Some funds are managed centrally,[8] some by units.[9]

4.2 Models of PhD Education on Campus

Makerere University has followed the British model of "PhD by research". More recently several units adopted course-based PhD curricula, including the Faculties of Economics and Management, Agriculture (for plant breeding), East African School of Library and Information Science, Computing and Information Technology, and the Institute of Higher Education. Sida funding has facilitated develop-

[6] Millenium Science Initiative Awards granted through the Uganda National Council for Science and Technology depend on a loan to Uganda through the World Bank.

[7] SGS currently administers competitive grants for funds from Carnegie Corporation, Norwegian Embassy, Sida, and the University.

[8] At Planning and Development Department (Carnegie Corporation and Norwegian Embassy), School of Graduate Studies (Sida, now also assuming more responsibility for Carnegie Corporation).

[9] Faculties of Agriculture, Computing and Informational Technology, Medicine, Law, School of Public Health, MISR, Gender Mainstreaming Division, and others.

ment of an alternative of "cross cutting courses", which, if approved, could become a relatively efficient hybrid, drawing on teaching resources across faculties, open to all PhD students.

4.3 Centralized Functions: Makerere University Graduate or Research Education

As of academic year 2008/09, all graduate program applications moved from paper to entirely online, and from flexible to fixed deadlines. The new system will ease comparison of numbers of applicants over time; 2008/09 data were about to be compiled at the time of the ET site visit. Students admitted to graduate programs must pay to register, and many cannot, or at least not each term. Thus, the number actually registered rises and falls, and seems difficult to track. Almost all Master students pay privately; a greater proportion of PhD students have scholarships, some cover full costs, others only a portion. Many Ugandan PhD students sponsored by funders other than Sida get stipends to defray living costs for study while at home, in addition to living costs abroad.[10] University policy stipulates that 35% of graduate student tuition is to be repatriated to units to compensate supervisors, and agreement is widespread that these funds are unacceptably meager.[11] These amounts are all the more important given that university salaries are exceptionally low, even by regional standards.[12]

Informants estimated PhD completion times to average 4–6 years (with a mean of 4.5–5 years), shorter for men and those in "sandwich" programs.[13] The SGS handles the application process, admissions, registration, oversees the vetting of most Masters and all PhD theses; oversees some elements of supervision, notably the addition of doctoral committees, manages competitive research funds, and certifies who will graduate. Whether all of these functions will remain at SGS, or some delegated to the new colleges,[14] remains unclear.

5 Research Capacity: the Collaboration of Makerere University and Swedish Researchers with Support from Sida

5.1 A Decade of Change

Although Makerere University collects, stores, analyzes, and uses institutional data to a very limited degree, we did find a few sources that allow for some comparisons over ten years (1997/98–2007/08) nearly coincident with this collaboration (2000–2008).

[10] Stipends are available to students supported by Danida, Gates Foundation, NUFFIC, NUFU, Rockefeller Foundation, the US National Institutes of Health Training Grants, possibly others.

[11] The amounts mentioned by different informants per Masters or PhD student varied, possibly because tuition repatriated to units is disbursed among different numbers of supervisors working individually, jointly, or most recently as members of doctoral committees. All of the amounts are very low, from under $100 per student to several hundred US dollars for years of supervision. The only exception we heard was an experiment with incentive payments of $2500 by Rockefeller Foundation at completion of a PhD.

[12] The highest salaries, based on Ugandan-government determined rates, amount to approximately $1000 per month for Full Professors. An ongoing campaign for "living wage", including strikes, has produced some increments (2004, 2006; 2010 promised). Both Kenya and Tanzania have higher salaries at the national universities than at Makerere, even when adjusted for their higher GDPs. Whether raises will be available to accompany Makerere promotions seems unclear.

[13] Sandwich PhD programs are those where the students do part of their work in their home developing countries, and part at a host country institution in an industrial country. At Makerere students supported by the Netherlands (in the Faculty of ICT), by Norway (in Forestry) have this arrangement, as do Sida funded students.

[14] The College of Health Sciences is approved and in a two year planning period (since October 2008), a university policy calls for formation of colleges to subsume all other now freestanding academic units by 2010.

The number of PhD holders[15] among the staff at Makerere University has increased more than three-fold over the ten-year period from 1998/1999 to 2008/2009: from 225 to 779. The number of staff pursuing PhD education abroad is virtually the same today as 10 years ago. However, in addition to the number of staff on study leave abroad at the end point, more than 50 staff was on study leave at Makerere; this was probably not the case 10 years ago. The percentage of staff studying for doctoral degrees is similar to ten years ago, but absolute numbers have increased substantially, and about one third now study at Makerere University, suggesting not only gains in numbers of those pursuing higher degrees, but also in the capacity of the institution to offer more opportunities for advanced study. Makerere graduated its largest group ever of PhDs in January 2009: 30 PhDs, 25 Makerere University and 5 joint degrees. Five were women.

Although the number of PhD holders has increased very substantially in the last ten years, the number of academic staff in the higher ranks has increased very little. Few of the highest academic positions had been filled ten years ago, and few continue to be filled today, especially by women. The relative numbers of females in academic positions at the levels of Senior Lecturer, Lecturer, and Assistant Lecturer at Makerere have increased although they remain far from equal (the percentage at the Assistant Lecturer level is most favourable to women, with 33% now, up from 19% ten years ago). Of the 43 professors, 3 are women; of 22 deans and directors, 4 are women.

Enrolment of female graduate students has increased from 26% to 37% during the last 10 years, although the numbers of female and male students are not equal. Enrolment of female undergraduates increased from 25% in 1990 to 46% in 2008; thus the pool for future women graduate students has grown more.

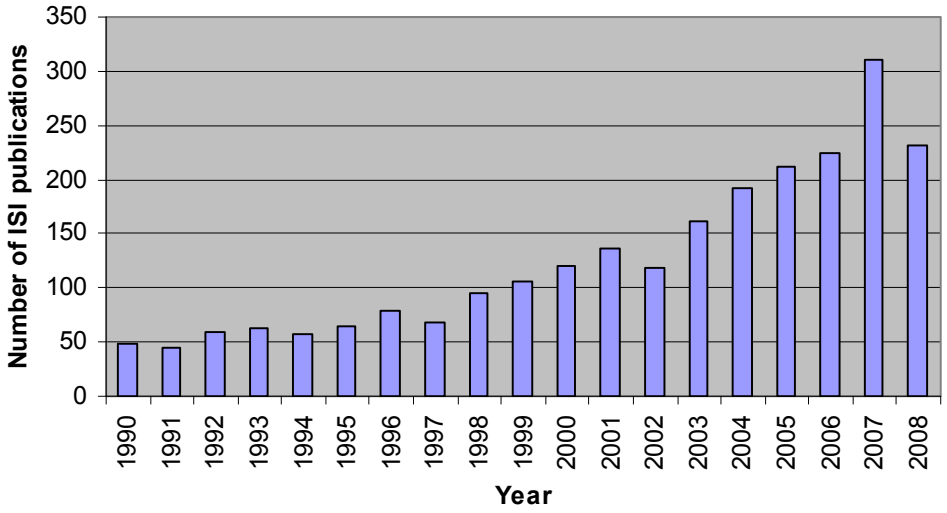
Despite full cooperation from every office we contacted in search of information on research funding, we could not find data sufficient for summarizing investments by international contributors. After our site visit, we learned that KPMG had a similar experience.[16] From 2000–2008, the largest funders of research at Makerere seemed to be Sida, the Rockefeller Foundation, Nuffic (Netherlands), and the Norwegian Embassy.

Several ways of measuring publication rates exists and a number of data bases can be used, one of the most common being ISI. We chose to use this database for counting of publications at Makerere University, although we are aware of that this database does not capture all publications, especially not from humanities and social science research areas. Increase in publication rates in ISI can be used as one measure, most likely mirroring increase also in other types of publications. The number of ISI publications has steadily increased at Makerere, with a gain of 300% from 1998 to 2008 (Figure 1). The number of ISI publications produced by authors associated with this program was low from 2001–2004 (1–7 papers each year), and increased from 2005–2008, to reach 19 ISI listed publications in 2008, including some publications in highly ranked international journals from the groups of Kironde and Peterson (in the Faculty of Medicine program). At present there is only one ranking system worldwide that includes Makerere University, ranking visibility on the web, rather than quality; in it Makerere University ranked number 32 among universities in Africa at the time of drafting this evaluation report (spring 2009). (http://www.webometrics.info/top100_continent.asp?cont=africa).

[15] We did not confirm if doctoral degrees were uniformly PhDs, as many institutions around the world grant equivalents, such as the ScD, a not uncommon equivalent granted in Canada and the United States.

[16] The 19 April 2009 KPMG report, *Capacity Assessment and Advisory Support to Makerere University in Uganda*, confirmed, saying: *"As the university does not know the amount of all grants coming to the university*, and it should collect information about all funding from donors until the Sida-Makerere University Annual Review Meeting in November 2008, or at least to the Makerere University Stakeholder Meeting in January 2009." The information was not available in March–April 2009.

Figure 1. Makerere publications in ISI journals 1990–2008 collected from http://apps.isiknowledge.com



5.2 Tracking Research Impact and Capacity Gains: A Special Exercise

The ET lacked area expertise and time to independently evaluate the substance of the research in each unit and discipline. Thus we adapted a method, developed recently at the London School of Hygiene and Tropical Medicine[17], to portray the portfolio of research in certain research environments.

While the method is most instructive if applied to a single research project at a time, we stretched it to look at achievements by selected Makerere University researchers and groups within the program funded by Sida, also adding a new component, relating research projects to associated gains in institutional research capacity, where our key informants had sufficient information. The full set of impact summaries is available in Appendix 2. See also below an example of a success story.

5.3 Findings Based on the Eleven Research Impact Summaries (See Appendix 2)

Topics evolved from observation of problems – to focus on addressing them in Uganda, for the African region, and for developing countries in other regions; some research has even broader applicability. Participants are finding growing numbers of collaborators.

[17] Kuruvilla S, Mays N, Walt G. 2007. Describing the impact of health services and policy research. J Health Services Res Policy 12:23–31.

One example of a Success Story: Pharmacology

This group responded to introduction of new drugs for malaria and HIV/AIDS for use in large numbers of patients across Uganda. They established that increasing the dose of sulphadoxine/pyrimethamine (SP) improved efficacy and maintained safety of chloroquine-SP treatment for malaria. A serious deficiency in information for clinicians led them to establish the Drug Information Service, free to clinical providers. Since 2006 they have been contributing to policy formation as members of key national policy formulation bodies. Some of this work overlaps with that of Makerere University School of Public Health. Together, the findings have directly influenced WHO/UNICEF policy to improve treatment not only of malaria, but also of pneumonia, an equally large cause of death that has long been neglected. Anticipated societal impact will be reduction in the burden of drug resistance to malaria and anti-retroviral drugs through rational drug use work with clinicians across Uganda, and increasing awareness and reporting of drug adverse events. The group is expanding services of the Information Service to include poisons.

Gains in research capacity associated with this group include:

Teaching staff. The teaching staff has grown from 4 (all men) in 2000 to 12 in 2008 (3 women, 9 men).

Supervisory capacity. Growth of PhD supervisory capacity from 2 to 4 people through training and promotions.

Research Seminars. Every Tuesday afternoon, 2–5 p.m. with attendance and enthusiasm of at least 20 participants, even if senior researchers are away.

Publications. Publication by the group has grown from none per year in 2000 to 10 per year in 2008.

Promotions. Two persons to Associate Professor.

Infrastructure. Pharmacokinetics laboratory at Makerere University – use shared.

Development of Team. Research group regularly includes senior researchers, PhD students, and Masters' students (aided by PhD students), who create the pool for future PhD candidates and academic staff.

Funding. Attracting new competitive research funds and generating bench fees for laboratory.

Collaborators. Attracting collaborators including World Health Organization, Management Sciences for Health (USA), Muhimbili University of Health and Allied Sciences, Tanzania, University of Edinburgh, UK, and University of Ghent in Belgium (partners for EU grant application Framework Program 7-Under review), and University of Capetown.

Research Award. The British Journal of Clinical Pharmacology (BJCP) awarded its prize for Best Paper in the Year 2008 by an author in training to one of the Sida-supported PhD graduates, now Associate Professor.

They are expanding sources for: mentoring of researchers who have previously had little international exposure, for widening dissemination of research findings, and for new funds. Recognition is growing based on increasing rates of publication, presentations at conferences—and on impact and uptake of research findings by national and international bodies. Participants are becoming valued members of local, national, and international networks.

Measurable gains in research capacity from 2000 to 2008 include:

- Increasing numbers of PhD teaching staff, more supervisors, academic promotions, and appointments to leadership roles (academic and professional)
- Increasing representation of women in research groups
- Notable gains in highly used elements of research infrastructure (ICT, library, laboratories, equipment) and in aspects of institutional culture (eagerness to pursue research opportunities, make more time for research and for collaboration, including on writing funding proposals, designing studies and carrying them out, analyzing results, drafting manuscripts, and strategizing)
- Increasing rates of international publication in the science disciplines
- Increasing international collaboration, including attracting international funds from more sources

- Increasing recognition in the form of research awards for 'best paper' in various categories, and Millenium Science Awards to senior researchers
- Growing teamwork and increasingly viable research groups able to incorporate master level students, and work more collectively on all aspects agendas for sustainable research.

Developing less rapidly or less impressively are:

- Publication rates outside of science disciplines
- Strategies for and implementation of the results to assure dissemination to community users
- Connections to industry for commercialization of innovations
- Attention to long term strategies for building capacity by choice of projects, collaborators, and agendas for research most likely to become sustainable while solving important problems.

5.4 Views of the Collaboration from Sweden: A Survey

A survey of Swedish supervisors and research collaborators from nine universities[18] in February–March 2009 conducted by the ET yielded a 90% response rate (58 of 64). Respondents indicated the main change to be increasing competence of Makerere's PhD students; other aspects they saw developing were research climate, competence of Ugandan supervisors, understanding of what research is, collaborations and increasing output of international research publications. They saw administration of research and PhD-education as well as transparency within the university system as having developed less well during the same period (Table 2).

Respondents viewed Ugandan PhD students positively in most respects, with Phase II students representing improvement from Phase I. They found Ugandan supervisors to have high capacity, good knowledge, and good attitudes towards research collaboration with Swedish counterparts. They found the research environment (time, salary, equipment and seminars) for both PhD students and senior researchers to be most problematic along with administration of the program in Uganda. Those two factors led to delays and lack of availability for research and supervision. Few Swedish collaborators had sufficient information on financial management at Makerere University to comment.

Respondents said the single most important factor for deciding to become involved in this program was a contact made by another Swedish researcher. As to expectations, they rated as most important: increased opportunities for collaboration, increased opportunities for developing one's own research, and interest in learning about another country and culture. They regarded the least likely outcomes to be their own promotions and more grant to pay their own salaries. Most respondents rated these main expectations to have been fulfilled. Most indicated highest satisfaction regarding collaboration with Ugandan PhD students, Swedish supervision, administration of the project in Sweden, and choice of Ugandan supervisors.

[18] Karolinska Institute, The Royal Institute of Technology (KTH), The Swedish University of Agricultural Sciences (SLU), Uppsala University, Gothenburg University, Lund University, Luleå Technical University, Örebro University and Blekinge Technical University

Table 2. Development at Makerere University. Numbers are mean values of those given to value development at Makerere University (scale 1–10). N=35–44 for each of the sub-alternatives.

Sub-alternative	Mean
Research climate at the collaborating unit	6.42abc
Competences of the PhD-students	7.20a
Competence of the Ugandan supervisors	6.40abc
Understanding of what research is	6.81ab
Environments where research can be conducted	5.85cde
Administration of research and PhD-education	5.21de
Transparency	5.00e
International research collaborations	6.66abc
Time until graduation of PhD-students	6.03bcd
International publications	6.55abc
Numbers followed by the same letter do not differ significantly from each other (LSD0.05)	

5.5 Perspectives of Swedish Coordinators: Program Results

The E T conducted interviews with six Swedish coordinators[19] involved in this collaboration. All coordinators reported having been paid sufficiently for the job as coordinator during the second half of Phase II, although all reported too little payment at the beginning of the program.
All reported an overall sense of too little involvement in research on the part of the Swedes. Some want more influence over shared research; others want their own research projects. Most find the coordinator workload to be heavy. Most listed the time consuming aspects to be administrative: plans, reports, budgets, proposals, tracking developments, email correspondence, and handling of lodging for students.

All coordinators see positive developments in the research environment, particularly in terms of infrastructure. They see much less gain in capacity to raise research questions, and in frequency of research seminars. Most found central administration to have improved, and as needing a great deal more improvement. Most rated PhD students as the best part of the program and are generally satisfied with their work. Most described the Ugandan supervisors and senior researchers as congenial collaborators and friends, with ample knowledge, but in problematic situations where unmanageable workloads and too many sorts of duties mean that supervision is seldom a high priority. With regard to the slogan "to support the supervisor to supervise", most Swedish coordinators see the newly trained staff as the promise for the future, and all agreed on the long-term aspects of building research capacity, several generations are needed to obtain a real change. Most coordinators pointed to overriding importance of opportunities for the newly trained PhDs to continue their development as the future supervisors and senior researchers.

All the coordinators reported that Phase II is working much better than Phase I. Most see Sida as helpful as an administrative body, most involved in budgeting, planning and evaluation, and 'trouble shooting', although shifts in Sida staff have been somewhat problematic. Some coordinators would prefer that the program involve more joint planning between Makerere and Swedish Universities, with Sida as a funder, not a collaborator. Some called for Sida to enforce governance rules more strictly. Most had very little insight about financial issues at Makerere, but a clear picture of the Swedish side.

Most reported that their suggestions were not taken into consideration, and decisions were taken by Makerere and by Sida without informing Swedish collaborators until decisions were final. Thus, collaborators felt they were serving Makerere rather than being truly engaged collaborators. Several want Swedish coordinators and collaborators to meet more regularly to discuss and learn from each other.

[19] Karolinska Institutet, KTH, SLU, Uppsala University, Gothenburg University, Örebro University

5.6 Verifiable Information About Makerere University Activities Supported by Sida

As the SGS had no complete set of data on all graduate students supported in some way by Sida from 2000–2008, the Steering Committee and SGS agreed to pursue a basic set of data to form the basis of this final evaluation of Phases I and II (and for other purposes). However, at the end of the evaluation period, the full data set was still not available.

5.6.1 PhD student survey

Responses from 90 of 94 students identified by SGS as 'participating in the program' provide the following insights. Overall, almost equal numbers of women and men were registered as PhD students. Male PhD students significantly outnumbered women PhD students when registered at the Faculties of Technology and Computing and Information Technology (CIT), while the opposite was true for PhD students in the 'administrative track' (from administrative rather than academic staff positions), where women predominated.

Time from provisional to full registration took about one year. Mean time from provisional registration through thesis defense was 5.5–6 years. Most of those who actually completed degree requirements (through successful thesis defense) took less time from provisional registration through completion, with a mean of 4.3 years and a range from 3 to 7 years. The longer overall mean time resulted from Phase I students who had not yet defended. Four out of a total number of seven of the students who studied at the Faculty of Agriculture had completed their PhD degree requirements at time of site visit (called 'completers' below). For the other faculties the comparable proportions are lower, approximately 20–30% (Figure 2).

Male PhD-student completers generally have higher rates of publication than females, and especially so for conference publications. The highest numbers of conference publications per PhD student are among those registered at Faculties of CIT, Medicine, and Technology. The highest number of journal publications is found among students at the Faculty of Medicine. The lowest rate of publication, and significantly so, was at the Faculty of Social Science. This may be related principally to varied publication traditions in different research disciplines. Most early completers (2005–2007) are now supervising Master and PhD students. These same early completers continued to publish papers after completing their degree requirements.

5.6.2 Master student survey

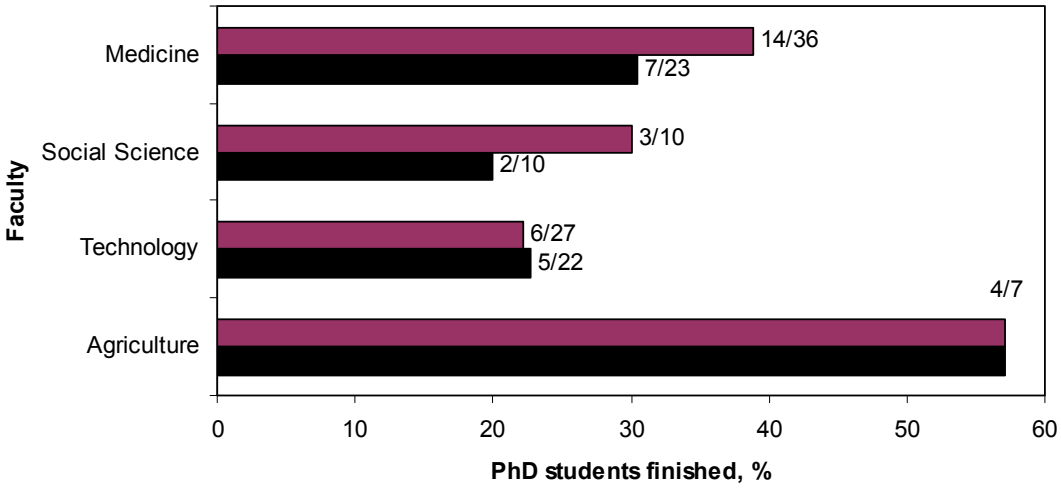
Of the 29 students (23 women, 6 men) with Makerere University scholarships funded by Sida, the majority began in 2005. Most registered through the Gender Mainstreaming Division; 15 enrolled in the Department of Gender and Women's Studies (Faculty of Social Sciences), 6 in the Faculty of Information and Computing Technology, and the rest in 6 other units: the Faculties of Agriculture, Art (Mass Communication), Economics & Management, Medicine and Science (Biochemistry) and the East African School of Library and Information Science (EASLIS). The supervisors come from a broader range of units. Fifteen students have defended their theses with a mean time to defense of 2–3 years. None listed any publications, conference proceedings, or spin offs.

5.6.3 Supervisor/Senior scientists

As of 3 June 2009, only 20 out of a total of 74 supervisors had completed the data form, despite several reminders. The response rate is too low for meaningful analysis.

Figure 2. Percentage of PhD students finished at different faculties at Makerere University participating in the program funded by Sida

Black bars=Numbers of students from various faculties are gathered from PhD-student survey (see text).
Lilac bars=Number of students from various faculties based on information from Sida.
Numbers beside bars indicate number of PhD students finished in relation to total number of funded students.



5.7 Perspectives of Graduate Students and PhD graduates ('completers')

Results of semi-structured interviews with 40 participants (from the pool of the 94 PhD students and 29 Masters students with Makerere University scholarships funded by Sida) offer a window on the graduate educational experience. The overwhelming majority are the first generation to attend University. This contrasts markedly with universities in more affluent countries where the environment is dominated by students who have grown up in households, schools, and communities where higher education is part of their cultural experience since childhood. All participants held full time academic, administrative, or professional positions at Makerere University or at Mulago hospital.

Masters' students in the 'administrative stream' (having enrolled at 30–40 years of age by design of the program) all voiced desire to advance professionally into leadership roles to improve university policy and operation, including the environment for women to thrive at all levels. Master students of the academic stream voiced the need to complete this degree before losing their contracts as Teaching Assistants (termination is automatic after six years if no Masters degree). Most had not been eligible for Sida support when this program was open only to staff in 'permanent' positions, as their teaching assistantship contracts are 'short term'. Masters' students expressed high satisfaction with their courses and exams but complained about a shortage and slow response of supervisors at Makerere. Students pointed to risks of retribution for pushing a slow supervisor: approval for scholarships, limiting access to equipment, sabotage of PhD opportunities, or of promotions.

PhD participants, even those who started in Phase II, found the process to full registration at Makerere University much too slow. All urged rapid completion of a predictable, semester schedule by SGS for 'crossing cutting' courses, as these had been useful.

Many PhD students were quite satisfied, both with their Swedish and Ugandan supervisors. Delay by over-committed Ugandan supervisors was overwhelmingly the most frequent complaint. Most expressed enthusiasm about research seminars at Makerere and in Sweden, but some expressed serious reservations about presenting their work, out of concern that colleagues could appropriate their ideas, citing little tradition of protection for intellectual property at Makerere.

Several pointed to difficulties arising from the nature of arrangements between Makerere and Swedish universities. When Makerere students are not jointly registered, they are guests to whom Swedish hosts are not permitted to offer the same level of support that is routine for those registered.

PhD student complaints about the academic program requirements were minor compared to those about the stresses of balancing study with job and family obligations, most of all contributing to family financial support. Many described significant conflict about studying away from home, especially with regard to young children, although most also reported greater productivity while away from jobs and home. Most women and men reported that they had been treated similarly for the most part in their academic program studies. There were exceptions: Master students complained that opportunities for conferences grants were offered more often to men than to women. Male doctoral students noted that in some units women were offered the opportunity to pursue PhDs or positions ahead of men, although most viewed this difference to be an institutional necessity. Women PhD students pointed to disrespect from committees with few or no women members, instances of condescension from male colleagues who had taken their degrees abroad, or of lack of support from some of the few women in senior positions.

Many pointed to very substantial gains in infrastructure, and to some infrastructure limitations: power failures, slow internet, limited journal accessibility, needs for more equipment, and uncomfortable office space. Others emphasized a lack of 'space' in groups to absorb new PhDs to share in applications for new funds and to begin supervision, saying that some senior people manipulate supervision lists to remain primary, taking on more than the approved 3 PhD and 5 Master students, while appearing to stay within those limits.

5.8 Perspectives of Supervisor/Senior Researchers

Only the Faculty of Agriculture participants had substantial engagement in research at Makerere University prior to 2000 (with funds from Rockefeller Foundation, NUFU, Carnegie Corporation, and USAID from 1993), thus time invested in research by senior staff at this faculty did not change from 2000–2008 as it did in other units. New to this Faculty, and to every unit, was the capacity building focus, including the opportunity to collaborate intensively with Swedish universities, or in most cases, with any university outside Uganda.

Supervisors highlighted differences in today's students, many of whom they say read few books and articles, instead taking content from more generic web sources, 'regurgitating', cutting and pasting to assemble papers, rather than engaging in more rigorous analysis preferable to the 'old timers'—unless guided, and pushed, by supervisors.

Supervisors were very concerned about disparities in rewards for supervision between Swedish supervisors and themselves, especially given the new guidelines for budgeting Swedish supervisor compensation per student (whether registered in Sweden or not, SEK 175,000, or about USD $22,000 per student, about twice the entire salary of a senior Ugandan supervisor).[20] However, the SEK 175 000 only covers two months of salary for a senior researcher in Sweden since also employment tax (approx. 50%) and overhead (35%, to cover rent and administrative costs) is included in this sum. The Swedish system does not allow for top-up of salaries.

These senior scientists recommend continuing international exposure for students to overcome 'inbreeding' from pursuing all one's education in one institution. Both students and senior scientists need more institutional connections at Swedish universities, not just personal ones. During visits, if the Swedish coordinator is not there or is not helpful, it is difficult even for senior scientists to make other contacts.

[20] The new Sida guidelines call for SEK 250,000 per student, 175 000 SEK for a Swedish supervisors salary, the rest to cover various costs for the student while in Sweden.

5.9 Perspectives of Academic Program Administrators

As recent updates on each participating unit appear in the 28 November 2008 Research Monitors' report, we refer readers there, and to earlier Research Monitors' reports (2004, 2006, 2007) for detail on accomplishments, persistent problems, and new challenges and opportunities as seen by academic administrators. This report only includes details that are new since the last Monitors' report and of relevance for this evaluation.

Many deans, directors, and coordinators are optimistic about the contribution to be made by the younger generation of supervisors. Most see PhD committees and non-supervisor examiners as positive. Some point out that promotion criteria do not work well for promoting teamwork and support of research groups in some disciplines, and, in general, that the university needs to create incentives for staff to take on institution-building roles. Many believe it is still difficult to substantially increase multi-discipline collaborations, as funds go to units. One pointed out that most Swedish colleagues are older, as there seem to be disincentives for younger Swedish colleagues to participate, as they seek research to rapidly advance their own careers. Building research around strategic priorities and themes of great importance to Uganda and the region will help to create groups more able to sustain themselves. Most acknowledge that the Steering Committee has not functioned well as an oversight body.

5.10 Most Significant Research Results

A number of successful research results were reported by Swedish collaborators, some of the most successful are listed below:

Environmental protection, food, and shelter
Knowledge of how to improve soil management, crop protection systems and measures, and farming systems for generating biofuel and improved water treatment.

Knowledge to take care of sewage fractions, reduce disease-causing waste, and produce energy and secure fertilizers, thereby improving health.

Understanding about re-equipping and re-building of slum areas to improve planning of settlements (includes major contributions for policy, if taken up).

Increasing knowledge about safe water and policies of other sorts that can, in the longer run, lead to beneficial changes in policy, rules and regulations.

Roads and infrastructure
Knowledge for improving the network of roads in Uganda using GIS. This knowledge can lead to more sustainable systems of highest importance to Ugandan development. GIS also help to standardize digital data for use in projects, e.g. Geological Survey in Entebbe for mining prospects.

Competence for highway engineering that is already leading to improved road quality in Uganda; this contributes directly to increasing economic competitiveness.

More effective evaluation by Ugandans of how development money for highway infrastructure should be spent, which will lead to better transport infrastructure.

Electrification
Building expertise at Makerere for biomass degassing.

Developing methods for extension of the power supply network in a financially sustainable way.

Information technology
Developing and implementing IT in secondary schools in difficult areas of the country.

On industrial opportunities from technology
Creating opportunities for Ugandan exploitation of very high quality deposits of kaolin.

On human health and safety
Developing a new community based treatment model combining treatment of malaria and pneumonia adopted by WHO and UNICEF, and by Uganda and 18 other Millenium Development Goal-priority countries as national policy.

National policy changes resulting in better treatment of malaria.

Optimization of HIV and tuberculosis treatment and co-treatment.

Mapping of Human Papiloma Virus (HPV) types in Uganda to guide vaccination programs to reduce the burden of HPV – and to prevent of cervical cancer.

Reducing violence toward pregnant women and maternal death in Uganda by decreasing a major cause, abortions.

Knowledge to reduce depression associated with war and HIV – in primary care settings.

A fully functioning DSS at Iganga-Mayuge to facilitate epidemiologic and other health research crucial for designing interventions and evaluating their effects.

Care of sexually abused female children in northern Uganda.

For future leadership and policy
Educating the future leadership of Uganda.

Increasing knowledge in many areas will lead to more changes in policy and regulation.

5.11 Research Infrastructure

Some of the most extraordinary, and surely the most visible advances in research capacity include Information and Computing Technology (ICT), libraries, laboratories, and the Demographic Surveillance Site (DSS) in Iganga/Mayuge, each with significant multiplier effects for beneficiaries across Makerere University, Uganda, and well beyond.

Information and Communication Technologies (ICT). The technical and service advances in ICT by the end of 2008 are immensely valuable, as is the way in which the Directorate for ICT Support (DICTS) developed policy, strategy, program, and follow-up. All this is a valuable outcome of the support by Sida to Makerere University. Sida supported Makerere University to develop an ICT Master Plan that included the establishment of DICTS. Later Sida and other funders supported the implementation of this Master Plan[21]. Examples of changes as concerns ICT from 2000 to 2008 are shown in Table 3.
As DICTS did not exist prior to 2000, all staff were newly hired to carry out the Master Plan. For attracting highly motivated individuals and staff, retention depended on favourable salaries and on staff development.

For ICT, Makerere budgeted explicitly for recurring costs, including human resources to carry out the tasks, and continues to pay recurring costs for operating the system. For revenue, the University instituted a technology fee for students ($30 USD for undergraduates and $50 USD for postgraduates).

Management Information Systems for academic records, human resources, and financial systems operate, with varying levels of usefulness. Their benefits and problems, including cost-effectiveness, were under discussion in multiple places on campus during the site visit, as were strategies for improvement or replacements. Another open source platform (Moodle) was under review, as an option for the University to adopt formally as a single platform. Ways to make the processes and the human aspects of information systems more effective and efficient were also the focus of discussions.

Library. The tremendous gains in content and its accessibility and use on campus, and increasingly around Uganda, are intimately linked to the advances in ICT. Makerere University has a main library and seven branches. At the start of the program (2000), 30 librarians worked in these facilities without any technological aids; by the end of 2008, 48, computer-literate librarians managed the much expanded resources.

In 2000, Makerere University's journal subscriptions were fewer than 100 titles, and all in print. By the end of 2008 the library had expanded its collection to 35 journal databases with 20,000 e-journal titles. In 2003 the library established its collection online at http://libis.mak.ac.ug:8000/cgi-bin/gw-46-4-2/chameleon (using Virtua-ILS including an Oracle server). In 2000, two members of staff had PhDs. Sida supported two staff to pursue PhDs in Phase I, and three in Phase II. Today the library organizes training for researchers to use the electronic resources within faculties, schools and institutes, and offers a new course to PhD students as part of the 'cross-cutting' curriculum. Makerere University has played a lead role in organizing the Consortium of Ugandan University Libraries (where costs and resources are shared among a number of university libraries for long-term sustainability) as a means to extend the e-resources throughout Uganda, and Makerere library staff has traveled to other campuses to offer training.

[21] Greenberg A, Versluis G, Sida Supported ICT Project at Makerere University in Uganda, Sida Evaluation 05/17

Table 3. Comparison of ICT at Makerere University 2000 and 2009

Component	Status	
	2000	2009
Instruction and learning	Nothing in place	An E-learning Unit established under the Institute of Adult and Continuing Education (IACE). Ongoing staff training (course content development) and management on an online platform. Five E-learning Labs operational in five pilot Faculties. Two E-learning platforms (Blackboard and KEWL) operational. A review of another opensource platform (Moodle) underway to identify a single platform to be formally adopted by the University. A draft Educational Technology Strategic plan in place to guide future implementation.
Administration – Management information Systems	Nothing in place	Operational Management Information Systems (Academic Records; Human Resource). The University is currently addressing the process and people aspects of the information systems to realize the full efficiency gains
Internet service	Total of 128kbps disparate connections by individual units	The University's total Internet bandwidth subscription of 20Mbps has played a tremendous role in opening up the University community to the World Wide Web and access to its services from different stakeholders
Intranet services	Non-existent	These include: – Web (all units have a website), Corporate Email for all staff and students, and other Intranet services (staff directory, mailing lists, discussion fora, etc.)
ICT training	None	An introductory ICT course is part of the curriculum in a number of Faculties. Ongoing staff training in an Introductory course to computers – International Computer Drivers Licence – ICDL. Ongoing training by the Library in ICT research tools to various academic staff.
ICT management (Information Resource Mangement)	An ICT committee with the limited responsibility for ICT procurements	An ICT policy and strategy to guide development and implementation of ICT services in place. Establishment of a University ICT Council Committee to monitor and control implementation. This is the ICT policy organ of the University. Establishment of an information Resource Management unit – The Directorate for ICT Support (DICTS) to implement the policy, master plan and manage operations.
Student and staff access to ICT services		A number of Student Computer Labs in all Faculties (average student computer ration of 10:1) and access within staff offices (average ratio of 3:1).
ICT Infrastructure	A total of approx. 300 computers; Small LANs in a few faculties but not inter-connected	A University-wide optical fiber backbone linking all the administrative and academic buildings on the four campuses. Computer Labs in all Faculties. Local Area Networks (LANs) have been established in all work areas of academic and administrative buildings (total of over 7,300 access nodes). Student and staff Computer Labs in the University Library. A total of over 6,500 networked computers for student and staff access. Ten student Internet kiosks with a capacity of 165 computers evenly distributed geographically though the campus. A Network Operation Centers housing the central university ICT services and a Disaster Recovery Center for backup of the major central services. Wireless Hotspots in all student residences on the main campus.
Software Development	None in place	A software development unit (Software incubation Center) operational under the Faculty of Computing and IT. University-wide corporate anti-virus solution implemented.
Sustainability	No strategy	Approval and implementation of a Technology fee (USD 30 for Undergraduate students and USD 50 for postgraduates).

Laboratories. Most laboratories with Sida support, e.g. Biochemistry lab, Pharmacology lab and Microbiology lab functioned well; equipment was running and people were working there most of the time. The power supply at the GIS lab is not satisfactory; this needs to be resolved by Makerere. The standard of the laboratories varies considerably, those with external support are in much better condition and better equipped than those without external support. The Pathology lab at the Medical school and the Avian Influenza lab at the Faculty of Veterinary Medicine are among those in the best condition and best equipped, however, they have not been supported directly by Sida.

Demographic Surveillance Site (DSS) at Iganga/Mayuge. A DSS is a special, population based research station that continuously conducts surveys with a specific set of households in a defined geographic area. It may become a host to many researchers who bring more specialized studies to add to the routine demographic surveys. This DSS has been established entirely with Sida funding. However, Sida has consistently insisted that the DSS should solicit for additional sources of funding for the upkeep of the site. During the last years the DSS have been able to attract external funding from external projects conducted at the DSS. The area of operation is well mapped, households and other features easily identified with GPS coordinates and the area contains 67 000 people. Baseline census (March–July 2005) and follow-ups through the fifth (September 2008–January 2009) are complete. Hand-held computers are a unique feature used within this DSS to collect data.

5.12 Gender and Gender Mainstreaming.

Based on huge gender disparities disadvantaging women, the University established the Gender Mainstreaming Division (GMD) of the Academic Registrar's office in 2000. A key achievement of the GMD is the Female Scholarship Initiative 2000–2008. It recruited female undergraduates from disadvantaged backgrounds into sciences, benefiting 691 with support from the Carnegie Corporation. Sida extended support to GMD to award 5 PhD and 19 Master scholarships to female staff to pursue leadership (1 PhD and 5 MSc have graduated). Division staff conducts and disseminate studies underlying the work of the division.

Through the Gender Mainstreaming Program, women are working together to increase presence of women in high level positions able to improve the research environment for women. They also engage in mentoring to support one another to progress in their careers, despite cultural disincentives. Programmatic support of women staff and students at the GMD has been much appreciated by graduate students and staff; newer activities in 'sentinel sites' are harder to track.

In 2000, no women occupied senior management positions. A growing understanding of the importance of this managerial deficit for advancing gender equity led to filling two of the top ten positions by women, Deputy Vice Chancellor and University Librarian. Female Deputy Deans, Deputy Directors, and Heads of Departments have increased from none to seven by 2007. To address these weaknesses, the Gender Mainstreaming staff first worked on the Policy and Regulations on Sexual Harassment (2006), followed by a Research on the Situation Analysis of the Gender Terrain at Makerere University (2007), then a Makerere University Gender Policy (draft, 2009), a Gender Budgeting Manual for Sentinel Sites (draft, 2009), and Guidelines to Engender the University Curriculum (draft, 2009). Gender is given priority in University planning and policy formulation, as evidenced in the University Strategic Plan (2008/09–2018/19).

6. Impediments to Development of Research Capacity: Central University Administrative and Financial Systems, and Management of Sida Funds

University managerial infrastructure is important for building research capacity. In order for the program funded by Sida to be able to continue to contribute to increasing the research capacity, we concentrate on two crucial areas that urgently require improvement: *information* for policy, governance, planning, implementing, monitoring and evaluating programs of all kinds; and on *financial management.*

6.1 Information for Policy, Governance, Planning, Implementation and Monitoring

The University Strategic Plan 2008/09–2018/19 promises a new era for evidence-based planning, monitoring and evaluation of all university activities. Experience in Phases I and II suggest that the task will be immense, the challenges to address many. The Visitation Committee, 2007, described a state of informational chaos that we find to have persisted through 2008:

> *"Compounding the apparent mismanagement of funds and student numbers at Makerere is the lack of well processed data on financial, academic, personnel, and other matters. The Visitation Committee was shocked by the lack of organized and processed data to inform decision makers or visitors on university matters. Wherever we asked for data, huge and unprocessed information would be given to us in files, reports and folders for us to process and come to decisions on university activities! This lack of data to inform decisions is a sign of high levels of mismanagement. How can good decisions be made if there is no data to inform the process of doing so?"* [22]

Several central university offices are working on systems for collection, storage, analysis, and use of data, but the connections among them remain unclear. The Planning and Development Department (PDD) is working toward becoming the university's central repository for 'institutional research'. The Directorate of Quality Assurance is organizing resources to meet Ugandan requirements for accreditation, to become an authoritative center for methodology, and has a new server in anticipation of the growing demands for data and analysis.[23] The SGS has designed and partially populated several databases having to do with research and graduate education, and the new College of Health Sciences may be planning similar capacity. All of these efforts are forward looking and have very good intentions, but they have not been adequately informed by university-wide policy nor managed in a way to make the most effective and efficient use of scarce resources.

The ET found it impossible to tally research funds handled by the university. Everyone complains of burdensome and duplicative reporting, and the university has made some efforts at "harmonization" of reporting to external funders, although this initiative seems not to have come to fruition.[24] Lack of an analytic framework from the start, including measurable objectives and predefined indicators of progress, dramatically hindered activity planning, realistic budgeting, and monitoring of progress throughout Phases I & II of this program. Neither in 2000 nor by the close of 2008 did the SGS have any system or complete set of data for a basic program profile of all supervisors and senior scientists, of graduate students having benefited from Sida funds, or of research outputs by all participants.

[22] Report of the Visitation Committee to Public Universities, 2 February 2007.

[23] Since the site visit we learned that there have been personnel changes in this office, and possibly changes of policy and program as well.

[24] Makerere staff report that several funders are not eager to change their systems to accommodate 'harmonization'. Differences in currency also post difficulties.

In the General Agreement between Sida and the Ministry of Finance, Planning and Economic Development it is clear that Makerere is the owner of the program and responsible for its successful execution. Makerere University human resources to fulfill many responsibilities in this collaboration are not explicit in the Agreement, unlike the financial obligations of Sida that are detailed. The agreement states in general terms that Makerere University shall provide the necessary professional and administrative support, personnel service and any other resources necessary for the successful execution of the program, and ensure that administration and internal control are adequately carried out. Lack of budgeting for tasks required of Makerere University personnel in people-hours has followed, hindering quality and timeliness of implementation. Availability of research funds did not compensate for lack of human resources or for more functional university systems to support governance, financial management, and other administrative tasks at the program and unit levels.

The senior team at the SGS expanded in 2006–07 to include two Deputy Directors, for research and graduate studies. This team demonstrates a much more explicit and ambitious agenda for managing graduate studies and research, and a higher level of mastery of the considerable challenges not resolved by their predecessors, although they have very limited resources to implement all the priorities in the SGS Strategic Plan. Still, SGS neither receives timely and useful information from the units, nor does it provide to the Steering Committee analyses adequate to guide implementation policy and governance of the Sida supported program. On the positive side, the units described the monthly accounting reports from SGS to be consistently timely and useful, and the general flow of information from SGS to be helpful, although units did not always fully utilized the received information and requests from SGS often demanded almost immediate responses.

Sida neither required nor offered guidance sufficient to result in institution of a comprehensive framework for planning, implementation, monitoring, or evaluation at the start of Phase I or Phase II (including governance). Also, several reports for Sida have been produced, which Sida could have used better for actions or by financing development of systems. The Pilot Research Monitors' Report in 2004 recommended adoption of structured self-assessment. In 2005 Sida included an "outcome mapping" exercise, led by the Evaluation Unit, as part of the meeting in Stockholm just before signing the Phase II Agreement.

Specific opportunities to improve information for managing the Sida-funded activities have been missed, including:

2005. The first Director of DICTS urged collection of a set of baseline data and provided a list of data items to the previous Director of SGS, but no further steps to create a set of baseline data for this program ensued as a basis for continuously monitoring performance.

2006. When Sida and Makerere University revised budgeting to the level of subprograms and revised format for Annual Program Reports to link activities to budgets in 2006, research monitors scheduled a visit to Makerere University for February 2007 to help align the Sida activity planning format with the 2006 revision of format for Annual Program Reports. The intent was to encourage better planning and management of research from PhD candidate researchers up through every level of program responsibility, by linking planning of program activities to budgeting; then to reinforce the relationship of planning to performance, based on timelines, actual expenditures, outcomes, and formation of strategies to enhance impact. Sida cancelled this visit in December 2006, in the opinion of the ET likely contributing to delay in improving planning and monitoring of progress, and more regular attention to achieving the full range of potential impacts.

2007. As a major feature of research monitoring in August, each unit was asked to list and discuss ideas for indicators of success (Research Monitors' Report 2007). Neither SGS nor any unit continued from this step to adopt indicators or to begin self assessment using them.

2008. Sida supported a self assessment workshop at Makerere University in 2008. The workshop was planned already in the agreement 2005 and should have been carried out earlier than 2008. Makerere did not specify what support they wanted for carrying out the workshop, leading to arrival of a consultant emphasizing the logic framework, but near the end of Phase II (confusing many participants who found it difficult to retrofit objectives to nearly completed program plans to make them belatedly measurable). It was never related to ongoing Sida monitoring team interactions at Makerere, nor to Quality Assurance activities, thus missing opportunities for synergies among these activities (Research Monitor's report, November 2008).

6.1.1 Governance role of the Steering Committee

The Steering Committee was established in the middle of Phase I because governance of the program funded by Sida at Makerere worked badly. After establishment of the Steering Committee, which structure was decided by the Vice Chancellor at the time, program governance worked much more smoothly, although the role of the Steering Committee has never been determined. Despite this clear improvement, governance responsibilities still have not been adequately fulfilled. Ample human capacity to improve governance and management clearly existed within this Steering Committee and SGS.
One member of this Steering Committee led a particularly successful accreditation exercise with guidance on methods from the International University Council of East Africa, the Ugandan National Council of Higher Education, and Makerere's Directorate of Quality Assurance, as a pilot initiating Makerere's compliance with Ugandan accreditation requirements for academic programs.[25] The Strategic Planning Committee that drafted the new university strategic plan introducing a university framework for accountability to priorities campus-wide was chaired by a member of this Steering Committee. However, absence of systematic data collection and analysis to support governance decisions undermined program accountability. Steering Committee performance has been compromised by lack of information (from units to SGS, from SGS, and from central administrative sources), which contributed to a lack of planning, and poor follow-up to assure implementation of decisions and action plans. Steering Committee effectiveness was further diminished by irregularly scheduled and infrequent meetings. Deans, directors, and coordinators had too little time to attend meetings, likely compounded by frequent travel away from Kampala. Some members who virtually never attended meetings neglected to delegate authority to those to whom they designated to attend (Directors of DICTS and Library). Many members worked primarily for the interests of their own units, rather than engaging equally in their oversight roles.

6.1.2 Planning and budgets

One major consequence of lack of information and poor planning program-wide and by the Steering Committee in particular, has been failure to keep the budgets within the total framework when issuing the Annual Activity Plan before referring the combined request to Sida. Budgets in the activity plans submitted to Sida for the year 2008/2009 exceeded the framework by approximately 20%.
Activity plans were late, the contents not thoroughly considered in units, by the SGS, or by the Steering Committee, where decisions to stay within the budget framework should have been made. One underutilized resource appears to be the unit accountants, many of whom are not incorporated regularly into planning meetings with coordinators and researchers, to learn and contribute increasingly to the work of teams.

[25] The International University Council of East Africa (IUCEA) works with 65 universities. It rated the Makerere University Faculty of Agriculture self study as the best in region, based on an evaluation of a team made up of one German and two Kenyans. The team noted that no other study had the extent of factual basis, self-criticism, or transparency. The Vice Chancellor and Acting Director of QA appeared on Ugandan TV news on Monday, 16 February 2009.

6.2 Financial Management of Sida Funds

Makerere University has made substantial improvements in financial management of the Sida funds during Phase II, including: reduction of cash payments to near zero, by using checks that are easier to follow-up, increased frequency of bank reconciliation, separation of bank-accounts for all Sida funds, and preparation by faculties of supporting documents for expenditure in the continuous process (except in few cases).

Makerere University did not allocate sufficient physical space (in quantity or quality) for accounting staff at SGS to have a reasonable environment in which to carry out their functions from 2000 through 2008; nor were human or technological resources adequate. SGS lacked a controller position and relied on manual accounting to carry out its responsibilities for managing funds provided by Sida.

From 2000, Sida and Makerere University issued many assessments, manuals, guidelines, and reports to inform financial management and program administration, in fact so many that it has become impractical for all concerned staff members to be familiar with all. Although the Financial Management Manual for Sida/SAREC Project issued in 2005 seems to be best known, better rules and regulations have been developed since then. The multiplication of guides impeded correct utilization of Sida funds.

6.2.1 Planning, implementation follow-up and monitoring

It is common practice in most of the world to plan, implement, follow-up decisions, and monitor continuously the administration and internal control, timely planning and reporting, implementation of activities and the costs for them in monthly and quarterly information reports. Follow-up at an early stage here could have indicated whether targets were likely to be reached, and provided better direction for each year. Both Sida and Makerere University have been slow to take up serious efforts to use budgets as planning and evaluation tools, from the level of each researcher up to the SGS and Steering Committee, to link planning to monitoring. However, the issue has frequently been taken up in reports, Annual Review Meetings and action plans. The Management Information System remained too weak throughout 2000–2008 to support critical management functions, however, some steps have been taken. SGS developed Guidelines on Division of Labor, but Makerere University never issued these for implementation. In beginning of 2007, the Sida supported Program Officer requested, and Makerere University drafted, Standard Operating Procedures (SOPs). The Steering Committee decided in October/November 2008: "That the SGS finish the Standard Operating Procedures (SOP) and distribute it to the Coordinators and PI's." These were finally completed by April 2009. However, follow-up has also been impeded by lack of automation of financial and follow-up processes.

Other steps in the right direction include the start of budgeting by sub-program (decided by Makerere University and Sida in the September 2006 Annual Review Meeting) and procurement of a computerized system, "Navision", with operation to begin no later than July 2009.

6.2.2 Ensuring use of funds for intended purposes

It has been difficult, with the existing financial system and progress reports, to ensure that funds have been utilized for intended purposes throughout Phases I and II, but there is no indication that funds have been used for unintended purposes. The Original Agreement between Sida and Makerere University called for "…Capacity Objectives, Research Objectives and Expected Outputs for each sub-programme". Meeting these terms would have required specifying capacity and research objectives, expected outputs, and matching budgeted costs and expenditures to these. The reporting format developed in 2007 could have made it possible for supervisors and coordinators to trace whether funds were used for intended purposes. This format was used by some, but the content filled in proved insufficient to allow for monitoring of whether funds were used for purposes intended.

Some cases of misuse of funds have been detected, for example, computers were delivered to faculties lacking space to install them, and have been left unpacked. Also, computers and networks were bought by DICTS, but other units bought printers and ink, printing paper without coordination of purchases.

6.2.3 Financial accountability and advances

Although coordinators were responsible for accountability of funds received, advances have not been adequately followed up, resulting in large amounts of money remaining unaccounted for. Advances have not been recorded properly in financial statements on a separate cost item line, nor have advances been shown as expenditures in the Annual Financial Report for the correct year, leaving room for misappropriations. On 13 March 2009 the Makerere Bursar requested from the Auditor General an audit of advances outstanding from 2005 amounting to USD $415,184. Lack of enforcement of accountability does not give an accurate picture of funds utilized as advances and should not be recorded as expenditures until finally settled and approved. Most recently, in March 2009 Sida reduced the disbursement of funds with SEK 877,329 corresponding to unaccounted for advances issued 2006 and 2007.
The SGS improved their routines for following up on advances by introducing contracts in 2008 which state when accountability is due, and if accounting is not made in time salary deductions will take place. Accountability remains a problem, but the introduced routines allows for closer follow-up.

6.2.4 Disbursement, utilization of funds and audits

Slow utilization of funds (below 70%) has affected the continuous and timely implementation of the program. The Steering Committee failure to reallocate funds across units caused unutilized funds to accumulate during Phases I and II. SGS had inadequate power, time, and staff to accomplish detailed internal control, and by the close of 2008 implementation remained inadequate. The 'internal auditors' performed a form of control, pre-checking payments and controlling bank-reconciliations, but this is not auditing. This also delayed disbursement of funds. During Phase I Sida disbursed funds without receipt of any audit report (though required in the Agreement). This stipulation has been followed strictly in Phase II, and delayed disbursement from Sida from December 2008 to March 2009. No audit report has been ready for the Annual Review Meetings, nor have comments been communicated in a useful and timely way to accounts officers.

6.2.5 Segregation of duties

Inadequate segregation of duties persists for recording of payments and receipts, preparation of vouchers and updating of advance registers, and for reconciliation of bank accounts. These inadequacies expose transactions to risks of errors, irregularities and fraud, and lead to posted errors going undetected. Almost no cash payments are made now, which is good because check payments are easier to follow-up. Segregation of duties in the accounts section at the DSS is most urgent, as one person has been executing tasks that should always have been segregated. An accountant was hired to assure segregation, but not immediately engaged in the duties associated with Sida funded work, despite the urgency. Instead, he was paid from Sida funds, even while he worked on other matters, at least from May 2008 until mid-March 2009. Failure to segregate duties weakens the internal control structure of the program (as in DSS).

6.2.6 Procurement and fixed assets

During Phase I many procurement problems plagued the program, including clearance at customs, taxes, lack of knowledge. Program staff worked hard for improvement, and the university has strengthened its procurement unit. Many continuing problems are likely due to inadequate planning. Each unit is expected to issue a Procurement Plan, but procurement plans explicitly for the activities are frequently not attached to the Annual Activity Plans. Participants are still not following all procurement procedures and the procurement cycle, failing to submit documents (or these are lost during the process). These lapses cause delay. The Procurement and Disposal Unit developed useful materials to address such problems. For some equipment e.g. specialized library equipment, there is no firm in the region

that manufactures or supplies what is needed, and the firms serving as importer/vendor are not competent, causing delay and operational problems. Also, reagents for laboratory analyses are often needed on short notice, and researchers cannot get them as needed. Researchers often turn to Swedish collaborators to make these purchases, a practice that should be avoided by addressing this Makerere system shortcoming.

Control over the use of Fixed Assets has improved during the years. Fixed Asset Registers are kept, but not continuously updated at the unit level; engraving is done at least every year for easy identification to avoid losses, and Vehicle Journal/Log-books are kept. It is time for SGS to initiate action by the Disposal Committee on obsolete items.

6.2.7 Administrative costs

In the Assessment Plan for the Agreement for Phase I, Sida estimated the administrative costs, and limited these to no more than 6%, and later provided an example of what could be included, or covered, by administrative costs. In the Agreement for Phase II, Sida suggested support for research administration with a maximum of 6% of the total allocation to the respective faculties and units, except for SGS, as its support was specifically for administration and coordination. However, the allowable purposes for use of unit administrative funds were not specified. The Makerere University Research and Innovation Policy require all research projects to contribute 15% of the research costs. If Sida were to agree to 15% overhead costs without limiting permissible uses of these funds, there is an obvious risk that the15% will be used for the units' overall budgets.

6.2.8 Interest and exchange rate gains

Makerere University was required to submit for approval by Sida use of interest gained, but did not do so. The University should have indicated and accounted for gains and losses in interest and from exchange rates, which they did, although they did not submit these for approval. Big variations in the conversion rate between SEK and US dollars pose another substantial risk. These have varied from about USD $1 to SEK 6.44 and 10 during Phases I and II.

6.2.9 Risk

The manual process for accounting of costs and advances has implied high risks in handling the transactions. Use of the procured computerized accounting system remains most urgent. Because Sida requires that 70% of the total disbursed funds be utilized before another disbursement may take place, units that are very slow to absorb funds may delay the progress in units performing faster. Students who drop out after some activities may affect the budget. Administrative costs rise if funds are absorbed more slowly than anticipated, as administrative tasks must be carried out during a time period beyond that planned and budgeted. Inadequate governance can affect proper implementation of the program. Failure to segregate duties weakens the internal control structure of the program (as in the DSS).

Overall, program implementation has been undermined by inadequate university administrative and financial systems, by the complexity, scale, and novel 'research capacity' character of this program, along with missing information and inadequate time allocated to management by many capable individuals.

7 Evaluative Conclusions

Summary of Evaluative Conclusions about Research Capacity

The conclusions we draw go part of the way (due to limitations discussed in the beginning of the report) towards measuring:

- the extent to which a development intervention has achieved its objectives (effectiveness),
- the totality of the effects of a development intervention (impact),
- the extent to which the intervention conforms to the needs and priorities of target groups and the policies of recipient countries and donors (relevance), and
- the extent to which the costs of the intervention can be justified by its results (efficiency).
- 'sustainability' can be assessed only hypothetically; the evidence is even more subject to speculation.

The overall purpose of the program has been to 'build research capacity', therefore we concentrate our conclusions on this.

We conclude that capacity development has been substantial, and all the more remarkable given the shortcomings in university administrative systems and structural problems. Aside from the scale and complexity of this program, what distinguishes Sida support is the emphasis on 'capacity building', funding of research infrastructure, and of research and of graduate education through thematic sub-programs. These have encouraged teamwork, increased Makerere researchers' presence in international networks, and encouraged formation and strengthening of research groups—working on topics of importance to Ugandan development.

We assess *relevance* of the program most highly; the evidence all points to consistency of 'research capacity' with the national and university priorities and policies regarding poverty, gender equity, and development. We place *effectiveness* and *impact* of this 'capacity building' program in the middle range, as even under difficult circumstances, the extent of change in capacity from 2000–2008 is impressive. We can estimate *efficiency* only very roughly. Given the novelty of managing such large amounts of research funding with so few staff, many key players with so little time available, and the long list of administrative deficits, we gauge performance here to have been lowest.

The parts of the program that are most likely to be *sustainable,* i.e. the part beside the human capacity that is self-sufficient, without Sida support are those to which the university has committed funds, most notably to ICT—at least for staff and equipment already in place. The commitment of the university to other elements of research infrastructure and research is evident in its long term strategy, but not yet in budget. Nonetheless, staff is notably enthusiastic about pursuing research. Research groups or individuals who have made successful alliances internationally have prospects for additional funds, but success cannot be assured. Especially given the daunting condition of the world economy, steady research funding will not come easily. University ties to Ugandan or international industry remain relatively weak, while contributions of the research for policy and service are more recognized, albeit with little prospect of financial rewards to sustain research. Thus, the gains in human capital, those having gained skills through this collaboration with Sida (and other programs), and having strengthened research collaboration on campus and internationally, seem more sustainable than research and managerial activities that do not yet enjoy commitments of university funding.

- The enormous enhancements of *research infrastructure* (ICT, library, laboratories, and the DSS) have transformed the research environment.

- Participation in *networks* serves to attract assistance from colleagues and international recognition of valuable work, even before publication, often increasing opportunities for publication and future collaboration. Supporting involvement in networks is among the most important investments Sida has made.
- One of the more dramatic changes from 2000 is the engagement of researchers in translating findings into *publications.* Writing manuscripts seems to have become a normal part of the life of many researchers.
- *Promotions* of PhD completers and of senior scientists, and submission of more dossiers for consideration, contributes to the research environment, even though the promotion process seems slow.
- Initiatives to *seek external collaborators and research support* seem substantially greater than in 2000. Faculty funds are very important for 'start-up' for new researchers, and for pilot studies in preparation for applications for higher levels of funding, even by experienced investigators.
- Several units now sponsor *journals,* participants in others have taken on editorial responsibilities.
- The transition of researchers into *research groups* has started in faculties and units across the University. If the research groups that are becoming visible continue to attract new collaborators and funds, they may become sustainable; most are not likely to be sustainable independent of Sida support yet.

Research Education. Makerere University scholarships funded by Sida covering tuition, fees, and research costs benefited approximately one quarter of those registered in doctoral programs at Makerere.[26] This support contributed very significantly to heightened visibility of graduate education on campus, and promoted a growing sense of the importance of PhD studies and of 'normalcy' for continuing from undergraduate studies to the Masters level through the PhD.

Eligibility of Teaching Assistants for Master level Makerere University scholarships funded by Sida is a positive development. The process of identifying PhD candidates and defining 'start' dates still seems lacking in clarity and the registration process improved but slow. For students jointly registered (at KI or KTH) there is an institutional character to the Makerere-Swedish university collaboration, as students become 'official' rather than relatively invisible as 'guests' of their Swedish supervisors. Costs of joint registration include added degree requirements.

Study leave is a crucial ingredient to completion of PhD degrees, especially for students primarily or entirely at Makerere, without time in Swedish labs and libraries, away from job and family responsibilities. It is not clear how candidates apply, who makes decisions, or how equitably or predictably study leave is awarded. It is also not clear how study leave affects the units and individuals working in them, including the Master students who pick up duties from PhD candidates on leave.

There is compelling evidence of the value of and need for an approved program of PhD 'cross-cutting courses' for rapid implementation to increase efficiency.

Supervision. Input from both Ugandan and Swedish supervisors has been valuable, as the former better understand the problems to be solved, the latter had more experience with the process of translating problems into research questions and protocols, analyzing data, and publishing results. In both Phases, decisions about study topic and development of research projects seem to have been borne mainly by students with less input from supervisors than could have been helpful and productive.

[26] This amounts to157 of approximately 600 doctoral students according to SGS; we have not been able to identify all of these students to include in the data analysis.

Supervision of students within active research teams appears to have many advantages: students gain from multiple perspectives and open discussion, without being left to cope alone with conflicting feedback from multiple supervisors. The recent interventions by SGS to limit the number of graduate students per supervisor, and to establish PhD committees, are already having positive effects. The new PhDs are eager to supervise and they want targeted interaction with experienced colleagues to build skills and confidence. Whether all senior colleagues will make 'space' for newer PhDs to participate fully in supervision (and other leadership tasks) is less clear. The supervision capacity grows, but until the university's structural problems can be addressed (very low salaries and too little time), the impact of the Sida supported program on implementation of supervision may be more modest than what the growing talent pool could provide under other circumstances.

Theses and defenses. Thesis by publication has many advantages, so long as students have ample guidance in preparing for publishing, and where there are sufficient journals publishing in the areas of interest. Until both are clear, it will be important to maintain the traditional thesis alternative. To date the experiences with the public defense have been largely positive. Students taking joint degrees have defended in Sweden more often than at Makerere University, both because the Swedish institutions encouraged this, and based on student concerns: nervousness about how they might be treated by examiners in a public setting in Uganda, and about the quality of printing of theses at Makerere University.

Delays in supervisors' responses to student work at every stage, and in securing outside vetters for proposals, and in thesis examiner response times, all postpone completion, and discourage some students from ever completing. As Sida has continued scholarships for PhD students even when they do not complete on time, it is Sida scholarship Master candidates who pay privately when these delays push completion into a third term. As most Master students pay privately, scholarships still offer significant advantage.

Research careers appear to be most promising for those in active research groups, or who are independently well connected to networks for new ideas, collaborators, funds, and opportunities for international publication.

8 Broader Lessons

Sida support has contributed to a significant increase in research capacity at Makerere, and many senior staff have gained supervisory skills through training and collaboration with Swedish colleagues. For continuing to increase program success at Makerere University, and to make use of experience at Makerere to benefit other programs, we list lessons that have emerged.

A unifying framework for institutional strategy; for planning, monitoring, and evaluation at the program level.

This program has proven many times over the importance for beginning the proposal process with a framework for planning activities and budgets; regular monitoring of progress, and evaluation, both self-assessment and external reviews. Once decisions are final about funds awarded, it is again crucial to update plans within the framework, using real budgets, allocations, activities, timelines, and actual expenditures to monitor and plan.

Administrative and financial management systems.

Sida should insist upon and invest in, if necessary, upgrading of financial and administrative systems such that it is possible to have adequate, timely information for planning, monitoring, reporting, and

evaluation of all sorts—and follow-up, using budgets as management tools, matching activities to actual expenditures. To improve performance and program accountability, moving from fragmented elements of administration to systems is a high priority in every program.

Realistic budgeting of 'in-kind' resources.

For achieving a realistic match between funding and capacity for uptake and management of funds and research, it is as important to budget hours to be dedicated to the project as 'in kind' contributions by the host institution as it is to budget funds from Sida.

Trade-offs: Start big or small?

Arguably the significant growth in research capacity and appetite for emphasizing research as a pillar of the strategic plan at Makerere University has been greatly encouraged by the breadth of experience on that campus based on research supported by Sida, and collaboration with Swedish researchers. Perhaps a less generous infusion of funds, and engagement of units and personnel would have yielded much less in terms of the commitment university-wide toward becoming a research-driven university. Thus, starting big has very probable benefits. However, starting 'big' in a setting where resources are very limited and systems for managing grants and contracts across the university are very weak, increases risk of funds not being used for purposes intended and for inefficiency. Thus, the lesson would be to start by building those systems early, where a university is amenable to reform at the start. Where this is not the case, bigger investments may hold promise for significant gain in research capacity, but at relatively high risk. Whether Makerere University takes up administrative and financial reform effectively from 2009 onward can inform a broader debate about the trade-offs of starting 'big' or 'small'.

Research themes and groups.

For research capacity, it is important to emphasize indigenous development of research themes, and to encourage research groups as foundations for continuing teamwork and collaboration within and across disciplines and geographic boundaries. Furthermore, institutionalizing collaborations, instead of the common collaborations among individuals, are important for success. These are all crucial elements of any strategy for 'international competitiveness' in research.

Networks, careers in research, and sustainability.

For building viable research groups, for supporting individual researchers to emerge from isolation to become part of the global research community, there is probably no more important investment than in facilitating active participation in international networks. These connections facilitate uptake of discoveries worldwide, finding new collaborators and new sources of support, dissemination of results, recognition for contributions, and strategizing to optimize impact. Elements of this support include internet connectivity, travel to international meetings, and ability to host such meetings by research institutions in developing countries.

Imagination for reward systems.

Academic reward systems are not conducive to optimizing development of research capacity in developing countries. At Makerere University and elsewhere, institutional development is talked about, but rarely is institution-building behavior incorporated in any system of rewards. Similarly, for researchers in more affluent settings who wish to collaborate with colleagues in developing countries, home institution reward systems, especially criteria for grants, publication, and promotion, impinge on collaboration with developing countries, and most particularly for researchers in their most productive years, and not yet close to retirement. Creative additions to reward systems are needed.

9 Recommendations for Action

The recommendations for action to increase research even further beyond were it has already developed, focus on what the ET advises Sida either to insist upon (in the case of financial management to assure accountability to Swedish taxpayers), or to encourage through its support of Makerere University to improve program performance in all ways. Recommendations begin at the highest level of university operations that currently inhibit improvements within programs, and move to the program level.

9.1 Recommendations for Central University Administrative Infrastructure to Support Research

1. Policy and system for information and its management. As it appears that Makerere has no overarching policy on information, we *recommend that Sida encourage and that Makerere University develop a unified information policy at the highest level* taking into account the University Strategic Plan offering the first comprehensive, university-wide framework for planning, monitoring, and evaluation. Makerere University has earlier taken up similar challenges with success, for example, ICT policy, establishment of DICTS, and its Master Plan. Many units and individuals on campus have need of information for many purposes, and much of the information needed by one unit or for one purpose, is the same, or overlaps with that needed by others. Any information system requires a carefully designed architecture designating what data are to be gathered, how and where data are to be stored, who is to be able to read, write, or change information within the system, and what uses of data are to be enabled or prohibited. It may be possible to store (and protect) information centrally (at DICTS or elsewhere) while encouraging use of unit- or purpose-specific analytic tools. Centralized compilation and storage of data can ease access to more and higher quality data. While drawing on the same pool of data, many different analytic approaches could be applied, including those designed by units to meet their own needs. As we heard many campus discussions about whether to keep, modify, or replace the current systems (including ARIS, FINIS, HURIS along with many others managed within units), it is likely to be very timely to consider more holistically the needs for information, architecture, and analysis. The University Research, Administrative and Financial Reform Committee (URAFC) is already meeting, and individuals involved with this program are members. Thus, URAFC provides opportunity for further discussion, before consideration by governance bodies, such as University Council.

2. Administrative and financial management to support research. Central University elements of a system to support units in applying for, managing, and reporting on externally generated funds for research and graduate education – and for managing money and intellectual property, are scattered and inadequate at Makerere University. The ET *recommends that Sida work with Makerere University, and that the University establish clear policy and mechanisms for coherent, authoritative, systematic, transparent management of research funds and for support of researchers and research managers.* Makerere University has recently adopted policy to be a 'research-driven' university, has a governance structure, and policies for research and intellectual property, but inadequate mechanisms to achieve these objectives. Therefore, there is a need for:

a. A university-wide coordinating and oversight mechanism. 'Driving research' requires a university-wide mechanism to energize, oversee, and develop institution-wide expertise for optimizing productivity – and none exists. It need not be a problem that grant programs operate out of numerous units on a day to day basis, if the university has a high level mechanism with authority to achieve strategic coherence – including compliance with financial management rules in order to keep funds flowing in.

b. A Grants and contracts office. The administrative arm of the university-wide strategic and governance mechanism at many universities is a Grants and Contracts office. Good ones combine expertise with power and a strong service orientation. They help research managers and researchers to seek

external funds, and to comply with all obligations that come with them. They are closely linked with the university fiscal agents who assure financial accountability. At Makerere, many of those whose approval and signatures are needed to facilitate management are the same senior academic staff who are most over-burdened and most likely to be traveling off campus. The venue for discussion of the two above mentioned bodies could be the same as above, the URAFC.

3. Funding for Information System, oversight body and grants and contracts capacity. The ET *recommends Makerere University to apply for funds from Sida, to achieve the two recommendations above, while the responsibility for the recurring costs remains with the University.* As we have had no involvement with the URAFC, we cannot supply more detail, except to say that there are likely to be 'start-up' investments in designing and rolling out new systems, followed by recurring costs to maintain them. The former might be appropriate, relatively short term targets for external support; the latter the long term maintenance costs to be assumed by the university.

9.2 Recommendations at Program-level

1. Program policy and implementation – oversight mechanism. As the existing Steering Committee mechanism for setting program policy and making the inevitably difficult implementation decisions (e.g. reallocations) has not served the program well, the ET *recommends that Sida work with Makerere University, and that the University revamp this mechanism.* The oversight mechanism should be able to coordinate all units within the Agreement framework, including reallocations for equitable and more efficient use of project funds. The program oversight mechanism should therefore be connected to the university wide oversight body. Also, the Chair of the program level decision-making body should not be a recipient of program funds, thus reducing the burden of conflicting interests. The program coordinators need to be members of the new steering/implementation program mechanism to give information and argue their positions, but not to make final decisions unless counterbalanced by a chair and a majority of voting members who do not have conflicts of interest

2. Improvements in financial management

a. The ET *recommends that Sida insist on budgeting of time for all activities in Agreements, including for 'in kind' or partially subsidized oversight and administrative functions to be carried out by Makerere University staff, and that the University do so.*

b. Better use of Financial Management System will help to allow for monitoring and evaluation of performance. The ET *recommends that financial as well as performance indicators (predetermined and measurable) should be connected in plans and reports for more effective and efficient program management.* A realistic cash flow forecast carried out quarterly or twice each year, based on previous experience, can make it possible to predict reallocations and to improve governance and implementation in the future. Starting Phase III with a better framework for monitoring and evaluation should help everyone to better understand and carry out tasks with awareness that each element contributes to, or detracts from, program performance. Disbursements should be used as leverage, especially for closer follow-up of advances.

As delays accumulated throughout Phases I and II in use of funds, in decision-making by the Steering Committee, in reallocations, and for all forms of follow-up, Sida should engage in discussion with Makerere University about all means for balancing research activity planning with administrative, financial, and governance capacity. The SGS should continue to act as the implementation arm, devoting special attention to budgeting of time for administrative aspects required of all participants for timely completion of planning, budgeting, accounting, reporting, oversight, and governance responsibilities, as well as for research and academic tasks.

Because evidence-based monitoring and evaluation will be crucial to continuing development of research capacity for a university capable of contributing to Uganda's development and reduction of poverty: Support Quality Assurance to guide continuous monitoring and self assessment at the University, including increasing expertise in methods and engagement of researchers and administrators university-wide as an integral an essential part of the research environment.

Within units, each researcher, including each PhD student, should develop a budget as part of planning, specifying program activities with timelines. These budgets, as revised by teams and subprograms to fit within approved subprogram budgets, should become research management tools for every participant to monitor progress against plans, always calculating actual expenditures and funds remaining, with regular assistance from accountants.

Coordinators and Deans should assure unit budgets do not exceed funds available under the Agreement, and oversee allocations, rates of expenditure, and reallocations in units, and follow-up of advances in their units. All units should include accountants as regular participants in meetings where budgets and allocations are discussed, and encourage interaction of accountants with all researchers. A more realistic schedule for unit planning must allow for adequate review by SGS and whatever body may assume oversight of implementation. Coordinators should give quarterly feedback, supported by quarterly meetings of SGS and the units, to SGS and to the oversight body, on financial statements sent to them by SGS, including justification of larger variances and explanation of how the variance is likely to influence future implementation of the subprogram or program.

When monitored in the manner recommended here, budget variances become indicators that demand prompt investigation by the program management. Budget implementation should provide a control mechanism by constant comparison—when and if—plans, budgets by activity, and actual expenditures are aligned for each annual cycle.

The use of the new, automated system, Navision, should begin promptly. As it has no evaluation component, SGS should assure that cost codes and cost names in the computerized accounting system are coordinated with the different cost elements in the activity planning for Phase III, and the reports should be designed in the same manner. This will facilitate follow-up.

The Standard Operating Procedures (SOP) should be implemented immediately, including follow-up of program targets and achievements using procedures in the SOP.

9.3 Recommendations for Increased Research Capacity at Makerere University

1. Research Infrastructure. As ICT and Library are both functioning well, the recommendation is to focus on continuous planning for sustainability; and on upgrades and expansions as funds permit, including collaboration with other public universities.

For laboratories there is need to plan continually for sustainability, including maintenance, and needs for more equipment. Also there might be substantial efficiencies to be gained if equipment and maintenance were unified in a shared facility. Advantages and disadvantages of a unified facility should be evaluated.

The recommendation for DSS is urgent: proceed with restructuring as rapidly as possible.

2. Research Environment and Culture. Encourage relevance through selection of themes for team efforts, with early strategic attention to potential for dissemination and impact. Sida should encourage formation and strengthening of research groups such that they become viable and help to institutionalize the collaboration between Makerere and Swedish Universities. Sida should ask applicants to explain how they will use funds to move in this direction — and toward multi-disciplinary collaboration.

Encourage frequent and regular schedules of research seminars, and experiment with approaches to increase participation (food, clubs, etc.). Sida should encourage specific proposals for increasing sharing of research and constructive critical thinking, and encourage units to specify associated costs in budgets.

Encourage very active participation in national and international research networks, and budgets for travel. Encourage senior researchers to include younger colleagues. Encourage units to specify costs in budget requests.

Sida should support activities to close the gender gap, including scholarships, strategy, and policy development at the Gender Mainstreaming Division.

Makerere should develop clear strategies and incentives for greater engagement with strategic partners, the potential users of research: government, industry, non-profit entities, and communities. Encourage review of promotion criteria and processes to encourage greater gender sensitivity, institution-building behavior, and more rapid completion of personnel reviews. Encourage additional forms of recognition: awards, one time monetary prizes, release from certain duties.

3. Research Education

a. Master level. Continue to offer scholarships to Teaching Assistants and pursue University strategies to intensify supervision and shorten delays of proposal approvals and thesis defenses. Paying more out-of-pocket costs (books, copying, software), if not stipends, should be considered. Analyze costs and benefits of short leaves, for increasing predictability and equity in a system to support staff to study. Encourage short leaves to enable students to study for exams, etc. consistent with this analysis.

b. PhD level. Encourage some experimentation with applicants who have jobs in other sectors, to reinforce life-long working relationships across sectors (university, government agencies, vital industries, and the non-profit sector).

Encourage Makerere's development and implementation of strategies to increase engagement of supervisors in development of proposals, and to reduce delay in registration caused by supervisors and vetters.

Makerere should analyze benefits and problems in units associated with staff on study leave, clarify eligibility and approval processes within and across units to improve equity. For students in administrative posts even very modest leaves at key points deserve consideration.

Urgent attention by Makerere University is needed to speed approval of a full program of courses for credit, open to all PhD students, with predictable scheduling well in advance of offerings.

Encourage greater involvement of supervisors as students choose topics and shape proposals. Encourage rapid uptake of new supervisors, starting with co-supervision, including on PhD committees; find creative ways to reward good supervision (prizes, release from certain duties, etc.) while addressing structural problems (the profound limits on time and compensation); and encourage supervision models consistent with building research teams and groups.

Encourage thesis by publication where practicable. Encourage open defenses, with attention to safeguarding students from 'old style' public intimidation; and rapidly align guidelines for students and examiners (at units and SGS). Encourage Makererere University to systematize and expedite confirmation that outside vetters and examiners will complete their assignments on time, and that students, supervisors and examiners are all working from the same procedures for evaluating theses and conducting defenses.

9.4 Recommendations for Collaboration with Swedish Researchers and Institutions

To improve collaboration, we recommend that:

Selection of Swedish coordinators be made jointly by Makerere, Sida, and the Swedish University/unit where the coordinator is expected to sit.

Swedish coordinators suggest collaborators for research and supervision.

Makerere make final decisions about whom to invite to serve as research and supervision collaborators among those suggested by the Swedish coordinator, and others they identify independently. Makerere promptly inform the Swedish coordinators as to whom they have selected.

Swedish collaborators and coordinators see proposals, plans, reports and related documents, with opportunity to discuss the substance before these are final. Sida should not accept documents as final until Swedish counterparts have signed off, indicating they have been involved in the discussions and reached agreement, nor should Makerere release funds for the activities prior to agreement.

If Swedish and Ugandan coordinators do not agree, Sida should help Makerere to solve the problem; in very severe cases this might mean changing the coordinator in Sweden or at Makerere.

When proposals, planning documents and reports are written, Makerere should take care to use the proper forms and follow guidelines; neither Sida nor Makerere should release funds before this is done.

9.5 Financial Issues

For reallocations in Phase II, Sida must specify what is meant by "Major reallocations of the budgets (+ or – 30% on each budget item)".

The Makerere coordinators have the primary responsibility to follow-up accountability for advances received, and for reporting to SGS. SGS should inform the program-level oversight body (and at the university level, if one comes into existence), and have the chief financial officer (currently the bursar) initiate salary deductions. Sida should reduce each disbursement by the amount of unsettled advances.[27] Salary deductions should be continuously followed up. Sida should not tolerate the practice accepted by the Steering Committee and SGS from 2000–2008 of permitting large amounts of accounted for advances to accumulate.

Sida should insist upon segregation of duties on all levels. To rectify the lack of segregation of duties in the accounts section at the DSS, the employed accountant should get his job description immediately showing his duties. The cash should be managed under an imprest cash system.[28]

The internal audit system at Makerere should be developed for more continuous internal auditing, as its capacity now is very limited. The internal auditors should give reports about their findings to the staff members responsible for the program.

Early audit reports at Makerere are essential for better implementation in the future. Delayed issue of reports can delay disbursements of funds. Early engagement each year of external auditors is advisable. Similarly the immediate previous year's audit report should be discussed at the Annual Review Meeting. External Auditors' comments should also be communicated to concerned Accounts officers for observance and for future advice. Sida should follow-up to assure agreed time-limits for issuing audit reports are kept.

[27] See Financial Management Manual 6.11. Operational Advance Liquidation shall "If a staff takes three months before settling the amount due and no explanation given, no further advances are provided and the *entire amount must be recovered from the next payroll.* The Financial Manager is responsible for monitoring this and ensuring payroll deductions"

[28] A petty cash imprest system allows only replenishment of the original amount placed in the account.

Fixed assets registers at Makerere should be continuously updated and all fixed assets engraved as soon as possible.

Procurement plans should be attached by Makerere for concerned activities to Annual Planning Reports, and all attachments should be used when initiating requests in the university procurement process. Procurement problems at Makerere should not be allowed to be used as an excuse for implementation delays. Planning and coordination of procurements among all units is essential as is local procurement whenever possible, in order to encourage development of local manufacturers, suppliers, warranties, services, and parts.

Sida should sign a clear written agreement with Makerere, including how it anticipates the administrative costs (whether 6% or 15%) are to be utilized, giving guidelines with examples. In the Research and Innovations Policy of March 2008, Section 4.4.3 states: "Require all research projects to contribute 15% (5% to the SGS, 3% to the Department, 3% to the Faculty and 4% retained for the center) of the research costs as institutional overheads/indirect costs." Such a general clause should not be accepted by Sida; instead the purpose should be specified, for example for staff for monitoring and evaluation of funds disbursed.

Sida should carry out and insist that Makerere University also undertake risk analysis at some regular interval to analyze that proper accounting methods are introduced and followed with accounting of sub-activities. Further it has to be assured that slow absorption of funds does not prevent progress in faster units. (Sida does not disburse until 70% of the previous funds are utilized). It also has to be assured that long delays in accounting of advances does not indicate embezzlement. The effect on the budget by drop out of any student after starting in the program has to be analyzed as well as if slow absorption is causing higher administrative costs. Continuing segregation of duties has to be assured and fluctuation in exchange rates has to be tracked.

A list of important manuals and guidelines concerning administrative, financial and performance matters, should be prepared (and simplified to avoid confusion), then be followed, with training provided for those who need it.

Sida should insist that interest gained be approved by Sida, and gains and losses from exchange rates be accounted for to Sida.

Co-funding can create synergies. Sida and Makerere should pursue joint administrative methods and procedures, such as joint audit reports and harmonized reporting.

Provide training in groups or individually for planning and budgeting, use of indicators, accounting of sub-activities, follow-up of targets and achievements compared to actual expenditure, procurement planning, disposal of assets, accountability of advances and so on. Provide training for using a new monitoring framework including development of indicators and to understand the new computerized accounting-system. Success will depend on the involvement of each coordinator and unit.

9.6 Final Recommendation

When signing a new agreement, Makerere University and Sida should put in place a mechanism to monitor both financial and research performance by matching actual activities to budgets and activity plans and ensuring timely accountability of advances including rules for withholding parts or total of disbursements. For the Phase III Agreement, clear rules and enforcement actions should be included at the overall level and for each unit individually. It has been difficult for the management to ensure that all funds are properly accounted for (financially and in terms of performance) and used for the intended purposes, and Sida should consider stopping or reducing further disbursements until satisfactory accountancy and follow-up system has been submitted to Sida.

Appendix 1 Terms of References

1 Evaluation Purpose

The evaluation purpose is to analyse and assess the Swedish Development Cooperation Agency Research Cooperation support to Makerere University, Uganda.

The assessment should be made in the relation to the overall goal of Sida bilateral university support i.e. strengthen the capacity to develop methods to plan, conduct and use research for poverty alleviation in Uganda, through creating conducive research environments for research and research training.

The evaluation shall cover the period 2000–2008.

The evaluation shall provide an independent view on the bilateral research support to Makerere University. The evaluation should describe and assess past progress, with focus on the future direction and management of the support form resulting in concrete and realistic recommendations, regarding future composition, modalities and level of support, to both safeguard quality and ensure quantitative outputs, e.g. trained PhD's etc, and outcomes, e.g. use of research results. The evaluation will thus be formative and analyse the effectiveness, impact, relevance, sustainability and efficiency of the research cooperation. The evaluation must be based on participatory methods to strengthen the local initiative and ownership of the programme.

The evaluation will be used both as an input to the assessment of continued Sida bilateral research cooperation support to Uganda 2010–2013 and contribute to lessons learned for Sida bilateral research support in general.

2 Intervention Background

The research cooperation with Uganda, was initiated in 2000. It consists of institutional support aimed at building up sustainable research capacity. To contribute to the establishment of a coherent agenda for research and research training in Uganda, the support has been focused at Makerere University (MAK) the largest public university in the country.

Support has been given for three consecutive agreement periods since 2000[29]. The current agreement (July 2005–June 2009)[30], has continued to target MAK and is directed to support an environment that is conducive for research and research training. The support to individual research projects within faculty based research and research training programmes is a tool to achieve this goal and has the slogan "to support the supervisor to supervise". A collaborative research theme "Lake Victoria and other water resources" was defined to enhance the impact of the research carried out. The programme comprises six institutional and six research programmes having counterparts at seven university institutions in Sweden.

Well-trained researchers can pose and pursue questions relevant for poverty reduction, national development in many sectors of the society, and enhanced standard of living. The aim of the programme is to support the existing structures and encourage the development of new structures that would create an environment that is conductive for research training and in so doing assist to identify and improve upon structures that hinder university research. The programme is built around international research collaboration, principally with Swedish universities. The programme aims to support MAK towards the goal of becoming a vibrant, internationally competitive, research university.

[29] Pilot phase, Sept. 2000–Dec. 2001, 15 million SEK and Phase one, 2002–June 2005, 104.110 million SEK.
[30] Phase two, 181 million SEK.

The *main objective* of the bilateral research cooperation is to strengthen the capacity to plan, manage, execute and use research at university and faculty level and to promote an enabling environment and culture for research through increased involvement in research for academic staff.

Specific objectives include; provide the university/faculty/unit with the tools:

- to develop strategies and plans for research
- to conduct research training and research
- to manage research
- to attract funding for research
- to disseminate and increase the use of research results and,
- to stimulate innovation.

The following agreement periods shall be covered in the evaluation.

Period	Agreement periods included in the evaluation
Pilot Phase	Sep 2000–Dec 2001
Phase I	Jan 2002–June 2005
Phase II	July 2005–June 2009 (will be extended to Dec 2009)

3 Stakeholder Involvement

MAK will be able to take part in the development of the Terms of Reference and comments will be taken into consideration.

The evaluation team is expected to inform the parties concerned in advance of its visits, so those that want to participate in and contribute to the evaluation can do so. The team will also be expected to report and/or disseminate their findings to all stakeholders.

The draft evaluation report should be circulated to reference groups representing relevant and representative stakeholders in Uganda and Sweden, for consultation and validation. Comments should be considered before the final evaluation report is completed. The evaluation team should describe which groups that have been consulted and why they were selected.

A steering group consisting of representatives from Sida and Makerere will comment the draft and approve the final evaluation report (Cristina de Carvalho Eriksson, Zinaida Iritz and Eli Katunguka-Rwakishaya).

The final evaluation report should be distributed to all concerned stakeholders in Uganda and Sweden.

4 Evaluation Questions

The evaluation shall specifically analyse and describe the following aspects of the research cooperation (see questions below). The evaluation shall also make an *overall* analysis of the research cooperation in relation to its effectiveness, impact, relevance, sustainability and efficiency.

A. General

Given the present institutional context in which the bilateral research cooperation programme operates, describe and analyse, at a general level, changes in the research and research environment that have occurred and how the research cooperation programme between Sweden and Uganda has contributed to that change.

B. Scope and focus of research cooperation

Is the research cooperation programme consistent with MAK policy and development priorities, needs and institutional capacity?

Are the research projects in the programme relevant to the development goals of Uganda, especially in light of the aim to reduce poverty in the country.

Analyse and describe the relevance of the programme in relation to other programmes to strengthen research capacity at the university, including funding from other donors.

Describe unintended effects, i.e. "spin-offs" from the research cooperation programme, good or bad, and factors that have accounted for these effects.

Assess the sustainability of research and research training at MAK if and when the research cooperation programme supported by Sida ends.

C. Institutional administration and research management

Describe the present research management system at the university, comparing it with the general situation at the start of the research cooperation programme and assess improvements since 2000 and problems that remain. Also describe why the problems remain.

Describe to what extent the research cooperation programme has contributed to improved research management. In what way has the capacity for policy/strategy development, financial administration, procurement, research management and research dissemination increased? How well is it suited to today's global and changing environment?

Describe changes in the university strategies and priorities for research and research training, and ways in which the research cooperation programme has contributed to improving the strategically environment for research.

Describe ways in which the governance and organisational structure of the research cooperation programme and of the financial and research management, positively and negatively have influenced the development of research capacity within the programme.

Describe to what extent donor coordination has been implemented and/or improved from the side of the university, but also among donors to the university.

D. Research training

Analyse available institutional data as the basis for describing achievements in research training in the research cooperation programme in terms of outputs; number of students enrolled, general progress and number of graduated PhD and MSc students. Time needed for completion of PhD studies and reasons for having difficulties to finalize studies or leaving the programme.

In what ways has the slogan "to support the supervisor to supervise" been realised, or not?
Describe how the role of the supervisor changed.

For understanding the effectiveness of the cooperation. To what extent and how has the research training contributed to the achievement of research project specific goals and objectives? has it influenced the overall research culture, the MSc and undergraduate training of the university? What are the reasons for achievements or non-achievements of project specific goals and objectives? What can be done to make the support more effective?

How has the research cooperation programme impacted on academic promotions at the university and to what extent has Post-doc[31] training been conducted and how has these programmes been designed and executed?

E. Research capacity

Assess to what extent the programme has contributed to research capacity at the institution and in Uganda, as well as to creating a "critical mass" of competent researchers in specific areas.

Describe ways in which the research cooperation programme has contributed to viable and sustainable research environments, and elements of research environments that are not yet in place or likely to be sustainable.

How has the programme increased the capacity to formulate research problems and proposals as well as design research projects and attract external research funding? Describe the role and impact of the Faculty and University research funds?

F. Research environments and infrastructure

Asses the adequacy, functionality (use and maintenance) and impact of the research facilities (laboratories, Demographic Surveillance Site), equipment and infrastructure (ICT infrastructure and management and Library research and services) that the programme has contributed.

G. Research output

Asses the applicability of the research project results obtained from a Ugandan and developing country perspective.

Asses the research conducted and results obtained, in terms of publications in high ranking international scientific journals.

H. Collaboration

Asses to what extent regional and international long term research collaborations have been established and more specifically, how Ugandan and Swedish researchers have interacted and benefitted/or not, from them.

I. Relationship between funding and financial management to programme achievements

Could more results and better outcome have been achieved with the same resources?

To what extent can the costs of the research cooperation programme be justified by its results?

Should the resources allocated to the research cooperation programme have been used for other, more worthwhile, purpose within the bilateral research cooperation support to Uganda to produce a better outcome?

J. Gender mainstreaming

What has the impact been at the university level of the support to the Gender Mainstreaming Division?

Asses other considerations or viewpoints which may be of importance for the research cooperation.

[31] PhD's graduating with support from the research cooperation programme.

5 Recommendations and Lessons Learnt for the Future

The evaluation shall provide *Sida* with the following recommendations:

- How can present research cooperation with Uganda be improved and made more effective?
- How can the research cooperation's contribution to viable and sustainable research environments be further improved?
- How can the research cooperation's contribution to improved research management be enhanced?

The evaluation shall provide *MAK* with the following recommendations:

- How can the programme agreement be improved to ensure better performance by MAK?
- How can support to research at MAK be harmonised to ensure a better research environment at MAK?
- How can timely implementation of the projects in the programme be ensured?
- How can MAK play a stronger role in developing Uganda's research agenda?

The evaluations shall also include a section on lessons learned that include general conclusions that have a potential for wider application and use.

6 Methodology

The evaluation is seen as a process for learning and improvement and thus must be based on *participatory* evaluation methods. This implies that representative samples of stakeholders, e.g. PhD students, supervisors (both Ugandan and Swedish), the Steering Committee, shall be consulted through out the evaluation process and comment upon and validate the draft evaluation report before it is finalised. Comments should be considered before the final evaluation report is completed. The evaluation team should describe which groups that have been consulted and why they were selected.

Sida will provide necessary information and documentation to the evaluators about the programmes.

The methodology to be used must be identified and elaborated by the evaluators, but will include:

– Document review and analysis,
– Semi-structured interviews using interview instruments, with individuals and groups, in Uganda and Sweden,
– Focus group interviews,
– Surveys,
– Telephone communication and e-mails.

All conclusions should be supported by data and if not, it should be stated that the conclusions are based on the opinion of the authors.

The methodology used shall be described in more detail and annexed to the final report.

The evaluation should follow the DAC Evaluation Quality Standards[32].

[32] Can be found at http://www.oecd.org/dataoecd/30/62/36596604.pdf

7 Work Plan and Schedule

The evaluation will be carried out between January and June, 2009. This is the suggested work plan.

Activity	Period	Date	Time duration						
			Original days[33]			Additional days[34]			
			JT	PF	EJ	JT	PF	EJ	NK
1. Preparations	Dec–Feb		10	10	15	–	10	–	10
2. Travel to Uganda	Feb–March	16/2–7/3 (PF) 23/2–9/3 (EJ) 1/3–13/3 (JT)	15	20	15	–	–	–	19
3. Interviews in Sweden	March	9–30/3	–	–	–	–	–	5	–
3. Report writing Draft report	April	15/4	5	–	–	10	30	15	–
4. Presentation of findings at Sida	May	20/5	–	–	–	1	1	1	–
5. Presentation of findings at MAK	June	2/6	–	–	–	6	–	6	1
6. Finalising Report	May–June	15/6				4	12	9	–
Total			**30**	**30**	**30**	**21**	**53**	**36**	**30**

8 Reporting

A *draft evaluation* report should be submitted electronically to Sida no later than, 15 April, 2009. Two hard copies of the draft evaluation report must also be distributed to Makerere University and to the Embassy of Sweden in Kampala, no later than 15 April, 2009. Two *presentations* must be held where the draft report ought to be presented and discussed; one at Sida in the second half of May 2009 with participation of representatives from the Swedish collaborating partners and Sida and a second in Uganda with participation of the Ugandan stakeholders in June, 2009.

The *final evaluation report* shall be submitted to Sida no later than 15 June, 2009 in electronic form in Microsoft Word for Windows.

The Team will have the responsibility to develop the draft report and to conclude the final document to Sida. The report should be written in English and should not exceed 40 pages excluding annexes. The evaluation report should also consider the report format presented in Annex B of the Sida Evaluation Manual "Looking back, moving forward" and a "Information to the Publication Database" form should be completed and submitted to Sida.

The evaluators should adhere to the terminological conventions of the OECD/DAC Glossary on Evaluation and Results-Based Management as far as possible. The report must begin with an Executive Summary and close with a section of Conclusions, Lessons learned and Recommendations.

Subject to Sida's decision the report may be published and distributed within the Sida Evaluation series.

[33] Included in contracts C75428 (EJ), C75429 (PF) and C75430 (JT) signed Dec 2005.

[34] To be included in amendments of the above contracts from 2005. However, this does not pertain to a *new* contract to be signed with Mr Nelson Kakande.

9 Evaluation Team

The evaluation will be conducted by a team consisting of Eva Johansson (Swedish University of Agricultural Sciences), Phyllis Freeman (Centre for International Health, Boston University), Jerker Thorvaldsson (Freelance Consultant of Thorvaldssons Konsult- & Revisionsbyrå) and Nelson Kakande, Local Research Assistant. All in the evaluation team (except NK) have been part of a monitoring and evaluation team that has followed the research cooperation programme in Uganda since 2006 with the purpose to provide continuous scientific and financial monitoring of the research cooperation programme at MAK during the current agreement period (1 July 2005 to June 2009).

The monitoring was intended to assist MAK to:

- Increase clarity of planning/reporting documents,
- Improve reporting of research results and other outcomes, and
- Develop and institutionalize a continuous form of self-assessment of progress and challenges in strengthening research capacity.

The monitoring was intended to assist the Sida by:

- Providing yearly reports, independent of MAK, on progress within the programme, and
- Provide Sida with a final evaluation of the research cooperation programme at the end of the monitoring/agreement period.

Appendix 2 New Evaluation Tool: Research Impact Summaries

1. Pharmacokinetics and safety of new therapies for the two major infectious diseases in Uganda: Malaria and HIV/AIDS

	Clinical Pharmacology, Faculty of Medicine, Key Informant: Dr Paul Waako	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** To develop research capacity, generate and disseminate information on pharmacokinetics and safety of new therapies for malaria and HIV/AIDS.	2000
	Geopolitical context: Uganda	
	Funders and Funding Process: USAID and Sida/SAREC	
	Budget: $100,000/year for 8 years	2001–2008
Research Project Evolution	**How it started:** Researchers' response to introduction of new drugs for malaria and HIV/AIDS for use in large numbers of patients across Uganda.	2000–2008
	Research methods used: Survey, evaluation studies (home-based management of malaria[35]), field studies to determine population pharmakinetics, clinical studies to investigate interactions between anti retroviral and TB drugs, survey of information available to clinicians, assessed need for information service[36], laboratory-based investigation to measure concentration of drugs in body fluids.	2004
	Key project events/concerns: At the time of planning the study artemisinin combination therapy was being proposed for treatment of malaria to reduce drug resistance, and the scale up of antiretroviral treatment for HIV/AIDS was being planned. Uganda began to scale up antiretroviral treatment for HIV from 1000 patients (2000) to 150,000 (2008). Uganda changed malaria treatment to embrace artemisinin combination therapies, and Ministry of Health called for strengthening of pharmaco vigilance network for identifying adverse events of all types.	Information centre 2004 Laboratory 2004
	Main findings/recommendations: Increasing the dose of sulphadoxine/pyrimethamine (SP) improves efficacy and maintains safety of chloroquine-SP treatment for malaria.[37] Serious deficiency in information available to clinicians – need a medicine information service to fill this gap and to monitor adverse events.	
	Result: Set up free drug information center (appointed a teaching assistant to be the desk officer). Established a full function pharmakoinetics laboratory in Department of Pharmacology with Sida funds.	
Networks Involved	**Research collaborators:** Karolinska Institutet, Division of Clinical Pharmacology (principal partner/Sida funded); World Health Organization (country office and Geneva – bioequivalence task force support from Geneva – funded 2 studies and short courses) as part of network; Management Sciences for Health (USA), (organizing team to respond to RFA on Essential medicines supply chain in Uganda-March 2009 deadline); Muhimbili University of Health and Allied Sciences, Tanzania (also Sida funded) came for a week to learn how to operate drug information service and Pharmacokinetics Laboratory; University of Edinburgh, UK and University of Ghent, Belgium (partners for EU grant application Framework Program 7 – Under review); University of Capetown-joint application for Wellcome Trust grant-not successful – but can apply together for other funding.	

[35] By Sida-sponsored PhD student, Jesca Nsungwa
[36] By Sida-sponsored PhD student, Winnifred Tumwikirize
[37] By Sida-sponosred PhD student, Celestino Obua

Clinical Pharmacology, Faculty of Medicine, Key Informant: Dr Paul Waako		
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Publications:** 1. Ntale M, Mahindi M, Ogwal-Okeng JW, Gustafsson LL, Beck O. A field-adapted HPLC method for determination of amodiaquine and its metabolite in whole blood dried on filter paper. J Chromatogr B Analyt Technol Biomed Life Sci. 2007. 2. Obua C, Ntale M, Lundblad M.S, Mahindi M, Gustafsson L.L Ogwal-Okeng J.W, Anokbonggo W.W and Hellgren U. Pharmacokinetic interactions between chloroquine, sulfadoxine and pyrimethamine and their bioequivalence in a generic fixed-dose combination in healthy volunteers in Uganda. Afr Health Sci. 2006; 6: 86–92. 3. Obua C, Gustafsson L.L, Aguttu C, Anokbonggo W.W, Ogwal-Okeng J.W, Chiria J, Hellgren U. Improved efficacy with amodiaquine instead of chloroquine in sulfadoxine/pyrimethamine combination treatment of falciparum malaria in Uganda: experience with fixed-dose formulation. Acta Tropica 2006; 100: 142–50. 4. Obua C, Hellgren U, Ntale M, Gustafsson LL, Ogwal-Okeng JW, Gordi T, Jerling M. Population pharmacokinetics of chloroquine and sulfadoxine and treatment response in children with malaria: suggestions for an improved dose regimen. Br J Clin Pharmacol 2008; 65: 493–501. 5. Musoke D, Obua C, Waako PJ. Assessment of the Drug Storage Facilities and Quality of Generic Co-Formulation Tablets (Stavudine, Lamivudine, Niverapine) at HIV/AIDS Treatment Centres in Uganda. Res J Med Sci 2008; 2(3): 159–162. 6. Obua C, Ntale M, Ogwal-Okeng JW, Gustafsson LL, Hellgren U, Petzold MG. Impact of nutritional status on fixed-dose chloroquine and sulfadoxine/pyrimethamine combination treatment of malaria in Ugandan children. Int J Trop Med 2008; 3(3): 53–59. 7. M. Malm, S. Römsing, C. Obua, Y. Bergqvist. Determination of lamivudine, zidovudine and nevirapine, in capillary blood sampled on filter paper, by liquid chromatography. Journal of Chromatographic Science (Accepted August 2008, in press). 8. J. Miura, C. Obua, C. Abbo, S. Kaneko, T. Tateishi. Cytochrome P450 2C19 Genetic Polymorphisms in Ugandans. European Journal of Clinical Pharmacology, 2008; DOI 10.1007/s00228-008-0583-6 9. J. Byakika-Tusiime, L. W. Chinn, J. H. Oyugi, C. Obua, D. R. Bangsberg and D. L. Kroetz. Steady State Bioequivalence of Generic and Innovator Formulations of Stavudine, Lamivudine, and Nevirapine in HIV-Infected Ugandan Adults. PlosOne, 2008; 3(12): e3981. 10. P. J Waako, R. Odoi-Adome, C. Obua, E.a Owino, W. Tumwikirize, J. Ogwal-Okeng, Willy W Anokbonggo, L. Matowe and O. Aupont. Existing capacity to manage pharmaceuticals and related commodities in East Africa: an assessment with specific reference to antiretroviral therapy. Human Resources for Health (Accepted Jan 2009)	
Research-related impact	Establishment of Laboratory for future research, and Drug Information Service as basis for adverse events surveillance for malaria and HIV/AIDS treatment.	
Policy Impacts	Members of this research group were asked to sit on key national policy formulation bodies. Example: National Drug Authority Technical Committees: National Pharmaco Vigilence Committee (Waako and Ogwal-Okeng) and Traditional Medicines Committee (Waako) (to consider which substances and how to register traditional medicines)	2006
Service Impacts	**Laboratory:** Government of Uganda required bioequivalence studies but no laboratory to do these existed in Uganda. Government set up a national task force to develop bioequivalence services in Uganda. Industry sent an evaluator from German Technical Corporation who recommended that this group participate—create laboratory at Makerere University, Department of Pharmacology/Medical School. The new lab is being used by Biochemistry department in studies of carotenoids in different food substances; by the National Agricultural Research Organization to study Vitamin A in food products. **Establishment of Drug Information Service** for Ugandan clinical providers; Expansion of service to include poisons. A Master of Science student under the medicines information centre is carrying out research on types and outcomes of poisoning in children at Mulago Hospital.	

Clinical Pharmacology, Faculty of Medicine, Key Informant: Dr Paul Waako		
Analysis Areas	**Key Topics**	**Key Dates**
Societal Impacts	Reducing burden of drug resistance to malaria drugs through rational drug use work with clinicians; and increase awareness and reporting of drug adverse events in society.	
Gains in research capacity	**Teaching staff:** Grown from 4 (all men) in 2000 to 12 in 2008 (3 women, 9 men). **Supervisory capacity:** Growth of PhD supervisory capacity from 2 to 4 people through training and promotions. **Research seminars:** Every Tuesday, 2–5 p.m. with attendance of at least 20, even if senior researchers away – great enthusiasm. **Publication:** from 0/year in 2000 to 10 per year 2008 for group. **Promotions:** Waako and Obua to Associate Professor. **Infrastructure:** Pharmacokinetics laboratory – for Makerere University (Medical School facility also used by Biochemistry Department in Faculty of Sciences) and other users (who pay bench fee – demand for laboratory time already greater than availability). **Development of Team:** Research group regularly includes senior researchers, PhD students, and Masters' students aided by PhD students – creates pool for future PhD candidates and academic staff. **Funding:** Attracting new competitive research funds and generating bench fees for lab (see above). **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library, collaboration with DSS, lab. **Research Award:** Assoc. Prof. Celestino Obua was awarded the British Journal of Clinical Pharmacology (BJCP) prize for BEST PAPER in the YEAR 2008, by an author in training. This award also came along with some cash prize of 1000 pounds and a One Year honorary membership of the British Pharmacological Society.	2000–2008

2. Rapid detection of Multi-drug resistant tuberculosis (MDRTB) and Molecular Epidemiology of Tuberculosis

Molecular Biology, Faculty of Medicine, Key Informant: Dr Moses Joloba		
Analysis Areas	**KeyTopics**	**Key Dates**
Research Project Focus and Funding	Topics/Research Area: TB Subprogram: **1. Rapid detection of Multi drug resistant tuberculosis (MDRTB)**[38] **Funders and Funding Process:** Sida, WHO/TDR, PEPFAR for referral system; Kampala Drug Survey, EU Dissemination in labs – Foundation Innovative New Drugs (FIND) – developing 4 labs (did Hain first at Mulago – now in National Lab, and at point of care in Mulago Hospital, Mbarara and Mbale; Italian building lab – 345,000Euros over 3 years – Gulu **Budget:** Sida $6,200,000 (Uganda 4.4 MSEK, both proj.rest to Swedish counterparts),WHO/TDR $32,000 over 3 years; EU: 70,000 Euros; CDC-PEPFAR $100,000USD annually for 3 years **Geopolitical context:** Uganda, first in Kampala. **2. Molecular Epidemiology of tuberculosis**[39] **Funders and Funding Process:** Sida; also, student partly funded by WHO grant until employed by Makerere University. **Budget:** Sida (see above); WHO: $6000USD for 2 years; NIH: $400USD/mo for 2 years	2005 Phase 2 – actual start 2006 as student away

[38] Sida supported PhD student: Freddie Bwanga
[39] Sida supported PhD student: Benon Asimwe

Molecular Biology, Faculty of Medicine, Key Informant: Dr Moses Joloba		
Analysis Areas	**KeyTopics**	**Key Dates**
Research Project Evolution	**How it started:** **1. Rapid detection:** MDRTB had been detected by conventional methods—but required a minimum of 3 months before diagnosis was ready, unacceptably long as time shorten survival and increase spread to MDRTB—a rapid method needed to both reduce transmission, increase survival – so, wrote a proposal for Sida – recruited PhD student. **Research methods used:** **1. Rapid detection:** Knew from literature other methods existed, but rapid ones had never been evaluated in a developing country, and even WHO skeptical about whether they could be used successfully – so this needed to be evaluated. **Meta-analysis:** Reviewed experience with all rapid methods, scales, grading; identified 15 methods for a close look, then selected 4 most promising for Ugandan setting. **2. Molecular epidemiology:** Joloba finished his Masters, wanted to know what species of TB in Uganda; first study conducted with biochemical methods. New techniques came: molecular approach likely to give clearer results. Went to one district of Kampala to conduct a cross sectional study. Shipped isolates to Germany where he had done Masters work, found biochemical approach gave inaccurate results; then showed correct species in Kampala using molecular epidemiologic methods. **Key project events/concerns:** **1. Rapid detection:** Ethical concerns about detecting MDRTB before Uganda had any means to treat individuals and manage programs to reduce transmission and prolong life. Results of detection method in Uganda were so positive that investigators had to stop the evaluation and implement right away. Dr. Joloba is simultaneously head of the research lab at the Medical School, and the National Reference Laboratory – both advantages and challenge to heading both labs. **2. Molecular epidemiology:** The study was planned to be prospective and to include smear negative TB suspects. It would answer many questions regarding role of MDRTB species and genotypes in response to therapy. Role of vaccine in protection and transmission potential. However, the budget was reduced and project changed to a cross sectional study design instead. **Main findings/recommendations:** 1. Hain test can detect MDRTB in one day, results for clinicians and patients out in 2 days with paperwork; sensitivity and specificity very good, about 98%. **Result:** WHO moved from doubting if test could be done in developing country to recommending use of Hain test by the end of 2008. 2. Study #1: 70% in one district in Kampala all shared one genotype MTB; then studied with regard to HIV, markers.	2006 – sent for publication 2008 2007
Networks Involved	**Research collaborators:** London School Hygiene and Tropical Medicine (a post doctoral fellow came to Uganda); Hain came to certify quality of work (bringing worldwide credibility); WHO/TDR, NIH: NIAID+ TB research unit (helped to build microbiology lab – still doesn't have Sida funded equipment – $ there since 2005 but procurement problem; Ministry of Health; IAULTD, CDC PEPFAR	

	Molecular Biology, Faculty of Medicine, Key Informant: Dr Moses Joloba	
Analysis Areas	**KeyTopics**	**Key Dates**
Main Research product/outputs	**Publications:** **1. Rapid Detection:** F. Bwanga, S. Hoffner,M. Hailes, M. Joloba. Comparison of direct with conventional indirect susceptibility testing for multi-drug resistant tuberculosis: A meta analysis **2. Molecular Epidemiology:** Asiimwe BB, Joloba ML, Ghebremichael S, Koivula T, Kateete DP, Katabazi FA, Pennhag A, Petersson R, Kallenius (2009). DNA restriction fragment length polymorphism analysis of Mycobacterium tuberculosis isolates from HIV-seropositive and HIV-seronegative patients in Kampala, Uganda. BMC Infect Dis. 9:12 Asiimwe, B.B., J. Asiimwe, G. Kallenius, S. Ghebremichael, M. L. Joloba and T. Koivula (2008).Molecular characterization of Mycobacterium bovis isolates from cattle carcasses at a city slaughterhouse in Uganda. The Veterinary Record, in press. Asiimwe BB, Ghebremichael S, Kallenius G, Koivula T, Joloba ML (2008). Mycobacterium tuberculosis spoligotypes and drug susceptibility pattern of isolates from tuberculosis patients in peri-urban Kampala, Uganda. BMC Infect Dis. 28; 8: 101. Asiimwe BB, Koivula T, Kallenius G, Huard RC, Ghebremichael S, Asiimwe J, Joloba ML. Mycobacterium tuberculosis Uganda Genotype is the predominant cause of TB in Kampala, Uganda. Int J Tuberc Lung Dis 2008; 12(3): 1–6.	
Research-related impact	**1. Rapid Detection:** Preliminary findings: 13% of all TB patients in retreatment have MDRTB+1% of new cases are MDRTB (not all data in). **2. Molecular epidemiology:** Predominance of one genotype in Kampala raises questions: What explains why one pregenotype dominant for 70% of the population when so many other genotypes are available? How would it impact efficacy of the vaccine? Directly Observed Therapy (DOTS-first line treatment) – most respond, but those that don't – is it related to genotype? What about other parts of country? How to test efficacy of a new TB vaccine at Iganga/Mayuge DSS had not considered the relationship of the vaccine to specific genotypes. Now the two lines of work will converge at DSS with Gates team and with Swedish collaborator in EDCTP and AERAS-Vaccine Trial Group.	
Policy Impacts	1. National Policy change to detect, treat, manage MDRTB: Wrote guidelines for MDRTB detection and treatment; now preparing training manual. 2. Not yet – could influence vaccine policy.	2008
Service Impacts	**1. Rapid detection.** Lab capacity; 25% coverage so far in Kampala, by end 2009 plan for 100% cover in Uganda. A second proposal to start Rapid MDR-TB detection laboratories in: Gulu (N), Mbarara (SW), Mbale (East). May use Global Fund to secure second line drugs but no treatment facility available; so working with National TB and Leprosy Program (Ministry of Health) to expand treatment facility. Centralize first in Kampala as that is where the expertise is – pilot sites will refer patients to Mulago. Medical school research lab partnered with National TB and Leprosy Reference Laboratory to strengthen National lab: now recognized as national facility. **2. Molecular Epidemiology:** MTB genotypes in Uganda being considered to be included in TB vaccines to be tested in Uganda. Information being used to design TB studies that will include the MTB genotype as a variable.	
Societal Impacts	**1. Anticipated:** reduce transmission and decrease transmission of MDRTB. 2. Might explain why BCG vaccine not so efficacious, and lead to a more effective vaccine to reduce transmission of TB, which would save many lives in a very cost-effective way.	

Molecular Biology, Faculty of Medicine, Key Informant: Dr Moses Joloba		
Analysis Areas	**KeyTopics**	**Key Dates**
Gains in research capacity	**Teaching staff:** B. Asiimwe started with Masters now has PhD; F. Bwanga started with Masters soon to have PhD **Publication:** Asiimwe previously had one publication in 2003. But achieved 5 publications in four years. Out of the 10 publications the PI (M. Joloba) had in 2008, 5 were from work supported by Sida. **Promotions:** Asiimwe has been Assistant Lecturer recommended to become Lecturer. **Infrastructure:** Created conditions for partner to build new research lab in 6 weeks on Mulago campus (operating outside constraints of Makerere University building and procurement requirements—lab up in 6 weeks; begins operation March 2009). **Development of Team:** By encouraging participation of all team members in all the affairs of the project incl., workplans, budgeting, implementation/expenditure, monitoring and corrective actions there is a strong sense of ownership and motivation. Transparency has been a key to sustaining the team. **Funding:** Attracted funding from several new sources, including clinical trial groups (EDCTP and AERAS) in DSS vaccine study, the TB Research Unit (TBRU), Welcome Trust and US NIH. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library, DSS, lab.	2000–2008

3. Mental Health Problems of Conflict and HIV/AIDS: Depression

Department of Psychiatry, Faculty of Medicine, Key Informant: Prof. Seggane Musisi		
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Mental health problems of conflict and HIV/AIDS. Earlier studies had found depression, post traumatic stress disorder and psychotic illnesses to be prominent in war-traumatized and HIV-infected populations. Phase I: Depressive Illness In Lake Victoria Basin. Phase II: Psychotic disorders in the N-W crescent region of Lake Victoria basin. **Geopolitical context:** Lake Victoria basin and other water basins in Uganda; comparisons in Malawi **Funders and Funding Process:** Mainly Sida/SAREC. Also grants from Fulbright, NIH, collaborations with Johns Hopkins through Infectious Disease Institute, Boston School of Public Health ("ARCH" Applied Research for Child Health). B**udget:** Sida: Phase I 700,000SEK, Phase II 400,000SEK, Fulbright grant $200,000USD NIH: $ 2 million USD – with Rand Corporation: Makerere University portion for 2008/9 $60,000USD, Boston University: $20,000USD	2000–2004 2005–2008

[40] Sida-supported PhD student, ES Okello
[41] Sida-supported PhD student, EBL Ovuga
[42] Sida-supported PhD student, WW Muhwezi
[43] Sida-supported PhD student, JM Tugumisirize

	Department of Psychiatry, Faculty of Medicine, Key Informant: Prof. Seggane Musisi	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Evolution	**How it started:** Department of Psychiatry had worked on war conflict –related mental health prior to 2000, mainly war related trauma. This led to studies on causes, treatments, and outcomes depressive illness. Realization of extent of HIV/AIDS among depressed groups added another dimension to this research. This led to four studies. **Research methods used** (for each of the 4 studies): 1. Conceptualisation of Depression: How do people conceptualize and present depressive symptomotology and hence help-seeking behavior?[40] Participatory and qualitative research methods: focus group discussions, key informant interviews. 2. Measuring depression: What culturally sensitive instruments could be used to assess depression in Uganda settings?[41] Methods: Devising, developing and validating of culturally sensitive research instrument based on comparing to 'gold standard' instruments that were developed in the west. 3. Life events: What events in peoples lives (especially in families) influence the onset and progression of depression, and how do families cope?[42] Method: Cross sectional surveys of population groups in primary health care centers; comparing life events among those who had developed depression and those who had not developed depression. 4. Women &Depression: What factors explain high prevalence of depression among women?[43] Method: Comparison of matrilineal societies in S. Malawi to patrilineal societies in N Malawi and in Uganda. **Key project events/concerns:** Uganda Ministry of Health strategized a new policy of decentralized health care (in 5 year health strategic plans 2000–05; 2005–10) with minimum health care package which included mental health care. The findings in these studies should impact delivery of health care in these primary care settings **Main findings/recommendations/results:** 1. Conceptualisation of Depression. People in Uganda express depressive symptomology as mainly somatic (physical) complaints, as diseases of 'troublesome thoughts', and when severe (psychotic), as diseases of ancestral spirits (Clan spirits). If or when associated with physical illness, then the physical illness is blamed for the depression, e.g. HIV/AIDS. These factors should be considered in the training of health care providers to recognize and diagnose depression in primary health care settings, and to respond, taking into account these culturally specific issues. 2. Measuring depression: Response Inventory to Stressful Life Events (RISLE) is a valid instrument to detect depression and suicidal ideation in a culturally sensitive way in Uganda. Recommendation: Use a simpler version of RISLE for screening depression in primary health care. 3. Life events: The extended family system in Africa system is stretched beyond limits by HIV/AIDS and is no longer capable of supporting individuals in times of stressful life events. Patients presenting numerous physical complains in primary care are more likely to be depressed than simply physically ill. Recommendation: Change policy so as to train mental health workers in/for all settings from village level up to recognize and treat depression. 4. Women & Depression: Higher prevalence of depression in women in patrilineal as compared to matrilineal societies. Gender specific programs needed to protect women in highly patriarchical societies such as those in Uganda e.g limit impact of family problems, domestic violence, and spread of HIV/AIDS.	Pre 2000 2000–08
Networks Involved	**Research collaborators:** Karolinska Institutet and Göteborg Univ., Lund Univ., Johns Hopkins Hospital, Norwegian University of Science and Technology. Uganda: IDI, Mild May Center for Treatment HIV, district health services	

Department of Psychiatry, Faculty of Medicine, Key Informant: Prof. Seggane Musisi		
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Publications:** **1. Concepts.** Okello, E., Ekbalad, S. Lay concepts of Depression among the Baganda of Uganda: A pilot study. J Transcultural Psychiatry, 2006:43(2):287-313 Okello, E., Musisi S. Depression as a clan illness (eByekika): An Indigenous Model of Psychotic Depression Among the Baganda of Uganda. J World Cultural Psychiatry Research Review, 2006:1(2):60-73 **2. Measuring Depression:** E. Ovuga, J. Boardman & D. Wasserman. Prevalence of suicide ideation in two districts of Uganda. Archives of Suicide Research E. Ovuga, J. Boardman & D. Wasserman. The prevalence of depression in two districts of Uganda. Social Psychiatry and Psychiatric Epidemiology E. Ovuga, J. Boardman & D. Wasserman. Student mental health at Makerere University. E. Ovuga, J. Boardman & D. Wasserman. The Response Inventory for Stressful Life Events (RISLE) I: Refinement of the 100-item Version. African Health Sciences E. Ovuga, J. Boardman & D. Wasserman. The Response Inventory for Stressful Life Events (RISLE) II: Validation of the 36-item Version. African Health Sciences **3. Life events:** Muhwezi, W. W., Agren, H., & Musisi, S. Detection of major depression in Ugandan primary health care settings using simple questions from a subjective well-being (SWB) subscale.Soc Psychiatry Psychiatr Epidemiol, 2007: 42(1), 61-69. Muhwezi, W. W., Agren, H., Neema, S., Maganda, A.K., & Musisi, S. Life events associated with major depression in Ugandan Primary Health Care (PHC) Patients: Issues of cultural specificity. Accepted in June 2007 for publication by International Journal of Social Psychiatry. Muhwezi, W. W., Agren, H., Neema, S., Musisi, S., & Maganda, A. K. Life events and depression in the context of the changing African family: The case of Uganda. World Cultural Psychiatry Research Review (Official Journal of the World Association of Cultural Psychiatry), 2007 Jan: 10-26. Muhwezi W. W., Okello E.S., Neema S., and Musisi S.,Caregivers' Experiences With Major Depression Concealed by Physical Illness in Patients Recruited From Central Ugandan Primary Health Care Centers. Qualitative Health Research, Volume 18 Number 8 August 2008. **Publications from Sida/SAREC supported short grants** Nakimuli-Mpungu E, Musisi S, Katabira E et al (2006) Primary Mania Vs HIV-Related Secondary Mania in Uganda. Am J. Psychiatry 163: 8 August 2006. [Won the best APA award for a young researcher for that year; later Nakimuli-Mpungu was awarded a Fullbright grant leading to a PhD at Johns Hopkins Hospital. It is important to show this article.] Submitted Manuscripts: Under review by African Health Sciences Journal: Turiho A., Okello E.S., Musisi S.,: The Emotional And Behavioral Responses To Sexual Harassment Among Female Students At Makerere University. Nakku J., Okello E S., Tugumisirize J., Musisi S., Validating the Beck Depression Inventory (BDI) In The Ugandan Setting. – Okello, E., Ekblad, S., Neema, S. Beliefs and practices of alternative healers regarding non-psychotic depression: Health policy implications for effective use of scarce health resources in Uganda. Okello, E., Neema, S. Explanatory models and help seeking behaviour: pathways to psychiatric care among patients admitted for depression in Mulago hospital, Kampala, Uganda.	
Research-related impact	**1. Concepts.** Basis for training of all primary health care providers to this in culturally sensitive way	
Policy Impacts	**3. Life Events:** Second strategic plan of Ministry of Health, 2005 – called for more training of personnel for mental health in primary health care	2006

	Department of Psychiatry, Faculty of Medicine, Key Informant: Prof. Seggane Musisi	
Analysis Areas	**Key Topics**	**Key Dates**
Service Impacts	**1. Concepts.** As national policy calls for mental health is to be part of primary care, district practice needs training for staff to recognize depression and be prepared to treat. 2. Measuring Depression. Screening tool being used routinely in North West Uganda in Adjumani district. 4. Some family oriented programs advised to alleviate gender-specific problems, especially domestic violence against women and spread of HIV/AIDS.	New Ministry of Health strategic five year plan – 2005/6–2010/11
Societal Impacts	**2. Measuring Depression.** Able to influence treatment of mental health care to detect suicide risk; population data in North Western districts of Uganda show rates of completed suicides as going down.	2007/8
Gains in research capacity	**Research activity:** No active department-wide research projects at start. Now, almost every member of academic staff active in research collaborations: Sida, NIH, Trauma, Milleunium Research Project, Children and Women. Department ready to extend studies to more vulnerable populations (women, children, elderly, refugees and displaced people).	Pre 2000 2008–
	Teaching staff: Started with 1 Associate Professor, 1 Senior lecturer, 1 Lecturer, 3 Teaching Assistants (2 of 6 were women); Now: 1 Full Professor, 3 Senior lecturers, 4 Lecturers, 1 Assistant lecturer, 1 Teaching Assistant, (4 of 10 are women, and at higher ranks than in 2000).	
	Promotions: Prof Musisi to full Professor, Dr Okello to Senior Lecturer, Dr Nakasujja to Senior Lecturer, Dr. Abbo to full lecturer, Dr Akena, to Teaching Assistant	
	Supervisors: Started with none—recruited one into program at start; now 2 senior researchers; 4 PhD holding, potential PhD supervisors; 2 recent PhDs who can start after 2 years post degree years, can assist now as Assistant supervisors.	2000
	Approach to supervision: Changed from adversarial to more friendly, mentoring approach.	2008
	Regular research seminars: Department (monthly) and faculty wide (2 per semester)	
	Development of Team: A comprehensive research team known as the Mental Health Research Club has been launched in the Dept of Psychiatry. It has a regular paid up membership, a patron, and is in the process of registering to become an NGO so that its activities can spread out nationally and beyond peoples trainings.	2007–2008
	Heavy reliance on other elements of Infrastructure (Sida supported): ICT, Library.	
	Awards: Fulbright, Sanofi/Aventis, Best research papers and poster presentations at conferences.	

4. Domestic Violence in Pregnant Women: Understanding for Prevention and Response

Human Reproduction/Faculty of Medicine, Key Informants: Prof Florence Mirembe and Dr. Dan K Kaye, PhD[44]		
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Domestic Violence in pregnant women **Geopolitical context:** Uganda **Funders and Funding Process:** Sida **Budget:** Estimate $60,000 year USD (field work, travel KI etc.)	2000–2006
	How it started: Battered, pregnant women in hospital: What is the effect on pregnancy, pregnancy outcomes? Initiated small study (before student in PhD training) to learn prevalence. Found very common: 30% of women in study had some degree of domestic violence, physical or mental, during pregnancy. Sida scholarship opportunity came, Dr. Dan Kaye decided to take on domestic violence and social context as his topic.	2001
	Research methods used: Cross sectional, descriptive study; Cohort comparison of pregnancy outcome in women for those who experienced domestic violence, and those who did not.; Case control study of women who induced abortion and those with spontaneous abortions – To assess exposure to domestic violence in pregnancy and before; In depth interviews and focus groups in community among general population to learn what factors related to domestic violence and what community resources exist to support women; did community associate domestic violence with negative consequences in pregnancy: low birth weight, trauma, induced abortions, pregnancy complications (rupture of membranes)?	2001 2004–2005 2003–2004
	What entry points exist for talking to men and communities around them?	
	Key project events/concerns: National discussions began about domestic relations bill in Parliament 2001. Bill did not pass but discussions to mobilize communities, judicial system took place and "Sexual offences" bill passed was enacted in this time period (2002–3).	2002–2003
	Main findings/recommendations: Prevalence much higher than anticipated, especially common in first pregnancy and adolescents. Domestic violence associated with premature and low birth weight (small for dates) delivery. Women with induced abortions had higher prior exposure to domestic violence (many of those who chose abortion gave this reason). Social context: many interviewed thought domestic violence increases in pregnancy as women become temperamental (men tend to go out with other women, creating circumstances for domestic arguments and violence during pregnancy).	
	Many thought women's support groups were empowering women and supporting them; we found instead that women became empowered, but if they became 'rebellious' as a result, there were no structures of support, no protection or services.	2001
	Some men realize they should be more understanding, some willing to behave better.	2002/03
Networks Involved	Research collaborators: Department of Women and Gender Studies Makerere University main campus; Hope after Rape (NGO-Uganda); Center for Domestic Violence Prevention (1 km from Mulago Hospital), Raising Voices (International NGO)	

[44] Sida-supported PhD graduate: Dan K Kaye

Human Reproduction/Faculty of Medicine, Key Informants: Prof Florence Mirembe and Dr. Dan K Kaye, PhD[44]		
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Publications:** 1. Kaye D, Mirembe F, Bantebya G. Risk factors, nature and severity of domestic violence among women attending antenatal clinic in Mulago hospital, Kampala, Uganda. Cent Afr J Med 2002; 48 (5/6): 64–68 2. Kaye D. Gender inequality and domestic violence: Implications for human immuno-deficiency virus (HIV) prevention efforts. Africa Health Sciences Journal 2004 April; 4(1):38–42 3. Kaye D, Mirembe F, Bantebya G. Health provider' perceptions and practices regarding management of domestic violence in Mulago hospital, Uganda. African Health Sciences 2005; 5 (4): 315–318 4. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Implications of bride price for domestic violence and reproductive health in Wakiso District, Uganda. African Health Sciences 2005; 5: 300–303 5. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. The social construction and context of domestic violence in Wakiso District, Uganda. Culture, Health and Sexuality 2005; 7(6): 625–635 6. Kaye DK, Bantebya G, Johansson A, Ekstrom AM, Mirembe FM. Escaping the triple trap: Coping strategies of pregnant adolescent domestic violence survivors in Mulago Hospital, Kampala, Uganda. Scandinavian Journal of Public Health, 2007;35(2):180–186. 7. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Domestic violence as a risk factor for unwanted pregnancy and induced abortion in Mulago hospital, Kampala, Uganda Trop Med Int Health 2006; 11: 90–101 8. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Reasons, methods used and decision-making for pregnancy termination among adolescents and older women in Mulago hospital, Uganda.East Afr Med J 2005; 82: 579–585 9. Kaye DK. Community perception and experience of domestic violence and induced abortion in Wakiso district, Uganda. Qualitative Health Research 2006, 7: 507–512 10. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Domestic violence during pregnancy and risk of low birth weight and maternal complications: a prospective cohort study at Mulago Hospital, Uganda. Trop Med Int Health. 2006 Oct;11(10):1576–1584	
Research-related impact	Since 2006, the National Health Survey includes questions on domestic violence Studies also changed research approach at Makerere University to include social issues (now also part of medical curriculum for undergraduates and graduate students).	2006
Policy Impacts	WHO and Ministry of Health changed policies on management and prevention of sexual and gender based violence; researcher wrote guidelines for Ministry of Health that are now distributed. Ministry of Health developing guidelines to improve package of care for women and messages to communities about domestic violence and its effects, and how communities can help reduce domestic violence. (Changes promoted by advocacy from NGOs, women's groups, some who collaborated with researchers here.) Developing information for communities and policy makers on factors related to gender violence causing HIV acquisition.	
Service Impacts	Sensitized staff now look for domestic violence in hospital patients, and are improving prevention of HIV and treatment for patients suffering from gender-based violence. Anticipated service – outreach to S and SW of Kampala to prevent HIV acquisition based on better understanding of social context of domestic violence. NGO's changing to focus more on prevention of violence and HIV transmission by setting up women's shelters – and involving communities to support survivors so they can return to their villages.	
Societal Impacts	Anticipated: reduce gender-based violence; improve pregnancy outcomes, reduce HIV transmission.	

Human Reproduction/Faculty of Medicine, Key Informants: Prof Florence Mirembe and Dr. Dan K Kaye, PhD[44]		
Analysis Areas	**Key Topics**	**Key Dates**
Gains in research capacity	**Teaching staff** (Department of Obstetrics and Gynecology): 2000 Prof. Florence Mirembe was only woman. Recruitment opened last 3–4 years; added 11 staff, 5 are women. **Promotions:** Drs. Dan Kaye and Josaphat Byamigisha[45] promoted to Senior Lecturers; and the latter to Head of Department **Development of Research Team:** – From no team to substantial team, researchers able to concentrate in their areas of interest as sub-specialists, to bring along younger colleagues (in oncology, fetal medicine, general gynecology, reproductive health and infertility). Sub specialties became official in 2008. In 2000 no one saw need for PhD to teach obstetrics; now, although clinicians are exempt from PhD requirement, they want research opportunities, even if paid by Ministry of Health, not by Makerere University. This boosts the full department as researchers and supervisors. **Supervisory capacity:** Prof Mirembe only PhD in 2000 and had never supervised; Swedish collaborators helped; now 6 PhDs in reproductive health; 2–3 others to complete soon. Result is critical mass, solid group for supervision at different levels. – Eight more want to pursue PhD. **Collaboration:** Improved research links since 2000 with public health, clinical epidemiology, social sciences/gender, clinical pharmacology. Also supervising students in other units. Stimulating sister departments obs gyn to do research: Mbabarara University, Gulu; help them to start research at Masters' level; **Research seminars:** These were formed but are not very active-meet monthly. **Publication:** This increased from about 2 per year to about 12 per year for the whole subprogram. **Funding:** Emergency contraception study in communities; funds from Population Council (Dr. Josaphat Byamugisha); Proposal in to US NIH; Some funds from London School of Hygiene and Tropical Medicine (European and Developing Countries Clinical Trial Program, EDCTP); Big research grant from Millennium Science Initiative: HPV cancer survival among vaccinated girls – 2 PhD students and 4 MA – starting March 2009; Dan Kaye is (part time) research training coordinator on a project funded by Joint Clinical Research Centre to stimulate research environment for JCRC supported students. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library.	

[45] Sida-supported PhD student: Josaphat Byamigisha (completed Ph.D), now Department Head.

5. Emerging Disease and Social Impact: HIV

Faculty of Social Sciences: Emerging Disease and Social Impact, Key Informant: Prof Charles Rawbukwali		
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:**	
	1.Social impact of HIV—HIV as a cause of conflict and conflict as a cause of HIV transmission	2000–2004
	2. Implications of emergent disease, especially HIV, for sustainable development.	2005–2008/9
	Geopolitical context: Uganda, Lake Victoria region	
	Funders and Funding Process: Sida	2000–2004
	Budget: Phase I about 10,434,842 SEK; Phase II 15,960,000 SEK	2005–2008/9
Research Project Evolution	**How it started:** 1. Early inquiries about social impact led to recognition that HIV/AIDS was leaving many families without adult male members. 2. Findings in a study of impact of microbicide use on transmission rates of HIV found higher rate with use! Multi-site study ended and focus turned to increasing availability of ARV use as price dropped from 3,000,000UGS/month with initiatives of WHO, PEPFAR, Gates Foundation, Clinton Foundation.	2000
	Research methods used: Literature reviews; field studies using qualitative and quantitative methods.	
	Key project events/concerns: 1. Who was heading families as members died of HIV/AIDS; how were they coping? 2. Turned from study of microbicides to roll out of ARVs as drugs became more available. Concerned with exclusive focus on ARV/drug use, without simultaneous attention to prevention – as over-reliance on drugs, without behavior change to protect against transmission, could amplify the epidemic.	2000 2005
	Main findings/recommendations:	
	1. Studies in two districts revealed growing numbers of households headed by widows, or children; widows being evicted from land (when clansmen claimed it for the deceased man's clan). 2. Testing and provision of ARVs needs accompanying focus on counseling and behavior change: staying with one partner, use of condoms even while on ARVs.	2004
	Result: Indicated need for social support for widows and their children. Confirmed need for continued behavioural interventions: testing and counselling; ARVs alone insufficient to reduce rate of transmission.	2005–2008
Networks Involved	**Research collaborators:** Department of Sociology, Lund University, Sweden; Department of Anthropology, Case Western Reserve University, Cleveland Ohio, USA	

[46] Sida Supported PhD student: Swizen Kyomuhendo (second PhD student in this group, Jagwe, died).

Faculty of Social Sciences: Emerging Disease and Social Impact, Key Informant: Prof Charles Rawbukwali		
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Pubications:** 1. Rwabukwali, C.B. (2008) Gender, Poverty and AIDS Risk: Case Studies from Rural Uganda. In Feldman, Douglas A. (ed.), AIDS, Culture and Africa. Gainesville, Florida: University Press of Florida pp.239-254. 2. Akello, G., Reiss, R., Ovuga, E., Rwabukwali, C., Kabonesa, C., Richters, A. 2007 Primary School Children's Perspective on Common Diseases and Medicines used. Implications for School Healthcare Programmes and Priority Setting in Uganda. African Health Sciences Vol.7.No.2 pp. 74–80. 3. Rwabukwali, C.B. 2007 Ethics in Social Research: The Uganda Context. MAWAZO – The Journal of the Faculties of Arts and Social Sciences, Makerere University. Vol.8. No. 2. Pp.111–119. 4. McGrath, J.W., C.B. Rwabukwali, S. Rundall and D. Akurut 2006 Anticipated acceptability of a vaginal microbicide among women in urban Uganda. Makerere University Research Journal (MURJ) Vol.001: pp.93–107. 5. Rwabukwali, Charles and Swizen Kyomuhendo[46] 2004 Migrant Populations and the Spread of HIV/AIDS: The Case of Persons Displaced due to Armed Conflict in Uganda. In Confronting Twenty-First Century Challenges – Analysis and Re-dedications by National and International Scholars. Volume One. Edited by Ruth Mukama and Murindwa-Rutanga. Makerere University Printery pp.281–290. 6. Rwabukwali, C.B 2004 Female Circumcision in Africa: A Dilemma for Anthropology. Abuja Journal of Sociological Studies, Nigeria. Vol.2, No.1. pp 1–7 7. Rwabukwali, C.B 2001 Gender, Poverty and AIDS Risks: A View from Rural Uganda. Journal of Development and Society, Vol. 1 No.2 pp.68–77	
Research-related impact	**Change of focus for research:** universal access to ARVs for HIV/AIDS, unlike other viral diseases, still means no cure by drugs, only management; hence the need for continued behavioural interventions in terms of HIV testing and counselling.	
Policy Impacts	Ugandan Ministry of Health changed focus from testing and ARVs only to add prevention activities, through National AIDS Commission where Profs Kirumira & Rawbukwali co-chaired; They are part of group to develop the strategic plan 2008/2013 of the AIDS Information Centre. Swedish and the Ugandan researchers were instrumental in encouraging Makerere University to enact an AIDS prevention policy. Senior health policy makers, especially in the AIDS control programme in the Ministry of Health often cite the work of this group in informing policy aimed at HIV prevention.	2006
Service Impacts	Change in model of service delivery from testing and ARVs to service packages include counseling/advice on transmission risks, behavior change, including staying with single partner and use of condoms, even while using ARVs.	
Societal Impacts	Anticipated: Reduce rather than increase transmission while extending lifespan of those infected.	
Gains in research capacity	**Additional research and funding:** US National Institute of Health's training grant with Case Western Reserve University colleagues enabled inauguration of the Centre for Social Science Research on AIDS (CeSSRA), housed in the Faculty of Social Sciences. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library.	2000–2008

6. Urban Market Crop Waste

	Faculty of Agriculture, Key Informant: Prof Elly Sabiiti	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Utilization of Urban Market crop waste. Initiated the research of urban waste utilization, starting with animals, to: 1. Improve animal feeding technology; 2. Degrade waste quickly, 3. Avoid multiplication of insects around waste	
	Geopolitical context: Uganda	2000
	Funders and Funding Process: Sida/SAREC, Norad.	
	Budget: Numbers given are for the research group	
	Sida/SAREC, 7.54 SEK/year	
	Sida/SAREC, 1 million dollars/year	2000–2004
	Norad, $20 000 USD/4 years	2005–2009
	Several of the researchers in the research group have also some other grants although for other topics than this one.	2005–2008
	E.g. Elly Sabiiti; Rockefeller $30 000 USD/4 years	2004–2007
Research Project Evolution	**How it started:** Elly Sabiiti returned from PhD in Canada to Ugandan Institute of Ecology, Queens Elisabeth National Park until joining Makerere, as Lecturer to teach pasture agronomy. Taught 100% until 1987, then started research with USAID funds to re-build department since collapse during Amin regime. Sabiiti studied and restored pasture germ plasm at MURIK research Institute; also in absence of fertilizers, evaluated integration of legumes with crops. Research continuous since, one PhD-student finishing now, two master students. Waste research was a response to challenge: Land-fill by residences, foul odor, constant traffic of big garbage trucks; became opportunity to collaborate with Sweden with a cross-cutting team on waste. Dumping causes sickness, social problems and need for recirculation of nutrients. Team at Agriculture collaborates with Sweden, with Faculty of Technology and School of Public Health.	
	Research methods used: Surveys, interviews, experimental work: latin square design for animal feeding, random plot design for soil science.	
	Key project events/concerns: 1. Need for sustainable source of inexpensive animal food; 2. Need to degrade market waste near homes quickly, and to 3. Avoid multi-plication of insects around waste.	
	Main findings/recommendations:	
	How to produce feed for diary cows from waste, increasing milk supply and goat meat. (Will apply for a patent).	
	Developed a bio-fertilizer from waste to replace conventional fertilizer.	
	Developing large quantities of microbes as method for speeding degradation of waste.	
	Developed IPM-technology, incorporate waste in the soil to limit increase in insects.	
Collaboraros and Networks Involved	Research collaborators: Mainly Sweden/SLU. Also Edmonton Waste management centre of excellence in Canada (creation of center of excellence in waste manage-ment). Kampala City Council and with Talent Calls, a private supplier of compost and partner for producing more efficient composting. Nabugabo, garbage removal to Kitezi landfill. Faculty of Technology.	

	Faculty of Agriculture, Key Informant: Prof Elly Sabiiti	
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Publications:** 1. Katongole, C.B., Sabiiti, E.N., Bareeba, F.B. and Ledin, I., 2009. Performance of growing indigenous goats fed diets based on urban market crop wastes. Tropical Animal Health and Production. Online (DOI 10.1007/s11250-008-9193-7). 2. Katongole, CB and E.N. Sabiiti., 2008. Alternative feed base with stallfeeding: the key to reducing grazing /browsing presuure from natural grasslands in Uganda. Grassroots. Newsletter of the Grassland Society of Southern Africa.Vol 8(1), ISSN 101166122 3. Katongole, C, B., Bareeba, F.B, Sabiiti,E. N and I. Ledin., 2008. Nutritional Characterization of some Tropical Urban Market Crop Wastes. Animal Feed Science and Technology. 142(3):275–291. 4. Sabiiti, E. N., F. Bareeba, E. Sporndly, J.S. Tenywa, S. Ledin, E. Ottabong, S. Kyamanywa, B. Ekbom, J. Mugisha and L. Drake., 2005. Urban market garbage: a Hidden Resource for sustainable Urban/Peri Urban Agriculture and the Environment. The Uganda Journal. 50:102–109.	
Research-related impact	Findings (see above) inform other researchers for investigation relevant worldwide.	
Policy Impacts	Influenced policy in the parliament to ban a certain type of plastic bags. Urban farming has been legalized by KCC, a collaboration with Kampala City Council has partly led to this.	
Service Impacts	Change in garbage disposal relieves burden on residential communities.	
Societal Impacts	Created awareness through media to public and policy makers through articles, community workshops, and a TV documentary. Many peri-urban farmers now use waste for feeding livestock. Women engaged in sorting and selling garbage not sold previously, creating informal trade for bio-garbage.	
Gains in research capacity	**Teaching staff:** Grown from 4 (all men) in 2000 to 9 (6 men and 3 women) in 2008. **Supervisory capacity:** Grown from 2 men 2000 to 3 with master supervisory capacity 2008, and additionally 5 (3 women) with PhD supervisory capacity. **Research seminars:** from 0/year 2000 to 5/semester 2008 (irregular schedule). Dean recently appointed a seminar coordinator. **Publication:** from 1–2/year 2000 to 10 per year 2008. **Promotions:** One to full professor; one to lecturer since 2000. One appointed TWAS (Third World Academy of Sciences) research professor; one appointed Lecturer; one employed on permanent terms. **Infrastructure:** The lab facilities developed, including machine for rapid analysis of feed. Lap-tops, desk-top, furniture, filing cabinets and printers purchased. Students now have lap-tops. Old vehicle purchased, still moving. **Development of Team:** Group has become a cohesive team and functions as a center of excellence in garbage research and utilization. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library. **Other:** More good young scientists available in this research group than in the rest of the faculty.	2000–2008

7. Soil Fertility Management and Plant Nutrition

	Faculty of Agriculture, Key Informant: Dr JS Tenywa	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Soil fertility management and plant nutrition. – Soil/water management, socio-economic aspects, and erosion. Optimizing agro-forestry plant-biomass for P management in Rwandan soils, soil fertility improvements for ground nut in eastern Uganda; and Nutrients in and out from cattle diary farms and studies of balances in P.	1996
	Geopolitical context: Urban and peri-urban Uganda; one soil study in Rwanda.	2000–2004
	Funders and Funding Process: Sida/SAREC, Naro, Danida, Rockefeller	2005–2009
	Budget: Numbers given are for the research group	
	Sida/SAREC, 1 million SEK/year	2007–2009
	Sida/SAREC, 1.285 million SEK/year	2004–2007
	Naro (National Agricultural Research Organisation) $50 000 USD/2 years	2000–2002
	Danida, (200,000 US $?)	2002–2004
	Rockefeller, $65 000 USD/2 year	
	Rockefeller, $95 000 USD/2 years	
Research Project Evolution	**How it started:** Tenywa started as lecturer at Makerere, then PhD in 1993 (Ohio State, US); funded by USAID. In 1996, returned to Makerere as Senior Lecturer, teaching and 30% research. Small grant from USAID ($800USD), then Rockefeller in 2000. Tenywa is also Editor in Chief, African Crop Science Journal and deputy editor for Makerere University Research Journal.	
	Research methods used: on Farm studies, stakeholder participatory research is common, laboratory and greenhouse work such that researchers and farmers collaborate closely, learning from each other. Students conduct fieldwork with farmers. Surveys for base-line data, studies, ex-ante feasibility evaluation. Back-up studies carried out at MUARIK to prepare students for farm experiments, or if bad weather makes fieldwork impossible.	
	Key project events/concerns: 1. Fertilizers very expensive; 2. Lab equipment often obsolete, beyond repair. 3. Quality of the data often questionable especially for international journals.	
	Main findings/recommendations:	
	In Rwanda, agro-forestry needs supplementation with P.	
	In Uganda, farmers should intercrop groundnut with sorghum in two by two rows. Row orientation and solar interception had an effect, especially in groundnut-sorghum systems where rows were altered 1 by 1. Then east-west orientation of the intercrop rows was best. In systems with rows 2 by 2, the orientation did not effect outcomes.	
	Supplementation of 40 kg N/ha needed in Eastern Uganda.	
	Application with rhizobium to groundnut enhances BNF (biological nitrogen fixation) in some areas. Indigenous rhizobia found more effective than type introduced in some areas.	
	Found net nutrient export from field in diary farms, indicating that these farms were not sustainable systems.	
	Urban crop waste compost can effectively increase maize yields to levels that can offset the need for expensive mineral fertilizers.	
	Composting period can be reduced from 3 conventional months to approximately 4 weeks without affecting the nutritional value.	
	Farmers eager to use the compost material to boost farm production; growing commercial use especially in the horticulture industry, but supply lags behind demand.	
	Main conclusion is that there should be greater investment in research and development efforts targeting beneficial conversion of urban crop waste into useful resources.	

	Faculty of Agriculture, Key Informant: Dr JS Tenywa	
Analysis Areas	**Key Topics**	**Key Dates**
Networks Involved	**Research collaborators:** Dept of Soil Science, SLU, Molecular analytical labs at SLU, Edmonton Waste Management Centre at Edmonton, Canada, and Talen Calls, a local NGO dealing with urban waste composting for supply to small-scale farmers and to commercial farmers. Also, NARO-Uganda, ILRI-Nairobi, the Ministry of Agriculture in Tanzania, NRI (the National Resource Institute, UK), CIP, CIAT and ICRAF (the three later once all being CGIAR organizations).	
Main Research product/outputs	**Journal Articles:** 1. Tenywa, J.S. and D.J. Eckert. 2002 Wheat (Triticum aestivum L.) response to manganese in a sand culture. East African Agriculture and Forestry Journal 68 (2):51–57. 2. E.N. Sabiiti, F. Bareeba, E. Sporndly, J.S. Tenywa, S. Ledin, E. Ottabong, S. Kyamanywa, B. Ekbom, J. Mugisha and L. Drake. 2004. Urban market garbage: A hidden resource for sustainable urban/peri-urban agriculture and environment in Uganda. The Uganda Journal 50:102-109. http://hdl.handle.net/123456789/43 3. Idenfors, E. Otabbong, J.S. Tenywa and A. Amoding. 2004. A greenhouse experiment to evaluate compost derived from household and market crop wastes. Uganda Journal of Agricultural Sciences 9(1): 501–505. 4. Mubiru S L, Tenywa J S, Halberg N, Romney D, Nanyeenya W, Baltenweck I and Staal S 2007: Categorisation of dairy production systems: A strategy for targeting meaningful development of the systems in Uganda. Livestock Research for Rural Development. Volume 19, Article #100. Retrieved July 10, 2007, from http://www.cipav.org.co/lrrd/lrrd19/7/mubi19100.htm 5. Mukuralinda, A. J.S.Tenywa2, L. Verchot, J. Obua and S. Namirembe. 2008. Decomposition and P release of agroforestry shrub residues and the effect on maize yield in acidic soils of Rubona, Southern Rwanda. Nutrient Cycling and Agroecosystems. http://www.springerlink.com.ezproxy.library.wur.nl/content/u7617n51 6. Tumuhairwe, J.B., Tenywa, J.S., Otabbong, E., Ledin, S. 2009 Comparison of four low-technology composting methods for market crop wastes. Accepted by the Waste Management Journal.	
Research-related impact	Findings encourage greater investment in research and development efforts targeting beneficial conversion of urban crop waste into useful resources.	
Policy Impacts	Meetings of stake-holders in disseminations and workshops. In these workshops farmer groups, NGOs, politicians, environmental organizations and urban advisers are participating.	
Service Impacts	Training workshops for extension people. Sensitized public about great value of rhizobia. Worked with NGO, Talent Calls, to improve the composting process of urban waste.	
Societal Impacts	Extend research, policy and service impact through radio broadcasts.	
Gains in research capacity	**Teaching staff:** Grown from 4 in 2000 to 6 in 2008. **Supervisory capacity:** Changed from 3 in 2000 to 2 with PhD supervisory capacity and 1 with master supervisory capacity 2008. **Research seminars:** student seminars were given 2000 and is still given 2008. **Publication:** from 6/year 2000 to 15 per year 2008. **Promotions:** Two promotions have taken place since 2000, one from senior lecturer to associate professor, and one from associate professor to professor. Also one appointment to permanent position. **Infrastructure:** Have got some equipment, however, they normally die out quickly. This is due to technicians that do not have hands-on practices. However, smaller changes has taken place. **Development of Team:** No team-work is present, however, people at the faculty support each other. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library. **Funding:** No change has taken place between 2000 and 2008.	2000–2008

8. Housing and Community Development: Vernacular Architecture and Combating Urban Sprawl

	Department of Architecture, Faculty of Technology, Key Informant: Dr Barnabas Nawangwe	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** 1. Improve living conditions in informal settlements using vernacular architecture (modern architecture built on traditions and using resources available locally): planning, architecture, housing, infrastructure. 2. Address negative economic effects of urban sprawl on low income families.	1989–2008
	Geopolitical context: Primarily Uganda, other countries in the region.	
	Funders and Funding Process: Sida/SAREC, NUFU, NOMA, Italian cooperation for research, EU, AICAD, USAID.	2000–2008 1998–2002
	Budget: Numbers given are for this research group (Department of Architecture)	2002–2005
	Sida/SAREC, $250 000 USD/year	2008–2012
	NUFU Phase I, $500 000 USD/4 years	
	NUFU Phase II (regional collaboration), $50 000 USD/year	1992–2010
	NOMA (regional collaboration for joint masters program), $50 000 USD/year	
	Italian cooperation for research (rural infrastructure, local materials), $200 000 USD/4 years	2002–2006
	EU (Earth architecture, organized by CraTERRE in France), 500 000 Euros/4 years	
	AICAD – African Institute for Capacity Development (low cost housing), $50 000 USD/2 years	2005–2008
	USAID (conservation of Ugandan architectural heritage, $150 000 USD/2 years	2007–2009
Research Project Evolution	**How it started:** Research in new Department of Architecture created (1989) when Nawangwe returned from Kiev, former Soviet Union (now Ukraine) with PhD. Main interest: to build understanding about positive aspects of indigenous architecture to carry into modern architecture; to reverse loss of cultural, climatic, socioeconomic inputs to architecture in the region, and from architecture curricula. Started training students in sustainable and affordable architecture and began to interest international organizations such as NUFU.	
	Research methods used: Case study methodology in which the examples can be replicated. In-depth study of those cases. Qualitative and quantitative methods, including questionnaires, interviews, descriptive methods such as participant observations, archives, photos.	
	Key project events/concerns: Vernacular architecture (i.e. modern architecture built on traditions and using available resources); Informal settlements and poverty alleviation—urban sprawl: 1. How are poor people coping? 2. Lack of planning affects people, their health; lack of income creates poor housing.	
	Main findings/recommendations:	
	Urban sprawl has very serious impact on low-income people forced to move further and further out from the city centers to suburban areas. They need public transport to jobs, and have greater distances to travel, meaning larger portion of salary used for transport, increasing the costs to the local population. Solution: intensify density of settlements, building higher instead of spreading the buildings ever further away from city centers.	
	Result: Findings disseminated in policy briefs and changes of the law underway (see policy impacts).	
Networks Involved	**Research collaborators:** Most collaboration has been regional or between Eastern and Southern Africa. With Norway and Sweden collaboration features joint supervision of PhD and Master students and student exchanges. Research collaboration includes joint visits to the field, joint applications for funding, sharing questions studied in various environments, and in each environment (as in the regional pozzolana project).	

	Department of Architecture, Faculty of Technology, Key Informant: Dr Barnabas Nawangwe	
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	**Publications:** "A Philosophy and Vision of African Architectural Education", a paper presented to the Heads of African Schools of Architecture Conference, Lagos, 7th–8th March 1991. "Urban Design and Housing, a Course Manual for Master of Physical Planning", Kampala, 1993. "The Land Tenure Systems and development Controls in the East African Countries", a paper presented at, and published the proceedings of the 21st International Association of Housing Science, World Housing Congress, Cape Town, 10–14 May, 1993. "Learning From Vernacaular Architecture", a paper presented at an international conference: Housing Workshop 93, August 1993, Kampala. "Environmental Response in the Vernacular Architecture of Uganda", a paper presented at, and published in the proceedings of, the International Conference on Building Envelope Systems and Technology, Singapore, December 1994. "The Challenges of Modern Housing versus Vernacular Architecture", a paper presented at the All Africa Conference "Africa 2000 – Towards the Millenium", on architectural education, Cape Town, April, 1995. "Vernacular Architecture Series", a publication on research in the Vernacular Architecture of Uganda by the Makerere University Department of Architecture, Makerere 1994–1999: "Lessons for Environmental Design in African Vernacular Architecture", a paper presented to the Commonwealth Association of Architects Conference, Mauritius, April 1996. "Cultural Heritage in Modern Housing", a paper presented at the International Conference on Housing, Trivendrum, India, October 1996. "Boundary walls as a Reaction to Insecurity", a paper presented at the International Conference on War-torn Cities, Beirut, Lebanon, March 1997. "As Green As Vernacular", a paper presented to the International Conference on Green Architecture, Nairobi, September 1997. "Sustainability and Vernacular", a paper presented to the International Conference on Urbanisation, Environment and Sustainable Development, Goa, India, April 1997. "The Role of History of African Architecture", a paper presented at the International Conference on Architectural Education in Africa, Cape Town South Africa, September 1998. Articles on the Vernacular Architecture of the Acoli, Soga, Gisu, Luhia and Banyarwanda, and on culture published in the Encyclopedia of Vernacular Architecture of the World, edited by Paul Oliver, Cambridge University Press, 1997. "A Typology of School Buildings in Uganda and the Rationalisation of Building Materials", a research report published in Kampala, 1999. A study of the land tenure and administrative issues in Kampala District and their effect on urban development; a report of a study; Nawangwe et al, Kampala, August 2002 "Environmental Lessons in Vernacular Houses of Uganda", a paper presented to the conference of the Association of Nordic Schools of Architecture in Copenhagen, October 2001. "Housing and the Environment", a paper presented to the conference of the International Association of People-Environment Studies (IAPS) at La Coruna, Spain, July 2002 "Practice versus Theory: The Dilemma of Contemporary Housing Research Methodologies in Poor Economies – The Case of Namuwongo Slum Up-grading Project", a paper presented at the International Conference on Housing research Methodologies, Stockholm, September 2003. "Modernism as a tool for development", an article published by Nawangwe Barnabas and Vestbro Dick Urban in the journal Open House International, vol. 28.no. 3, September 2003.	

	Department of Architecture, Faculty of Technology, Key Informant: Dr Barnabas Nawangwe	
Analysis Areas	**Key Topics**	**Key Dates**
	"Expressionism Versus Environmental Sustainability in Modern African Architecture", a paper presented at the Conference on Modern Architecture, Kumasi, July 2007. Modernism in African Architeture", chapter in the book On Global grounds, edited by Julia Nevarez, New York, 2008 "Lessons From Vernacular architecture For Energy Conservation in Buildings", a paper presented to RERIC, Bangkok, August 2008. Sprawl and the City. House Types in the Informal Settlements of Kampala, by Assumpta Nnaggenda-Musana, Licentiate Thesis, Universitetsservice US AB, Stockholm 2004, ISBN 91-7323-087-1. House Types for Densification within an Upgrading Strategy. The Case for Kampala, Uganda, by Assumpta Nnaggenda-Musana, PhD Thesis Universitetsservice US AB, Stockholm 2008, ISBN 978-91-7415-088-9. Conferences/workshops: The group has participated in international conferences and conferences organized by the Faculty and by regional collaborators. Workshops have been organized for members of the Uganda Society of Architects and for local governments. 2 (1996), 4 (1997), 1 (1998), 2 (1999), 2 (2000), 2 (2001),3 (2002-4), 2 (2005), 5 (2006),5 (2007), 7 (2008),	
Research-related impact	Dr. Nwangwe became co-author of Encyclopedia of Vernacular Architecture of the World.	1992
Policy Impacts	Policy briefs and law reform: A new building control bill has been created to change the rules for building to allow vernacular architecture to a greater extent, (un-burnt bricks are allowed for building houses so long as used in a safe way). The bill also regulates ventilation etc.	2004–2008
Service Impacts	Curricula of courses have been improved creating higher quality graduates.	
Societal Impacts	Makerere University landscape has been greatly improved as a result of in-put from group.	
Gains in research capacity	**Teaching staff:** Grown from 10 (9 men and 1 woman) in 2000 to 16 (10 men and 6 women) in 2008. **Supervisory capacity:** Grown from 1 man 2000 to 5 with PhD supervisory capacity + 1 with master supervisory capacity (woman). **Research seminars:** from 0/year 2005 to 1/month 2006–2007 for the faculty and back to 0/year 2008 due to change of responsible person. (Will be taken up again.) **Publication:** from 1/year 2000 to 4–5 per year 2008. **Promotions:** 4 promotions since 2000. **Infrastructure:** Increase in plotters, computers, digital cameras, projectors, lap-tops, printers etc and also in building measurement instruments. **Development of Team:** The Team is more developed, mainly due to the thematic nature of the application to Sida. Teams have also been developed with other universities. **Funding:** Increased opportunities for more senior and recently graduated staff to apply. For an application to USAID, a new PhD person was the main applicant; team wrote application together. Consultancy enriched, often through Technology Consults. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library,	2000–2008
	Sustainability: Need enough researchers to train others and independently supervise Master students. Now there are 5 able to supervise PhDs, with gaps in competences. If all teachers get PhDs, the gaps will be covered. Continuing involvement in serious international research will require improvements in the lab equipment, and in the physical spaces for labs.	

9. Renewable Energy

	Faculty of Technology, Key Informant: Dr. Mackay Okure	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Renewable energy systems: non-woody biomass (energy sources include agricultural residues, forestry and industry bi-products for production in bio-refineries) and rural electrification (integration of multiple techniques).	2000
	Geopolitical context: Uganda and the region.	2000–2004
	Funders and Funding Process: Sida/SAREC, GTZ (German technical corporation), KTH, NOMA.	2005–2009 2007–2008
	Budget: Numbers given are for the research group	
	Sida/SAREC, 1 million SEK/year	2007–2008
	Sida/SAREC, $2 million USD/year	2008–2009
	GTZ, $20 000 USD/2 years	
	KTH (tution and weaver from KTH for Makerere master students), 50 000 SEK/ 2 years	
	NOMA (master program), $90 000 USD/year.	
Research Project Evolution	**How it started:** Mackay Okure was lecturer at Makerere, from 1986, PhD completed in 1994 on US a scholarship from the US government. Returned to Makerere staff, almost no research, no master or PhD-students. From 1997–1999 he worked on a project at Ministry of Finance, Planning and Economic Development as a national expert in long-term infrastructure and energy; and future science and technology development prospects for Uganda. He also edited and supervised the writing of the chapters on energy, science and technology, and infrastructure. In the end of 1997 Fac of Technology started master programs, then PhD program. In 2000, when Mackay was invited to write a proposal, the department of mechanical engineering had interest in bio-energy. Mackay read something that Björn Kjellström had written and wanted to develop a collaboration. Simultaneously, Björn heard about the program and made contacts from his side. The project focus was gasification of biomass.	
	The research started on a more general basis when Mackay Okure was invited to write a proposal for Sida.	
	In 2007, Prof Higenyi passed away and Mackay took over as team leader.	
	Research methods used: Field observation to establish resource availability (biomass and wind). Experimental work using equipment newly installed at Makerere: a gasifier, gas analyses equipment, solar and wind measurement equipment. Computer modeling to evaluate system performance.	
	Key project events/concerns:	
	Gasification trials when the project started, the first gasifier was developed in 2004; the ministry visited the project and the results were in the news.	
	CREEC (Center of Research on Energy and Energy Conservation) has been created, first Sida support, now easier to find other resources: funds from GTZ, The Energy Ministry, and people. CREEC handles technology, exhibitions, dissemination—activities beyond the research and seeks funding. Recent dissemination event "Go solar for wealth and health". At CREEC also people who want to work in developing countries come to work, paid by their home organizations.	
	Main findings/recommendations: Availability of non-wood biomass resources and technical viability of meeting modern energy needs. Identified small/medium enterprises and some communities. Demonstrated packages for industrial and commercial heating and energy provision.	

	Faculty of Technology, Key Informant: Dr. Mackay Okure	
Analysis Areas	**Key Topics**	**Key Dates**
Networks Involved	**Research collaborators:** Collaboration with Sweden mainly with KTH, Luleå University of Technology, and the Energy Technology Center (ETC) in Piteå. [ETC has better research environment and helps with techniques and equipment while KTH is better on defenses, publications etc. Two departments at KTH have been involved; Energy Technology Department and Electrical Power Systems Department.] Regional collaboration takes place through visits and meetings. In 2008 a joint master program in renewable energy was started. It is a NOMA program with 27 students at Makerere and Dar es Salaam. Three other countries are involved, Mozambique, Ethiopia and Malawi. For the NOMA program, there is also collaboration with Norwegian University of Science and Technology in Norway.	
Main Research product/outputs	**Journal Articles/Book chapters:** 1. Da Silva, I.P., Simonis P. "A possibility to enhance rural electrification – Small Solar Home Systems using Light Emitting Diodes" ESI Africa – The Power Journal of Africa issue 4, Volume 12, 2005, pages 43 and 45. 2. "A Novel Combined Heat and Power (CHP) Cycle Based on Gasification of Bagasse." Advances in Engineering and Technology. Jackson A. Mwakali and Gyavira Taban-Wani, Ed. Pp 465–472. Elsevier Ltd, Oxford, UK. 2006. ISBN 0-08-045312-0 3. "Field-Based Assessment of Biogas Technology: The Case of Uganda." Advances in Engineering and Technology. Jackson A. Mwakali and Gyavira Taban-Wani, Ed. Pp 481–487. Elsevier Ltd, Oxford, UK. 2006. ISBN 0-08-045312-0 4. "Suitability of Agricultural Residues as Feedstock for Fixed Bed Gasifiers" Advances in Engineering and Technology. Jackson A. Mwakali and Gyavira Taban-Wani, Ed. Pp 756–763. Elsevier Ltd, Oxford, UK. 2006. ISBN 0-08-045312-0	
Research-related impact	Energy resource assessment information. We now know how many tons we have of bio-resources, their characteristics and energy-contents. The models are useful in development of energy access systems.	
Policy Impacts	In 2007 Ugandan government established its first renewable energy policy, with contributions from some of the work of this group––making Uganda one of the countries with a policy for renewable resources of energy.	
Service Impacts	Improving access to energy by using bio-resources in new energy systems group is developing; teaching, consulting with government and other organizations, raising awareness.	
Societal Impacts	Anticipated: People are buying some of these systems. Two gasifiers are in use in industry, more to be installed. Increased electrification will lead to improved livelihoods. Non-woody biomass has started to be an economic good. Commodities will lead to income increase for people involved. Already Ugandans want to buy gasifiers but there are no suppliers, (manufacturers in India). Research group is monitoring and documenting the performance of the present systems, preparing to become the national experts.	

	Faculty of Technology, Key Informant: Dr. Mackay Okure	
Analysis Areas	**Key Topics**	**Key Dates**
Gains in research capacity	**Teaching staff:** Grown from 3 (male only) in 2000 to 11 (one female) in 2008. **Supervisory capacity:** Grown from 3 (male only 2000 to 6 with master/PhD supervisory capacity (male only) 2008. **Research seminars:** from 0/year 2000 to 3 seminars/workshops/conferences mainly for dissemination once a year. **Publication:** from 0/year 2000 to 3 per year 2008. **Promotions:** Three promotions have taken place since 2000, two from lecturer to senior lecturer, and one from senior lecturer to associate professor. **Infrastructure:** Gasifier facility has been established, used heavily in experiments and training, Gas analysis equipment is in place, CREEC has biomass and bioenergy labs being built by GTZ. Solar energy testing equipment is in place. In process of building another gasifier, bought most parts from abroad and will be put together in place. Also bought equipment to monitor the equipment in field. **Development of Team:** Now there are 6 members of staff who can supervise PhD-students and growing potential of 20 master students who can work with this group. There is also a potential to expand the group. Eight master students can work with 2 PhD-students. Two of the master students are already staff. Another one has already finished master and will join the research team and continue for PhD. In the group there is also one person that is soon to retire. Collaboration has increased tremendously among master and PhD-students. For example the gasifier is used for one purpose by one student and for another purpose by another student, and then they meet at the equipment and discuss and collaborate within groups. See similarities and differences between projects. **Heavy reliance on other elements of Infrastructure** (Sida supported): ICT, Library, **Funding:** Want to continue being able to attract funding for CREEC. Ministry of Energy is one possibility and to link up to their programs. There are also potentials to contract other funding agencies. Seems like the group almost also got a MSI grant.	2000–2008

10. Safe Rural Water: Government Policy and Policymaking

	Faculty of Social Sciences, Key Informant: Dr Narathius Asingwire	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Safe rural water provision and accessibility in a demand-driven approach". In theory, the policy reform was based on the failures of the past policy experiences in the rural water sub-sector characterized by the supply-driven approach. In practice the policy reform was largely driven by the advocates of the new public management aiming at minimizing the role of the state in social service provision. **Geopolitical context:** Uganda—Mbale and Mbarara Districts **Funders and Funding Process:** Makerere University (Staff Development Program) with partial funding from Sida/SAREC	2004–2008
Research Project Evolution	**How it started:** Intrigued by the desire to find out why governments in developing world shift policies without a critical examination of the strengths and inherent limitations of the previous policies. Quantitative and qualitative methods, specifically, gathered data by personal interviews with individual household respondents, in-depth interviews with stake-holders in the rural water sub-sector at district and national levels, and focus group discussions and document review. **Key project events/concerns:** A growing recognition at the national level of utilizing positive aspects of policies to be reformed to inform the new ones. **Main findings/recommendations:** Re-adaptation of selective public policies to a new pattern of social service provision by non-governmental agencies in particular the private sector does not necessarily achieve the intended objectives of increased sustainable service provision. **Result:** Policy reforms in the rural water sub-sector have changed role of the state to being the main driver of service provision, allowing other players to perform roles in safe water delivery, operation and maintenance. Inconsistencies in sectoral policies (e.g., requiring beneficiaries to make monetary and non-monetary contributions towards service provision and maintenance in one sector (e.g., water) while in others such requirements are not imposed (e.g., health), failure to incorporate positive attributes of the supply-driven approach, and lack of clear role definition of policy players adversely affect the implementation of policy reforms.	
Networks Involved	Research collaborators: Department of Social Work, Goteborg University, DWD & Directorate of Water Development of the Ministry of Water and Environment	
Main Research product/outputs	Journal Articles: No published article yet. Conferences/workshops:	
Research-related impact		
Policy Impacts	A Social Policy Framework for Sustainable Rural Water Supply	
Service Impacts	Increased sustainability of safe rural water supply.	
Societal Impacts	Increased awareness of community role in safe rural water provision, operation and maintenance	
Gains in research capacity	Teaching staff: Additional 1 staff with PhD to Dept. of Social Work	2008

11. Grass Roots Communication for Community Adoption of Environmental Safeguards Around Lake Victoria

	Dept.Mass Communication Faculty of Arts, Key Informant: Dr Nassanga Goretti Linda	
Analysis Areas	**Key Topics**	**Key Dates**
Research Project Focus and Funding	**Topics/Research Area:** Studying use of grass roots communication to promote local community participation in adopting good environmental practices for sustainable development Geopolitical context: Uganda, Lake Victoria Basin, Funders and Funding Process: Sida (earlier Sida was baseline); Budget: 525,200 SEK (Including final phase for evaluation due to be carried out in May 2009)	2000–2008 2006–2007 (Joined in Phase 2)
Research Project Evolution	**How it started:** Interest in grassroots communication and environmental degradation in and around Lake Victoria—how to make use of informal communication to improve health and welfare. Local people doing damage without realizing consequences of practices. What change might come if they began to appreciate dependence on environment for their livelihood? **Research methods used:** Participatory approach with adults at 10 sites bordering Lake Victoria; baseline survey 695 questionnaires, 35 Key Informant Interviews, 20 Focus Group Discussions with women and men separately and community dialogue/ Interviews. Topics: water, sanitation and garbage disposal practices, awareness of environmental laws, relationship between practices and environmental problems resulting in ill health, especially of children; what neighbors could do together to improve local environment. Former students participated on the research team for this very intensive field work; current students could not take sufficient time to do so. **Key project events/concerns:** High water table meant traditional private latrines not possible; trash always blowing into the lake, fish mongers and families dumping fish waste and household garbage into lake—without realizing the consequences in pollution, effects on health. **Main findings/recommendations:** Frameworks are in place for environmental management: the laws, the Ministry plans for protection of the environment, water, and land. But an information gap persists at the grass roots level – thus no impact from the government activities—even though local communities did understand that lake is source of livelihood serves better if not polluted. Local people did not understand specific damage caused by community sanitation and waste practices (fishing crews dumping fish intestines in lake). From group discussions they understand that no one household could solve the problems on its own; that they needed to manage garbage and sanitation together. Government had constructed toilets at landing sites, but local people are required to pay, and do not have sufficient funds. Families also complain that some sets of toilets are dangerous, some at imminent risk of collapse. Government and Districts need to fix this. Also, families did not always boil water to drink, even though they knew boiling could protect them. The barrier was the cost of charcoal—many families had to choose whether to use this fuel to cook, or to boil water, as they lack resources sufficient to do both. Thus, government was having no impact in communities from the environmental management frameworks. But, if media (radio, posters in local language) introduce and reinforce key messages, supplemented by interpersonal and group communication, people realize the problems and participate more in trying to address them. Families came to understand they would have fewer health problems and pay fewer medical bills if they put resources into prevention, rather than cure. This requires empowerment activities in local communities, promotion of their activities to improve environment. Districts are not guiding improvements for these low income communities.	2007
Networks Involved	**Research collaborators:** Environmental journalists; other units at Makerere University, e.g Institute of Environment, Adult and Continuing Education, NEMA, (No NGOs yet as project is still new).	

	Dept.Mass Communication Faculty of Arts, Key Informant: Dr Nassanga Goretti Linda	
Analysis Areas	**Key Topics**	**Key Dates**
Main Research product/outputs	Journal Articles: Publications to follow project completion. Conferences/workshops: Seminar in Orebro University in Sweden September 2007 International Association of Media and Communication Research, Paris July 2007; Stockholm July 2008.	2007–2008
Research-related impact	Redefinition of the problem based on new understanding by researchers of the causes of community practices.	
Policy Impacts	Anticipated: District and government policy on sanitation/toilets – Need to provide more and should not be more expensive than communities can afford	
Service Impacts	Community Dialogue about how communities can address problems, based on researchers presentation of preliminary findings. Anticipated: District and government action on sanitation.	
Societal Impacts	Anticipated: Contribute to poverty reduction (PEAP national development framework) as communities improve water, land, and air quality of Lake Victoria area and, as a result, environmental health Reduce family expenditures on medical care for illness caused by poor environmental conditions. Saved expenses to go to improve nutrition and welfare.	
Gains in research capacity	**Teaching staff:** University is to Advertise to fill 3 vacant positions at Ass. Prof and Prof. (Have advertised them before but no applicants) **Supervisory capacity:** This has improved with experience gained and exchanges with Swedish co-supervisor **Research seminars:** Several held at Makerere and Orebro university **Jounal co-editor among academic staff:** Journal of African Communication Research N**ew area of concentration:** Communication of science., specifically on climate change **New collaborators:** In Sweden (Orebro university) who advise on protocols and on tuning manuscripts to international audiences; also in South Africa: UNISA and Rhodes University-both potential UNESCO Centers of excellence, as is Makerere University; University of Wisconsin (USA) **Publication:** Have had 2 Department publications (one edited by Nassanga Goretti Linda) All 3 senior researchers have published in peer reviewed journals. **Promotions:** George Lugalambi to Senior Lecturer; Nassanga Goretti Linda-will be first in department to present her dossier for promotion to Associate Professor. **Infrastructure:** steady use of ICT, library, and Departmental book banks (2: undergraduate and graduate students) with up to date books. **Equipment:** In 2000 no equipment; in 2008, have 29 computers, campus radio station, still cameras and video cameras for TV production (though these are shared among less students—6 cameras rather than 3 earlier ones; equipment renewal already urgent.	

Appendix 3 Table of Summary of Financial Issues

Table 1. Summary of Disbursements from Sida for the research cooperation between Makerere University and Swedish universities. Audited figures are used form September 2000–June 2008, for 2008/2009 only preliminary figures for the period July–December 2008 has been used. For 2009 there were no actual disbursed funds or Actual expenditure available at the time of evaluation, but disbursements have been included later on.

Project activity number	75000120-05	75000112-32	75007155	75007173	75007210	75007224	75007304		
University/Organisation that received disbursements	Project activities								
	ICT Workshop	Preparat. Support	ICT Policy	Pilot Phase	ICT	Phase I	Phase II	Interest	Grand Total
Makerere University	170 500	163 571	300 000	12 477 500	8 400 000	74 492 543	104 095 766*	95 199	200 195 079
Delft University	0	0	895 000	0	0	0	0	0	895 000
Karolinska Institutet, KI	0	0	0	784 000	0	11 366 706	26 314 408	0	38 465 114
Kungl Tekn Högsk, KTH	0	52 500	0	811 500	0	12 825 879	21 255 339	0	34 945 218
Sv Lantbr Universitetet, SLU	0	59 612	0	137 000	0	1 231 600	2 924 500	0	4 352 712
Uppsala University	0	0	0	156 473	1 600 000	1 150 000	8 245 045	0	11 151 518
Gothenburg University	0	0	0	468 873	0	2 818 200	3 641 600	0	6 928 673
Linköping University	0	0	0	102 822	0	0	0	0	102 822
Örebro University	0	0	0	0	0	0	272 500	0	272 500
Smittskyddsinstitutet	0	17 879	0	0	0	0	0	0	17 879
Edita Communications AB	0	0	0	0	0	5 331	0	0	5 331
Interbus	0	0	0	0	0	4 700	0	0	4 700
ISS Facility Services AB	0	0	0	0	0	11 327	0	0	11 327
Kilroy Travel	0	0	0	0	0	8 538	0	0	8 538
Indvelop IPM AB	0	0	0	0	0	111 641	0	0	111 641
Kammarkollegiet	0	0	0	0	0	1 736	0	0	1 736
Monitoring Team, partly	0	0	0	0	0	0	1 634 598	0	1 634 598
Audit, E & Y	0	0	0	0	0	0	295 174	0	295 174
KPMG, Makerere Admin. reform Program	0	0	0	0	0	0	1 562 072	0	1 562 072

Project activity number	75000120-05	75000112-32	75007155	75007173	75007210	75007224	75007304		
University/Organisation that received disbursements	Project activities								
	ICT Workshop	Preparat. Support	ICT Policy	Pilot Phase	ICT	Phase I	Phase II	Interest	Grand Total
EDCTP/EEIG	0	0	0	0	0	0	–755 840***	0	–755 840
Swedish Institute, SI	0		0	0	0	0	9 738 504	0	9 738 504
Grand total	**170 500**	**293 562**	**1 195 000**	**14 938 168**	**10 000 000**	**104 028 201**	**179 223 666**	**95 199**	**309 944 296**
Agreements' budgets						**			
Makerere University	170 500	160 000	1 200 000	12 477 500	8 400 000	74 492 543	112 050 392	0	208 950 935
Swedish Collaborators	0	190 000	0	2 522 500	1 600 000	29 535 658	50 816 863	0	84 665 021
Swedish Institute, SI	0	0	0	0	0	0	18 132 745	0	18 132 745
Grand total	**170 500**	**350 000**	**1 200 000**	**15 000 000**	**10 000 000**	**104 028 201**	**181 000 000**	**0**	**311 748 701**

* Disbursements for Phase II to Makerere University 16/3/09 SEK 11,422,080 and 21/8/09 SEK 19,822,431 have been included after completion of the evaluation.

** Original budget for Phase I SEK 96 610 000.

*** Contribution from EDCTP to Makerere Admin. reform program

Appendix 4 Complete Appendix List, A-U (pages 1–778)

A. Terms of Reference 2009

B. Evaluation Study Inception: Participatory Process, Methods, Data, and Analysis

C. Site Visit Schedule with All Persons Met

D. Documents Reviewed

E. Financial and Research Monitors' Previous Reports

1. Financial Reports

2. Research Monitors' Reports 2004, 2006, 2007, 2008

F. Baseline data for ten-year comparison to 2007/08

G. Makerere University surveys: summary presentation of data and analysis

1. PhD students

2. Masters' students

H. Swedish Collaborators and Coordinators

1. Online survey of collaborators: results and analysis

2. Swedish coordinators interviews: summary of data and analysis

I. Narrative Financial Management Assessment (with 8 attachments)

J. Financial Management Assessment: Table of Sources of evidence for each

finding and conclusion

K. Administrative Costs: Comparison of Sida requirements: Phases I& II

L. Check list for Follow-up of Financial Matters: a Proposal

M. Summary of Administrative assistant activities

N. Financial Management: List of Assessments, Guidelines, Manuals 2000–2008

O. Perspectives at Makerere University: Group meetings with graduate students, supervisor/senior scientists, and with unit accountants

P. Research Impact Assessment Summaries: Academic Unit Contributions

Q. Genesis of a Flourishing Research Group

R. Research Infrastructure at Makerere University: Capacity Growth 2000–2008

1. ICT
2. Library
3. Laboratories
4. DSS

S. Gender equality landmarks in Makerere University

T. Cross checking topics with Final Report: Terms of Reference and 2005 objectives

U. The Evaluation Team

Recent Sida Reviews

2009:30 Programme for Democratic Policing (PDP) between the Rwanda National Police (RNP), the Swedish National Police Board (SNPB) and the South African Police Service (SAPS)
Birgit Lindsnaes, Piet van Reenen
Sida

2010:01 Review of Impact of Sida's Microfinance Support in Bosnia and Herzegovina
Monica Lindh de Montoya, Aida Selimi´c
Sida

2010:02 External Assessment of the Sida Supported Research Cooperation Project within Information Communication Technology (ICT) at Universidad Mayor de San Andres, UMSA, La Paz, Bolivia
F F Tusubira, Nora Mulira, Ali Ndwalana
Sida

2010:03 Cooperation Programme between the Ministry of Agriculture and Rural Development of Vietnam and the Swedish International Development Cooperation Agency – MSCP 2005–2009
John Markie, Nguyen Tu Sien
Sida

2010:04 Working beyond the grassroots: An Evaluation of the Chia Se Poverty Alleviation Programme 2003 to 2008
Christopher Barnett, Dang Ngoc Dung, Michael Green, Le Thi Mong Phuong, Derek Poate, Dang Van Minh, Lotta Nycander
Sida

2010:05 Cooperación financiera a la Fundación para la Promoción del Desarrollo Local (PRODEL) en Nicaragua
Mateo G. Cabello
Sida

2010:06 Cooperación Financiera al Fideicomiso para el Desarrollo Local (FDLG) en Guatemala
Mateo G. Cabello
Sida

2010:07 Strategies of Water for Food and Environmental Security in Drought-prone Tropical and Subtropical Agro-ecosystems, Tanzania and South Africa
Hilmy Sally
Sida

2010:08 The Swedish Strategy for Development Cooperation with Middle East and North Africa, 2006–2010
Lars Florin, Robert Gustafson, Viktoria Hildenwall, Lars Oscár
Sida

2010:09 Strengthening Midwifery and Emergency Obstetric Care (EmOC) Services in India
Ulrika Rehnström, Renu Khanna, Manoj Kar
Sida

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ENHANCING RESEARCH CAPACITY AT MAKERERE UNIVERSITY, UGANDA THROUGH COLLABORATION WITH SWEDISH UNIVERSITIES, 2000–2008

Past Experiences and Future Direction

Swedish research cooperation with Uganda is aimed at building up sustainable institutional research capacity in order for Uganda to have its own knowledge base to address national problems. To contribute to the establishment of a coherent agenda for research and research training, support has been focused at Makerere University (MU). The evaluation found MU has advanced in research capacity and transformed the research environment on campus using external funding to which Sida has contributed. The achievements are remarkable given major deficits in central administrative functions to support research and research education. Collaboration with Swedish universities have markedly enhanced supervision, publication in the science disciplines, and preparation of a new generation of research mentors for PhD and Master students. Despite the success of the program, a number of issues needs to be resolved for MU to achieve its great potential for further gains in building research capacity, these include; deficits in university administration, financial management, and program governance.

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