

REPORT ON UNIVERSITIES IRELAND VISIT TO UGANDA

[DRAFT]

19 -26 November 2005

INTRODUCTION

The Universities Ireland visit to Uganda emerged from a UI seminar (March 2005) organised at the suggestion of the nine Irish university presidents in order to undertake a preliminary exploration of the potential for greater Irish university co-operation with countries and higher education institutions in Eastern and Southern Africa, and of how that co-operation might be enhanced by the universities on the island working together. The seminar was preceded by an initial ‘scoping’ study of existing co-operation between Irish universities and Africa which, while not complete, indicated that all universities had some links and some universities had significant links.

Universities Ireland was set up in 2003 by the university presidents to promote collaboration between the universities in Ireland, North and South, across a range of areas. The presidents felt that the proposed visit, bringing together university leaders from both parts of the island and from both traditions in an ‘off island’ joint initiative to assist one of the world’s least developed regions, would be particularly valuable.

The visit was originally intended to be both to Ethiopia and Uganda, selected as they are two of Africa’s less developed countries which are also priority countries for the Irish Government’s Development Co-operation Ireland (DCI) programme (soon to be re-named Irish Aid). DCI felt that the visit was opportune because it is currently developing a strategy for linking with the third level sector on the island of Ireland, and wishes to give the sector an opportunity to have a greater input into its work. DCI paid for the delegation’s flights and the Irish embassies in Kampala and Addis Ababa were asked to organise programmes for the delegation.

The original delegation was made up of senior officials from four Irish universities: Professor Jane Grimson, outgoing Vice-Provost and Head of the Computer Science Department at Trinity College Dublin; Professor Áine Hyland, the Vice-President of

University College Cork; Dr Peadar Cremin, President of Mary Immaculate College, University of Limerick; and Mr Norman Bennett, Director of Finance, Queen's University Belfast. Mr Andy Pollak of Universities Ireland accompanied the delegation as its secretary. Unfortunately Professor Hyland had to pull out at the very last moment, on the morning of departure, because of a family bereavement.

Universities Ireland outlined a number of guiding principles for the visit, which were agreed with DCI:

- The visit will explore the potential for strengthening institutional co-operation between Irish universities and higher education institutions in Africa.
- The Universities Ireland delegation will use the visit to understand the context of higher education in Ethiopia and Uganda, and the role of HEIs in contributing to poverty reduction in those countries.
- Any future co-operation should be based on a commitment to enhancing sustainability, local ownership and leadership, and consistency with national policies and programmes in the countries visited.
- The focus of the delegation will be on co-operation between the Irish university sector as a whole and the university sectors in the countries visited.
- It is important that the levels of expectation in the countries visited should be managed sensitively.

It also outlined a set of terms of reference, which were agreed with DCI:

- Ascertain the level of interest among HEIs in Ethiopia and Uganda in developing an improved programme of co-operation with Irish universities.
- Understand the development goals and roles of the HE sector, and the issues and challenges affecting HEIs, in the countries visited (particularly at institutional level) with a view to identifying possible strategic areas for future co-operation.
- Examine existing levels of co-operation between Irish universities and HEIs in the countries visited with a view to exploring how Universities Ireland could add value to those links.
- Develop contacts with key individuals in the countries visited.
- Use the visit to begin drawing up a future strategy for Universities Ireland in the area of co-operation with African HEIs.

Possible thematic areas for exploration on the visit were identified as: education (including ICT in education); health (including ICT in health, and healthcare education and training); promotion of research; higher education policy and governance; and other areas which might be proposed by agencies of higher education in the countries visited.

In the event, the Irish embassy in Addis advised against visiting Ethiopia because of recent street violence, mass arrests of university students and a volatile political situation – so the visit was of one week's duration to Uganda (19-26 November 2005), rather than two weeks duration to Uganda and Ethiopia.

STRUCTURE OF REPORT

This report is in four parts:

1. Introduction and outline of report's structure
2. Executive Summary and Recommendations
3. Emerging themes in higher education and health care (including the role of ICT)
4. Appendix of meetings

The **Executive Summary** includes a number of practical issues for Ireland, North and South, that were identified as being particularly relevant following from the delegation's discussions in Uganda. The **Recommendations** are made on the basis of the **Emerging Themes** which arose from the delegation's discussions with people in ministries, universities, colleges of education, hospitals and medical, nursing and laboratory training schools – as well as with DCI staff – in Uganda.

The long **Appendix** summarises all the meetings held by the delegation in Uganda in chronological order.

EXECUTIVE SUMMARY AND RECOMMENDATIONS

The UI delegation was conscious that (according to the visit's terms of reference) any future co-operation between Irish and Ugandan HEIs should be based on “a commitment to enhancing sustainability, local ownership and leadership, and consistency with national policies and programmes” in Uganda. This principle informed all its listening and discussions while in Uganda, its post-visit deliberations, and the recommendations contained in this report.

On the Irish side, the delegation also took into account a number of practical issues: 1. The need to incorporate into any follow-up actions the resources and expertise of the Institutes of Technology in the South, the larger Further and Higher Education Colleges in the North, and the Colleges of Education throughout the island. 2. The need to explore possible roles for the Department of Foreign Affairs' Partnership Fund and its recently announced Volunteer 21 Programme and Volunteer Challenge Fund. 3. The need to involve the UK Department for International Development (DfID), given that at least two of the participating HEIs are from Northern Ireland.

With this in mind, it identified three possible approaches to follow-up actions. The first (reflected in the General Recommendations) is aimed at improving the capacity of Higher Education Institutions on the island of Ireland to build partnerships – among students, academics and other staff – with HEIs in Sub-Saharan countries like Uganda. The second (reflected in the Higher Education and ICT Recommendations) represents an incremental approach which would consist of a series of targeted initiatives aimed at having the greatest impact in the African partner country. The third (reflected in the Higher

Education and Health Recommendation) represents a radical and highly ambitious scheme which would involve a much longer-term commitment.

The strongest common theme which united both the education (higher and teacher) and health providers consulted by the delegation was the shortage of trained staff in those sectors. Out of virtually every meeting came an appeal to Irish universities to help the Ugandan institutions with **staff development**, particularly in training junior academics, researchers and medical professionals up to PhD level. The weakness of both research and research methods in Ugandan universities was very apparent, exacerbated by the 'rote learning' mentality which pervades schools and colleges of education. The use of ICT is in its infancy. The very rapid expansion of private higher education in recent years has led the phenomenon of university teachers doubling and trebling up on teaching work to supplement their meagre salaries, with research being neglected as a consequence.

Teacher education emerged as another key issue, with a low calibre of entrants (especially in primary), poor staff-student ratios, lack of finance, and low teaching standards. Here, as in other areas of higher education, there was a request for short-term placements of senior staff from Irish universities and colleges, perhaps senior academics close to retirement.

Another issue was the urgent need for assistance with the **assessment and audit of universities**, and in building up the presently low capacity of the recently-formed National Council for Higher Education in these areas.

In the health area, the team visited a number of hospitals, training schools, district clinics and universities. Common themes which emerged included:

- **Shortage of trained healthcare staff**, especially in rural areas where 80% of the population live. Outside the universities training of staff is fragmented, duplicated and thus unnecessarily costly. In universities sharing of common facilities is virtually unheard of.
- General and **severe under-resourcing**, with lack of funding for drugs and equipment. While Anti-Retroviral Therapies (ARVs) are provided free, funding for all ancillary work (laboratory testing, drugs for treating related infections, community/home visits etc) is uncertain and sporadic.
- Complete **absence of trained medical equipment technicians**

1. General Recommendations (Ireland and Africa)

- That a proportion of students in universities in Ireland, North and South (all faculties, if possible) should be exposed to the realities of Africa in the course of their university life and should be encouraged to spend some time in an African work setting relevant to their chosen careers. This might be supported through the Irish student and youth development co-operation organisation Suas (www.suas.ie) in the universities or through the Developing Links activities in the colleges of education. New funding strands might be put in place in the context of the Department of Foreign Affairs' recently-announced Volunteer 21 scheme,

- the DFA's Partnership Fund or within the Higher Education Authority's Strategic Initiatives programme.
- Funding should be identified (Higher Education Authority/DFA/DfID/Atlantic Philanthropies/European Union or other) to sustain long-term partnerships between Higher Education Institutions in Ireland and their counterparts in Uganda and other DCI priority countries in Sub-Saharan Africa. These would enable strategic placements (long and short-term) of senior staff, staff exchanges, pre- and post-retirement placements, joint research initiatives, student mobility, and the mentoring and training of trainers and researchers as a means of building capacity, solidarity and mutual understanding.
 - In the context of the above, Universities Ireland should seek a long-term partnership between the HE sector, North and South (including universities, colleges of education, institutes of technology and further and higher education colleges) and DCI through which the HE sector on the island of Ireland would build its capacity to respond to the needs identified and prioritised by partners in Sub-Saharan Africa. This may require the establishment of a separate HE Development Partnership Fund.

2. Higher Education Recommendations (Uganda)

The proposed initiatives are geared at capacity building and staff development in the HE and teacher education sectors in Uganda:

- Universities Ireland in association with the HEA and the Irish Universities Quality Board (perhaps with the support of the Northern Ireland Higher Education Council and the UK Quality Assurance Agency) should provide direct assistance and support to the recently established Ugandan National Council for Higher Education. The aim, in the first instance, would be to assist the NCHE in developing systems for self-assessment based quality assurance in the university sector. A high priority should be given to working with HEAnet on the establishment of high bandwidth inter-connectivity between educational and research establishments in Uganda (*see also ICT below*).
- Universities Ireland would develop a series of bilateral partnerships between institutions/departments/schools/faculties in Ireland and Uganda. Given the huge growth in HE in Uganda in recent years, the focus has tended to be on teaching rather than on research. However, all the universities identified the need to ensure that all staff are trained to PhD level. Co-supervision and exchanges between the HE sector here and the HE sector in Uganda could make a significant impact and could lead to longer term research collaboration to the benefit of both.
- Universities Ireland (in collaboration with the appropriate agencies) should establish a database of experienced academics who are willing to spend both shorter (2-12 months) and longer (1-3 years) periods in Uganda (and other countries in Sub-Saharan Africa), and facilitate their placement. The student and youth development co-operation organisation Suas might provide administrative support to this process.
- In light of the recurring demand throughout this report for support for the Ugandan teacher education sector, a study should be conducted to identify the

capacity of the colleges of education and of the university departments of education in Ireland to meet the needs of their counterparts in Uganda in particular and Sub-Saharan Africa in general in the primary and post-primary teacher education sectors respectively. This study should also suggest how colleges' and universities' capability to meet these needs might be enhanced in the light of the Millennium Development Goals and the difficulties which developing countries are experiencing in improving access to quality education for all.

3. ICT Recommendation (Uganda)

All sectors - public, private, NGO, health, and education - emphasised the importance of maximising the benefit to be derived from the effective use of ICT, while being conscious of the high cost of ICT in Africa compared to the developed world, and other problems such as difficulties in maintaining electricity supply. The health and education sectors in Uganda are highly decentralised with strong community-based activities. ICT can provide critical connectivity back to the centre both in terms of delivery of in-service training to professionals but also in terms of delivering healthcare and education services to communities directly.

There is a window of opportunity in Uganda to take a giant step by developing an integrated, standardised broadband infrastructure which exploits mobile/satellite technology particularly in the context of providing connectivity in rural areas. There is already strong evidence of a fragmented approach to the development of ICT with several donors providing assistance in an uncoordinated way. If this continues, then they will face the same problems that the developed world has and continues to experience – namely a plethora of heterogeneous, incompatible systems with consequent duplication and waste of resources.

A warning note: one senior university officer noted that while distance learning was rapidly becoming the most popular way of accessing higher education, recent initiatives in this area by the Open University and the African Virtual University had not proved successful. It is emphasised that most universities still rely on printed materials, and because of the lack of connectivity in many parts of the country cannot use a full online learning system. Therefore support in preparing and packaging distance learning materials using media that is accessible for students is of particular importance.

As indicated above, it is recommended that Universities Ireland together with HEAnet work together on assisting the Uganda HE sector to develop an appropriate infrastructure. However, it would be essential to maximise the overall benefit by including the government sector and the delivery of public services across the same infrastructure.

4. Higher Education and Health Recommendation (Uganda)

Over the years there has been discussion in various fora in Ireland about the possibility of establishing an Irish university abroad – various suggestions have been made in the past although most were aimed at income generation. However, the possibility of the Irish higher education institutions (North and South) collaborating to establish a third level institution in a developing country has also been suggested. Following the visit to Uganda, the delegation from Universities Ireland has identified a possible route by which this could be achieved. To summarise, the proposal is to establish the ‘Irish University of Uganda’, focussing initially on biomedical education, training and research, as a public-private joint venture partnership between the HE sector in Ireland and a relevant grouping of public and private interests in Uganda. If this specialised institution were to prove successful, it could be broadened to include other disciplines in the fullness of time. The advantages of such a proposal are outlined below:

- There is an urgent need to build capacity and enhance the health sector in Uganda, which is currently classified by the World Health Organisation as Level E, namely among the least developed in the world. The same holds true for its neighbouring countries in East and Central Africa.
- There is an acute shortage of highly trained health professionals at all levels in Uganda and in these neighbouring countries.
- Uganda already has a vibrant and rapidly developing (variable quality) private university sector which is largely self-sustaining, and attracts students from the countries of East and Central Africa.
- There is a core of individuals in Uganda – Ugandan, Irish and Northern Irish – who strongly support the proposal and have already given considerable thought to the project, providing a sound basis on which to develop the concept further. These individuals already have strong connections with Uganda’s largest university, Makerere, and a number of Irish universities, North and South.
- A number of recent developments favour the creation of a new institution: e.g. Makerere Medical School’s move to community-based practice for its students, and the foundation of International Hospital Kampala as a high quality healthcare provider.
- Starting a new health sciences institution offers the possibility of designing a curriculum to maximise synergies across the different disciplines, and which is appropriate to the needs of 21st century Uganda.
- The university should aim to develop programmes in all biomedical areas including and in particular the area of technical training – hence the requirement to involve the Irish institutes of technology.
- It is proposed that the medical degree be exclusively a graduate entry programme.
- Rather than competing with the existing medical school in Makerere University, the ‘Irish University of Uganda’ would strengthen and complement it by providing advanced training, by offering staff access to the new institution’s facilities, by facilitating joint appointments and by promoting joint research collaboration.

- The institution could be a flagship of best practice in biomedical education, maximising the use of ICT both internally within the institution and externally through outreach to rural communities in Uganda and to other countries of East and Central Africa.
- Uganda is a priority aid country both for Ireland and the United Kingdom, both of whose governments plan to increase significantly their development co-operation assistance to Africa.
- A major, not-for-profit project such as the ‘Irish University of Uganda’ could be attractive to major private sector investors and donors including the construction sector, equipment manufacturers, ICT companies etc.
- A system of bursaries could be provided for those students who cannot afford to pay. The aim would be to attract students both from Uganda and from neighbouring countries in East and Central Africa.
- This would be a phased project, starting with provision in the vital biomedical areas, but moving on, if there is a demand, to other key areas such as education and engineering.

This is an ambitious proposal with long term implications. It would be ‘branded’ in the first instance as the ‘Irish University of Uganda’ with strong Irish involvement in its foundation, governance and quality assurance, but would be an integral part of the Ugandan HE system and would ultimately be owned and run by Ugandans. One important question would be to ensure that such an ambitious project would benefit the poorer sectors of society in Uganda.

Another would be the financing of the new institution: while the existing private universities in Uganda can just about manage on the basis of fee income (and some donations), this would be impossible for the proposed ‘Irish University of Uganda’, at least in the short term. The project promoters believe the new university would attract significant private sector funding from Ireland, the USA and elsewhere. **If there is broad support for the proposal then the next step would be to develop the idea further and in particular to produce a costed business plan.**

EMERGING THEMES

HIGHER AND TEACHER EDUCATION

Introduction

Uganda has the third fastest growing population in the world: the number of children reaching school attending age will increase by 40% between 2004 and 2014. An extraordinary 2.1 million children entered primary schools in 1997 for the first time in line with the government's commitment to the Millennium Development Goal of reaching Universal Primary Education (UPE) by 2015. This will lead to a so-called 'UPE bulge' as these children – or those of them who do not drop out – move into secondary education, generating a major challenge for this sector. [There is a very high attrition rate in primary schools: of the 2.1 million children who enrolled in 1997 only 480,000 were in the system by 2003.]

Only 2.7% of Uganda's young people aged between 19 and 25 go onto higher education, and demand greatly exceeds current provision. There has been an extraordinarily rapid expansion of higher education since HE was liberalised in the early 1990s. In 1950 Makerere was the country's only university with 252 students. There are now 155 higher education institutions in Uganda: five public universities; 12 private licensed universities; 11 private unlicensed (and therefore illegal) universities; and over 120 National Teachers Colleges, Technical Institutions, Colleges of Commerce, Agricultural and Forestry Institutions, Health Training Colleges, Theological Institutions, Management Institutions, Co-operative Colleges, Hotel and Tourism Institutions and other institutions.

The 2004 National Council for Higher Education report *The State of Higher Education* reported that there were 108,925 students enrolled in 155 higher education institutions in that year (of these, 34,341 students were in Makerere University). This compares with 55,000 students in 29 institutions in 2000.

Education takes 31% of Uganda's national budget, with higher education taking 6-10%.

Emerging Themes

- A theme that emerged from all the group's discussions with senior university and college administrators and academics (at Kyambogo, Makerere, Uganda Martyrs, Canon Apolo, Mountains of the Moon, Mukono Christian, the Vice-Chancellors Forum meeting at Nkumba) was an appeal for Irish universities to help them with staff development. They complained that because of the very rapid expansion of higher education in recent years – without any accompanying increase in or training of extra lecturers and teachers – existing university staff were doubling and trebling up on teaching work to supplement their meagre salaries (the 'taxi professors' phenomenon). The quality of both teaching and research were suffering as a result.

- They particularly looked for assistance with training junior academics and students up to PhD level, both in teaching and research methods. Senior administrators at Makerere said medicine, in particular, was “lagging behind” in PhD training, and maybe Irish universities, with their strong medical schools, could help here. Makerere Medical School could be used as a testing ground for support for other medical schools, said Dr Sam Luboga, deputy dean at Makerere MS. Senior academics also pointed to a Swedish university programme of joint research with Makerere, with Swedish researchers working in Uganda for short periods (two-four weeks) and training their Ugandan colleagues in research methods. It would both be much cheaper and avoid ‘brain drain’ problems if such capacity-building could be done in Uganda rather than in Ireland.
- Senior academics at Mukono Christian and other private universities said Uganda’s universities were weak in research and research methods. The quality of research was low – theoretical rather than practical – with the private universities, in particular, having few, if any, PhD students.
- There was a big stress on the need for higher education and research to be “practical and innovative rather than purely academic” (the words of Professor Senteza Kajubi, Vice-Chancellor of Nkumba University and formerly Vice-Chancellor of Makerere). This echoed the National Council for Higher Education’s 2004 report: “The qualified personnel needed to repair and build the nation are not being produced in sufficient numbers. Those produced are not immediately needed by the national economy. This is one of the major structural problems of the higher education system.” [A small example of this is the identification by the new Mountains of the Moon University of weaknesses in maths and science among primary teachers as a market niche to exploit.]
- Another related theme was the old-fashioned ‘chalk and talk’ methods being taught to teachers in colleges of education and then by teachers to their pupils. This was perpetuating a ‘rote learning’ mentality which meant that young people were not able to solve problems in education, work or life. This was a theme echoed by people as different as Edward Ndhukire, principal of Canon Apolo Core Primary Teachers College, Fort Portal; Dr Abby Sebina-Zzinsa of the Makerere Institute of Social Research; and Dr Ian Clarke of International Hospital Kampala.
- Teacher education emerged as a key issue. The delegation met the Vice-Chancellor and senior academics at Kyambogo University, which has overall responsibility for teaching training in 47 primary teaching colleges and six lower secondary teaching colleges (responsible for setting exams, curriculum, certification and the award of diplomas in these colleges). They were told that funding sources for training staff at Kyambogo are very limited; staff/student ratios are poor; and ICT is in its infancy. The question was asked: Could a scheme be developed under which early retiring senior Irish academics could come to help Ugandan universities build capacity – in teacher education, including special needs education, and in other areas?
- Teacher education also dominated discussions at Canon Apolo College and Mountains of the Moon University (in development) in Fort Portal. Four key problems emerged from discussions at the former: 1. the poor quality of young people who come into the teaching profession, who tend to be those who go into primary teaching because haven’t got the money to do the A-level exam and primary teacher training is free. 2. shortage of staff (there is a Ministry of Education ban on staff

recruitment to primary teachers colleges); 3. the need for a new curriculum for primary teacher colleges; 4. most importantly, the poor quality of teaching in both the colleges and the classroom, which follows the traditional 'rote learning' method.

- A study by Mountains of the Moon University had shown that school exam results in the Rwenzori region were dramatically worse than those in Kampala: this, said MoM Vice Chancellor Dr Patrick Davey, showed the need for a regional university focussing on primary education.
- The need for greater capacity in distance learning was a theme which emerged from discussions with the very impressive Catholic Martyrs University at Nkosi (private). Catholic Martyrs has nearly 1900 students taking distance learning courses, which shows what can be done with ICT and outreach centres.
- Because of the explosion of private HEIs (including outside Kampala) and the government's decentralisation programme, there is a huge demand for courses in public administration and public health (from discussions with Mountains of the Moon University). Both Catholic Martyrs and Mountains of the Moon also stressed the importance of entrepreneurship
- Liz Higgins, Head of Development at the Irish Embassy, said DCI would like to link up with the new Vice-Chancellors Forum to look at "resource issues" caused by so many new universities springing up. One of these issues (identified by the National Council for Higher Education itself) was the need for assistance with the assessment and audit of universities, which is at a very preliminary stage in Uganda. Indeed the NCHE, only recently founded to bring some order to the recent explosion of new HEIs, faces multiple challenges: lack of finance, huge student needs, imbalance between science and humanities, and the effects of the UPE bulge moving up through the education system.
- Both the National Council for Higher Education (NCHE) and the Vice-Chancellors Forum are in their infancy. The delegation's meeting with the former was one of its less informative meetings, while the latter has yet to agree on a constitution. The NCHE, clearly a body which is aware of its shortcomings, is seeking support particularly in the areas of assessment and audit of universities, quality assurance, staff development and the development of models of university-business collaboration.

HEALTHCARE

Introduction

Some introductory statistics: Life expectancy is 47 for men and 50 for women. Child mortality rates are 146 (male) and 153 (female) per 1000; the maternity mortality rate is 506 per 100,000. Vaccine coverage is generally good. The prevalence of HIV/AIDS is estimated at 7% of adult population (down from estimated 18% in 1992); Anti Retroviral Therapies (ARVs) are provided free. Uganda's target of reaching 60,000 people as part of the World Health Organisation's '3 by 5' target of getting Anti-Retroviral Therapies (ARVs) to three million HIV/AIDS sufferers in low and middle-income countries by the end of 2005 was exceeded in June 2005.

Healthcare in Uganda is delivered through a number of hospitals and district health clinics (levels 1-4). The larger hospitals – e.g. Mulago in Kampala – are government funded, but equally important are the not-for-profit mission hospitals and an emerging for-profit private sector.

Infectious diseases (HIV/AIDS, malaria, TB, etc.) represent a huge burden on the healthcare sector, but there is also a rapidly increasing incidence of ‘lifestyle’ diseases such as diabetes and heart disease. Uganda has made enormous progress in HIV/AIDS and is one of the few countries to reach the ‘3 by 5’ target, although there is some dispute as to the validity of the original target. In the main government funded hospitals are better funded than the private sector, but they often lack a consistent supply of drugs, equipment and - especially outside the main urban areas - qualified staff. Health takes 15% of Uganda’s national budget.

Emerging themes

1. There is currently only one medical school in Uganda at Makerere and dozens of nursing schools; virtually every hospital has its own nurse training school. There has been increased investment in recent years in medical laboratory training, although equipment and chemicals are often in short supply. The country produces only 30 pharmacists a year. One very obvious gap in education provision is in biomedical engineering, in particular in relation to the maintenance of medical equipment. The absence of good quality technician training (apart from laboratory attendants and technicians) is a feature right across the education system in the country.
2. The team visited a number of hospitals, training schools, district clinics, and universities. A number of common themes emerged:
 - Shortage of trained healthcare staff especially in the rural areas
 - Staff are poorly paid leading to lack of commitment to the job and moonlighting (“taxi professors”).
 - Severe under-resourcing
 - Lack of funding for drugs and equipment
 - While ARVs are provided free, funding for all the ancillary work – e.g. laboratory testing, drugs for treating opportune infections, counselling, community/home visits and follow-up – are uncertain and sporadic.
 - 80% of the population live in rural areas. There is a strong emphasis by government on decentralisation leading to the establishment of a structured hierarchy of district clinics (level 1-4).
 - Outside the universities, training of healthcare professionals is fragmented leading to duplication and increased costs. Even on sites where, for example, nursing and laboratory medicine training schools are co-located, sharing of common facilities such as classrooms and accommodation is virtually unheard of, and there is no shared teaching.
 - Complete absence of trained medical equipment technicians
 - Need for research
 - Need for strong leadership

APPENDIX: OUTLINE OF MEETINGS

A chronological record of all meetings held by the Universities Ireland delegation (both as a whole, and in its education and health sub-groups) in Uganda.

Monday 21 November

WHOLE GROUP

BRIEFING MEETING WITH LIZ HIGGINS and DCI staff (Irish Embassy, Kampala)

Dr Flavia Mpanga Kagawa (health adviser), Rosemary Rwanyangwe (education adviser), Mary Oduka (HIV/AIDS adviser), Zainabu Angwech Opito (office manager), Sarah Muringi (project support officer)

Issues covered included:

- DCI support for innovative ways of integrating ICT into primary education in Uganda, and in piloting (with Canon Apolo Teacher Training College, Fort Portal) ICT in a number of education resource centres in the Rwenzori region.
- DCI support for building the primary education infrastructure in Rwenzori (and Karamoja) and supporting teacher training colleges in that region following 1997 announcement of Universal Primary Education.
- DCI support for training health workers and reproductive health.

BRIEFING MEETING WITH UGANDAN EXPERTS (Irish embassy, Kampala)

Professor Sentenza Kajubi (Vice Chancellor, Nkumba University; former VC, Makerere) and two colleagues; Elizabeth Gabona (Commissioner for Higher Education at Ministry of Education and Sports), Dr Sam Luboga (Deputy Dean, Makerere Medical School); Dr Edward Kanyesigye (African Medical and Research Foundation, AMREF Project Coordinator, PHC training) and two colleagues; Dr Ian Clarke (International Hospital Kampala and Kiwoko hospitals); Dr Harriett Nannyonjo (Senior Operations Officer, Human Development Unit – Eastern and Southern Africa, World Bank)

Issues covered included:

- The changing nature of higher education since liberalisation in the 1990s: now four public universities (Makerere, Mbarara, Gulu and Kyambogo) and 13 licensed private universities (until 1960s Makerere was the only HEI in East Africa); the establishment of the National Council for Higher Education and Vice-Chancellors Forum; stress on the need for HE to be practical and innovative rather than purely academic.
- Lots of challenges facing National Council for Higher Education: rapidly increasing student numbers; staffing of new universities; lack of finance; imbalance between science and humanities.
- Importance of Makerere medical students now doing placements in community hospitals and clinics; need for 150 doctors graduating every year to stay in clinical practice rather than go to foreign jobs or international agencies.
- Desire of DCI to link with new Vice-Chancellors forum to tackle resource issues caused by new universities springing up.

- Belief that universities, teacher training colleges and schools are promoting traditional ‘chalk and talk’ teaching methods, not creating ‘problem solving’ young people to develop Uganda’s economy and society.
- Staff development problems with numbers of university teachers very limited as number of universities increases dramatically, leading to phenomenon of ‘taxi professors’ going from university to university.
- Importance of training for professionals (particularly teachers and medical professionals) being carried out in Uganda, with funding from abroad, rather than sending them to be trained abroad, leading to retention and other problems (also stress on in-service training, particularly for teachers).
- Lots of challenges in ICT: connectivity very expensive and not enough computers in universities.
- DCI committed to spending €34 million in Uganda in 2006

NATIONAL COUNCIL FOR HIGHER EDUCATION

Ambassador Yeko Acato (Assistant Exec. Director), Birungi Phenny (Assistant Exec. Director), K.R.Ngobi,

Need for support with staff development, quality assurance, the assessment and audit of universities (in its very early stages) and models of university-business collaboration. Concern was expressed at the extent to which developed countries are attracting highly skilled Ugandans.

KYAMBOGO UNIVERSITY

Professor Albert Lutalo-Bosa, VC; Dr Impandi, Deputy VC; Dr Cula Andrew Anthony, Academic Registrar; Prof David Kiyaga-Mulindwa, Professor of History and Archaeology and research co-ordinator; Eria Guniseria, Dean of Education; George Ecoll, Chairman of ICT Committee; Godfrey Owall (PRO); and other senior staff.

Issues covered included:

- Kyambogo is a merged university of three institutions: Uganda Institute of Teacher Education, with national responsibility for teacher training in 47 primary teaching colleges and six lower secondary teaching colleges; Uganda Polytechnic, and Uganda National Institute for Special Education
- Now has six faculties: arts, social studies, engineering, vocational studies, science, special needs education; 8,000 students but only 300 staff.
- Kyambogo is responsible for setting exams, curriculum, certification and award of diploma to primary training colleges.
- Whereas the Institutes of Teacher Education were once entirely controlled by the Ministry of Education, now all 45 institutes have their own governing councils, and most professional and academic matters, as well as assessment, are now controlled by Kyambogo.
- Request for Irish university assistance in staff development training up to professor level, and PhD training. Could a scheme be developed under which early retiring senior academics could come to Ugandan universities to help build capacity? (e.g in Kyambogo’s Faculty of Special Educational Needs).
- Example of something that works: with relatively little funding Oslo and Uppsala Universities trained 20 PhD students in archaeology in Dar-es-Salaam – cost one-eighth of

what it would have cost to send them to Scandinavia. Now there is a trained core group, and they are training archaeologists from other countries in the region (thus a North-South project becomes a South-South project).

- The VC sought support from Ireland in three areas: curriculum revision and updating of programmes and methodologies; building research capacity and collaborative research (especially in poverty area); faculty and student exchanges.

Tuesday 22 November

WHOLE GROUP

MAKERERE UNIVERSITY

Professor Livingston Luboobi, VC; Dr Ssebbunga-Masembe, Dean of Education; Dr William Bazeyo, Deputy Director, Institute of Public Health; Dr Sam Luboga, Deputy Dean of Medicine; Director of Graduate Studies; Dean of Law; Euphemia Kalema-Kiwuwa (PA to VC), Nora Mulira (Deputy Director, Information Systems)

- The importance of staff development to PhD level (for example, medical academics lagging behind in PhD training) – already have some support arrangement with UCD and TCD. VC favoured ‘sandwich-type’ courses which would allow the PhD training to happen in Makerere.
- Possibility of student and staff exchanges
- Danger of ‘brain drain’ (particularly in science) if best staff and graduate students go abroad to train. A successful example of a joint PhD programme is with a Scandinavian university – a senior researcher takes on PhD students and comes to Uganda to provide research support and supervision for short periods. There has been increased use of ICT, and a number of faculties (medicine, engineering, social sciences, ICT) are involved.
- Ugandan universities are collaborating with two research organizations to build an ICT network. However there is a need for cheaper bandwidth rates for universities. In Ireland HEA supplies cheap connectivity for universities – could this be a model worth examining?

EDUCATION GROUP

[PEADAR CREMIN AND ANDY POLLAK]

MAKERERE INSTITUTE OF SOCIAL RESEARCH (MISR)

Dr Abby Sebina-Zzinsa (anthropologist)

- MISR offers short courses in research methods but lecturers are usually too busy to deliver them because of the scramble for teaching work caused by the rapid expansion of the university sector and the very poor basic salaries paid. Research suffers from this as well. The result is that MISR has a shortage of trained novice researchers
- Employers and parents now prefer Nkosi (Catholic Martyrs) graduates (private) to Makerere graduates (public) because of better staff-student ratios; parents are prepared to pay for quality.

- In Uganda people are trained to sit in offices – after 11 years of education young people don't know how to solve problems. Why? Combination of poor curriculum content, 'rote learning' techniques and poor teaching.

MASTERS PROGRAMME IN PEACE AND CONFLICT STUDIES

Stefan Friedrichsen

- 94 enrolled this year – including Ministers of Defence and Tourism, 17 MPs, people in army and security services etc.
- Building peace and conflict studies database and have put 800 documents on these subjects on a CD. Not involved to date in conflict mediation.
- Website: www.peacedataUganda.info

WHOLE GROUP

UGANDA MARTYRS UNIVERSITY (Nkosi)

Professor Michel Lejeune, Vice Chancellor; Professor Deirdre Carabine, Director, School of Postgraduate Studies (later Deputy VC) and senior staff

- Opened as a private Catholic university in 1993. Twin motivations: need for institute with values based on Christian principles, and great need for better business administration and management after the devastation of the Amin dictatorship.
- Now has Institute of Ethics and Development Studies; Faculties of Business Administration and Management, Health Sciences, Building Technology and Architecture, Agriculture and Education. 700 students reside on campus and nearly 1900 take distance learning courses (students from 15 foreign countries). Seven study centres elsewhere in Uganda to assist distance education students.
- 100 lecturers for 700 resident students and 1900 distance education students (compare Kyambogo); all students have access to computers/internet 24 hours a day
- Confident of bidding successfully for EU-funded Human Rights and Good Governance Centre for Africa
- Hugely impressive initiative, showing what can be done with a private university dedicated to excellence. Given that it is so successful, what can Irish universities offer Nkosi?

Wednesday 23 November

EDUCATION GROUP

**CANON APOLO CORE PRIMARY TEACHERS COLLEGE, FORT PORTAL
Edward Nduhukire, Principal, and senior staff**

- There are 47 colleges of primary teacher education, of which 23 are ‘core’ colleges, such as this one, which means they have responsibility for both pre-service preparation and in-service development.
- 450 pre-service primary teaching students doing two year diploma course; 450 in-service primary teachers. 50% men/50% women (although women tend to fail exams more).
- Both money for running college and teachers salaries tend to arrive late (e.g. they’re still using the June-August payment for the former).
- Medical problems: e.g. 10% of students surveyed had STDs.
- Core subjects: professional studies, languages (English and Toro); maths; science; social studies, and cultural studies (RE, art/crafts, music, PE). Optional subjects: ECE, home economics. Just started ICT (‘tacked on’).
- Most important problem: the quality of teaching in the classroom – following the traditional route, taught in Kyambogo, of learning by rote. The cycle of being taught this way in teacher training college, and then passing it on in the classroom, needs to be broken.
- The older teachers in Uganda chose to become teachers because they loved it. Now teaching tends to get the ‘left overs’ who go into teaching as a last resort, because they don’t have the money to do A-levels and because teacher training is free.
- Primary teachers are paid poorly, less than secondary teachers, and have to teach classes of up to 200 pupils.

HEALTH GROUP

[JANE GRIMSON AND NORMAN BENNETT]

MINISTRY OF HEALTH

Dr. Lawrence N. Kaggwa, Director Health Service (Planning and Development) (former Director of Mulago Hospital); Dr. Edward Mukooyo, Assistant Commissioner Health Services - Resource Centre (Health Info and ICT); Sophie Adona (?), Principal Health Training Officer (?); Tsaris Isabirye, Senior Health Training Officer; Catherine (?), chair of the eHealth Committee

- Hospital system consists of government funded hospitals, mission hospitals (Catholic, Anglican, and most recently Muslim) and emerging private sector.
- Water and sanitation are very important, and there is need for holistic support across all sectors (including between donors).
- Baseline study of ICT in health is currently being completed; reveals lots of independent activities and projects leading to fragmentation.
- Lots of opportunities for clinical research, and Ministry would particularly like to increase research at regional level.

- In-service training very important. Some success in establishing a distance education centre with donor support (AMREF and SIDA) to target lower cadres of staff, but this is not accredited by universities. A system is needed to allow students to accumulate credits towards a formal qualification
- There is a need to support advanced training of doctors in areas such as neurospecialities, heart surgery, andurology, as well as in non-communicable disease management (e.g. diabetes and heart disease, which are on the increase). Good model is 2 month professional attachments in the UK/Ireland. The benefits of Ugandans going to UK/Ireland rather than vice versa emphasised. Such training also needed for allied health workers such as nurses and laboratory technicians.
- Nurse education: government funded schools are switching to the enrolled/registered comprehensive nurse from the more specialist traditional courses (which are still in the main favoured by the mission hospitals).
- Important to plan for the future and to understand the mix of specialities required over the next 10 years; EU-funded HR project is looking at this.
- Lot of effort going into the production of accurate health statistics (health management information system) - involves training at district level and is largely paper-based. A pilot eHMIS is currently being piloted in 7 districts. Dr. Mukooyo appeared to have a good vision of how healthcare can derive benefit from ICT including linking with Geographical Information System.

SCHOOL OF LABORATORY MEDICINE, JINJA

Edward Nduhukire, Principal; Patrick ?, Deputy Principal

- 300 students on a mixture of 2 year certificate (laboratory assistants) and 3 year diploma (laboratory technicians).
- Only 4 full-time staff so School relies heavily on part-time staff from hospitals.
- Majority of students are resident and therefore have to be housed and fed. They also have to be transported to their clinical placements.
- Poor equipment: only two unconnected computers. Curriculum specifies ICT training but School has no expertise.
- Difficult to release staff for advanced in-service training; AMREF has provided some help
- School is government funded with a target of 40% public and 60% private students but Ministry of Education often sends too many public students, thus reversing this balance and leading to financial problems as government provides no additional funding for the additional students.
- No real quality assurance – internal or external
- Value of teaching expertise from abroad emphasised (“most of the volunteers end up in Kampala”).
- Accurate laboratory testing important feature of malaria and HIV/AIDS treatment.

SCHOOL OF NURSING, JINJA

Sarah Guodi, Principal

- 480 students all of whom are resident on the campus and have to be transported to local hospitals for clinical training.
- Lack of teaching materials and transport stressed

- Not much support for staff from abroad.
- No ICT.

Thursday 24 November

EDUCATION GROUP

MOUNTAINS OF THE MOON UNIVERSITY, FORT PORTAL

Dr Patrick Davey, VC; Dr A.R. Semana (Dep VC)

- Up to 2002 anybody could start a university. MoM (which took in its first students earlier this year) is the first new private university to go through the proper National Council for Higher Education licensing process before recruiting staff and students. Currently in a converted drinks distribution warehouse but with a 75 acre site eight kilometers out of town.
- Patrick Davey took early retirement from biochemistry dept in Dublin Institute of Technology and came out in 2003 for a three year placement. In May started course for Grade 3 primary teachers offering one year certificate and two year diploma intensive in-service courses concentrating on maths and science.
- NCHE asked for needs assessment in Rwenzori region. MoM study showed that school exam results in region were dramatically worse than in Kampala's schools – this, says Davey, shows the need for a regional university focusing on primary education.
- 149 students to date, including 20 in business management (certificate, diploma and degree); 18 in public administration; 16 in public health; seven in horticulture; and 15 BEd.
- Trying to build a practical approach (with entrepreneurship) into all courses. Business management and public health are evening courses; public administration a weekend course; horticulture and BA/BSc with Education are daytime courses.
- Have a problem getting senior staff. Voluntary Missionary Movement (which sent Davey out) said they would finance three senior professors for six years each in education, business and agriculture but couldn't persuade any to come out.
- Davey says there is a huge demand for courses in public administration and public health because of government's decentralisation programme.
- He says the demand for student places is there: out of 500 who qualified for university from Rwenzori region, only 180 actually got university places.
- Problem 1: organising scholarships for prospective MoM students – fees and living expenses would cost €1,400 euros per student per annum. Problem 2: Scarcity of holders of Masters to teach ICT.

BUHINGA CO-ORDINATING CENTRE, Fort Portal Johnson?

Co-ordinating Centre oversees 22 schools and 107 teachers (schools have up to 1879 pupils). Currently bringing small number of unqualified teachers up to Grade Three – teaching them administration, classroom interaction and practice etc. Teachers come in every Saturday for courses; programme takes three years. Centre brings in other teachers for occasional maths, music, life skills courses. The least qualified teachers are in rural areas.

HEALTH GROUP

MENGO HOSPITAL

Dr. G. W. Bukenya, Deputy Director; Dr. Michael Kawooya, School of Sonography; Director of Laboratory School; Deputy Laboratory Manager; Principal Tutor, Nursing School; Senior Midwifery Tutor; Principal Nursing Manager; HR Manager

- 300 bed private not-for-profit Catholic mission hospital; users charged a fee based on cost recovery. Established in 1897 by Sir Albert Cooke; son (doctor) brought first X-ray in Africa to Mengo. CMS Ireland still active in support.
- Regularly get students and medical staff from abroad for short periods.
- Strong emphasis on community outreach programmes (immunisation, ante/post-natal care, family planning, health education, safe water, waste disposal, sanitation).
- Community workers (selected by the community itself) trained by hospital staff to be HIV/AIDS counsellors: they know the community and can keep track of patients.
- Although most women will go to the clinic for ante-natal care, 60% go to traditional “doctors” for delivery.
- Malaria is main problem for the hospital accounting for about 25% of patients, followed by acute respiratory infections in children, pneumonia and HIV/AIDS.
- Ultrasound and Radiology started recently, jointly with Thomas Jefferson University, US.

KIWOKO HOSPITAL

Jim McAnlis, Programme Manager; Moses S Sekidde, Planning Officer; Carsten Meixner, Biomedical Engineer

- Church of Uganda Hospital; established in 1988 by Dr. Ian Clarke and opened in 1991; 222 beds; strong community element
- Huge increase in HIV/AIDS patients: in November 2004 150 patients were diagnosed HIV+; one year later there are 1000. Although ARVs are provided free, there are insufficient resources to provide comprehensive care – counsellors, drugs to treat other infections, transport for home-based follow-up, testing kits etc.
- Excellent programme for HIV+ orphans which currently caters for around 70 children. Based on increasing numbers of HIV+ adults this is predicted to rise to 2000!
- Community care provides immunisation, ante-natal care, health education, ARV follow-up etc. Members of the local community are identified and trained by Kiwoko staff.
- Drama group provides AIDS education in community through music and dance and individual witness.
- Impressive neonatal unit with incubators
- Nursing school due to receive significant funding from EU to allow it to expand
- CMS provided funding for new community health training building which will run courses in co-operation with Makerere University as part of the community strand of Makerere’s medical curriculum.
- Kiwoko has identified significant potential and has ambitious plans for ICT both within the hospital and to link with community.

- Overall impression: hospital treats a huge number of patients and provides a comprehensive service to a wide community of up to 0.5 million patients. Works on a shoe-string, having to deal with unreliable supply of drugs and finance (no money from government since July); in the past has managed to balance books but this is becoming increasingly difficult.

Friday 25 November

EDUCATION GROUP

MUKONO CHRISTIAN UNIVERSITY

Rev Dr John Senyonyi (Dep VC, Finance and Administration), Rev Dr Alex Kagume Mugisha (Dep VC, Academic Affairs), Catherine Morris (PRO)

- Founded in 1998. First private university to be chartered (meaning it has been tested by NCHE and found to be on a par with public universities). 3,000 students in education, law, business, communications, theology, social work, development studies. Former Anglican theological college.
- Weak in research and research methods (no PhD students). Quality of research in Ugandan universities very low; usually theoretical, with very little practical research.
- 54% women students; safe environment; concerned about students' character formation and discipline; explicitly Christian.

HEALTH GROUP (later joined by EDUCATION GROUP)

WORKSHOP HELD AT INTERNATIONAL HOSPITAL, KAMPALA (IHK)

The workshop was attended by staff from the International Hospital, Mr Jim McAnlis, Kiwoko Hospital, together with the Universities Ireland delegation.

The following presentations were made:

- | | | |
|----|---|----------------------------------|
| 1. | Background of NGO hospitals, private healthcare, teaching in the health sector | Dr Ian Clarke |
| 2. | 'Bridging the gap' | Dr Clarke/
Dr Moses Galukonde |
| 3. | Presentation of need for Human Resources for Health and proposal for biomedical university. | Dr Galukonde |
| 4. | Background and proposal for collaborations with Irish universities on nursing. | Rose Nanyonga |
| 5. | Proposal for Masters level programmes in collaboration with Irish universities. | Dr Clarke/
Dr Galukonde |

A brief note on each presentation is indicated below:

Background

- Problem of understaffing, untrained or inadequate staff, and inconsistent supply of drugs highlighted in government sector. 50% of healthcare in Uganda is provided by the non-government sector.
- NGO and mission hospitals carry the burden of basic curative care because they are seen to be more reliable.
- International Hospital Kampala is the first high level private hospital in Uganda, setting out to be a tertiary level referral facility. The ultimate aim is to reach the broadest sector of the population, while seeking to promote and demonstrate good practice.

Nursing

- IHK School of Nursing aims to enhance the profession, increase expertise, clinical skills and standards of care.
- IHK School of Nursing aims to provide a foundation for future training including Masters programmes.
- Aims to partner with other institutions (e.g. Irish universities). Best to train in the country rather than students going abroad.
- Need to develop the learning process and enhance the curriculum; increase sense of vocation.
- Expose to international standards from Ireland/UK.

Medicine

- Only 150 doctors graduate from existing Uganda medical schools.
- Most are lost to government and non-government hospitals. Only a few go to mission hospitals up-country.
Therefore there are problems of
 - Insufficient manpower
 - Brain drain
 - Lack of opportunity for professional development.
- Need to grow capacity in Uganda and make it attractive for medical professionals to stay working in the institutions.

IHK aim to establish a medical school and develop postgraduate courses

- Need help in curriculum design, resources, books and journals, plus input from visiting lecturers to enhance teaching and maintain standards.
- IHK want to build links with Irish/UK universities to build capacity and share capacity with rural hospitals e.g. through the new Community Health Training Centre at Kiwoko.
- Masters level courses in health-related subjects could be offered within Uganda and in partnership with Irish universities e.g. TCD and Queen's Belfast.
- Courses need to be based in Uganda, modelled on distance learning principles - perhaps run on a modular basis.
- Affiliated Irish universities could provide course content in collaboration with Ugandan institutions plus some visiting lecturer input and external examiners. Degrees to be awarded by affiliated university provided quality standards are met.
- In return, students from Irish universities could undertake modules in Uganda on tropical diseases etc and also carry out related research e.g. HIV/AIDS, tropical diseases etc.

Main Proposals

1. Continual and extended partnerships in nurse training including the development of Masters courses.
2. Establishment of Biomedical University developing Masters programmes, CPD, ICT in health etc.

IHK can act as a centre for such programmes and be used to build capacity within Uganda which can be shared and extended to other rural hospitals e.g. through the Community Health Training Centre at Kiwoko.

VICE CHANCELLORS FORUM

Nkumba University

Vice-Chancellors and Deputy Vice Chancellors representing Universities of Mukono, Bugema, Busoga, Ndejje, Gulu, Nkumba, Uganda Martyrs, Mountains of the Moon, Kampala, Kampala International, Islamic University (not a comprehensive list – no public universities represented except Gulu?)

- Discussion about the problems of getting students to do science (in 1964 the government was aiming for 60% science/40% arts students, a target that has never been reached)
- Request for Irish university assistance in drawing up a constitution for the Vice-Chancellors Forum (which is still an embryonic body)
- Request that in any future Irish-Ugandan university co-operation, the country's new private sector universities should not be forgotten.

Saturday 26 November

INFORMAL LUNCHTIME CONVERSATION WITH DR CEPPIE MERRY

Consultant in Infectious Diseases, St James Hospital and Lecturer in Pharmacology at TCD – in Uganda on three years leave of absence (rough notes – to be checked with Dr Merry)

- Her organization in Uganda is the Aids Treatment Information Centre (ATIC). Her team includes Peter Coakley (doing PhD); a Ugandan and Nigerian doctor (both doing PhDs), and Mairead Ryan, pharmacist (Dr Merry says clinical pharmacy not developed at all in Africa).
- She also has an Irish fund-raising foundation – Réalta – chaired by Dick Spring, with Jerry O'Dwyer and Dr Bulbulia on the board along with pharmacology academics from the UK and US
- There is no data on people in Uganda who have HIV *and* tuberculosis or malaria
- Funding: ATIC has received funding from Holland to develop capacity in both Uganda and Rwanda. Also received €1.4 million from EU to do work with Univ. of Cape Town, investigating whether people in Uganda, Rwanda, Nigeria etc handle drugs differently.
- Many Irish doctors and nurses want to come to Uganda. However when they go to poor rural areas they get depressed at the hugeness of the task.
- Dr Merry would like to help Makerere Medical School (first on continent to train African doctors; first to train African women doctors) rather than set up a totally separate new medical university, along the lines envisaged by Ian Clarke. She says there is 'huge scope' for Irish universities to become involved in medical work in Uganda, but stresses that such involvement should be coordinated and systematic, requiring administrative support both at home and in Uganda. It would be important to bring senior Irish

- consultants and GPs (who don't need too much supervision) to work for short periods in Uganda.
- Réalta is raising funds for a clinic and a school/orphanage for children with special needs in Mpigi with which ATIC is involved (fund raising to build a clinic and doctors accommodation) Also has developed a primary health care model which could be replicated in other places. Volunteer doctors and pharmacologists could work for nine months with ATIC in Kampala and three months in Mpigi.. Would like to bring out psychologists and special needs people to work in the orphanage.
 - There are no biomedical engineers in Africa

This draft report was revised by Andy Pollak, 10 January 2006.