

**Sierra Leone:
At the Crossroads**



**The Way Forward:
United Nations MDG for 2015
A Focus on Family Health, Human Rights,
and Gender-Sensitive Development**

**Establishment of
International Centres of Excellence for e-Health (ICEEH)
in Sierra Leone and Mano River Union countries**

Secretariat: University of Sierra Leone
College of Medicine and Allied Health Sciences
&
Global University System (GUS)
&
Mobile Assessment and Media Systems (MAMAS)

Proposal for Planning Grant Funding
Linda Hawkin Israel, MAMAS

June, 2006

Leadership and Partnerships

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Government of Sierra Leone
Ministry of Health and Sanitation
Ministry of Education (proposed)

NGOs/Citizens' Organizations
SLANGO
(NGOs/CBOs to be established)

Lead INGOs
International Medical Corp

United Nations (Proposed)
UNFPA and UNAIDS, Sierra Leone
UNDP—Fast Track Poverty Reduction, Sierra Leone
World Health Organization
Mano River Union Secretariat

Educational Institutions

In Sierra Leone

Co-Secretariats:
University of Sierra Leone
(College of Medicine and Allied Sciences)
Njala University
(Community Health Program)

Milton Margai College of Education & Technology

In Guinea

University of Conakry (to be confirmed)

In Liberia

University of Liberia (to be confirmed)

In Ghana

Noguchi Institute (to be invited later)
College of Physicians and Surgeons (to be invited later)

In Nigeria

Abia State University Teaching Hospital (ABSUTH) (to be invited later)
Obafemi Awolowo University, Ile-Ife, Nigeria (to be invited later)

In Egypt

Cairo University (to be invited later)

In Europe

University of Tampere, Finland

In South Africa

Nelson Mandela Metropolitan University

In the USA

Columbia University
Harvard University Medical School
University of Michigan
University of Washington
New York University
University of Pittsburgh (GINIE Project)

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I. Challenges.

- After a decade of rebel wars, the Mano River Union now faces the threat of HIV/AIDS, looming on the horizon. The stage is well set for this eventuality unless contributing factors such as poverty, mobility and still weak health infrastructure are rapidly addressed.
- Nelson Mandela suggested that “giving life is NOT to die,” in referring to the fact that almost 300,000 women die during childbirth annually in Africa. Maternal mortality rates are among the highest in the world. Causal relationships include lack of access to adequate health services and include need for strengthened maternal health systems, public education, maternal nutrition and logistical support for transport.
- Maternal fistulae represent a silent and cruel issue for women which reduces the life quality and relationships of each affected woman, altering family and community life.
- Communication technologies are fraught with challenges in low resource communities, including stable energy sources, human capacity for use and maintenance, geographic and cultural challenges and, of course, access to reliable infrastructure and integrated data systems.

II. Window of opportunity.

With assistance by Dr. Takeshi Utsumi, founder of Global University System (GUS), the initiative includes a template for preparatory activities and proposal writing for access to Japan Official Development Assistance (ODA) Fund for e-health/telemedicine and distance learning infrastructure. GUS/Sierra Leone is designed to provide tools to enable the people of the region to participate fully in their own development and to bring their culture forward, thriving with the influx of opportunities, and contributing to new prosperities.

GUS/Sierra Leone and Mobile Assessment & Media Systems (MAMAS), in collaboration with University of Sierra Leone, Njala University, Milton Margai College of Education and Technology proposes cooperation with UNFPA and local stakeholders to demonstrate the “regional model for UNESCO and World Summit on Information Society (WSIS)” as telehealth systems advance the MDG 2015, with opportunities for applied community research on impact and potential of Information Communication Technologies (ICT) for development in West Africa.

http://portal.unesco.org/ci/en/ev.php-URL_ID=1543&URL_DO=DO_TOPIC&URL_SECTION=201.html

III. Project concept.

- Proposed GUS/Sierra Leone linked by MAMAS to rural and refugee communities, supports distance learning and e-health/telemedicine for: 1) regional technological infrastructure and 2) programs and academic content to increase stakeholder capacity.
- Both infrastructure and programs are supported by 1) exchanges of educational courses and their credits through broadband Internet, 2) promotion of community development, and 3) collaborative research.
- Immediate focus is on community e-health/telemedicine and participatory governance because those programs are foundational and best developed for rapid start-up.
- The e-university brings together resources of an extensive network of universities in Sierra Leone, as well as specialized programs from many international universities.
- GUS/Sierra Leone and MAMAS provide tools, systems, partnerships and funding opportunities to strengthen local efforts for remote learning and health system.

IV. Objectives.

- Practical tool sets (inclusive of gender and indigenous culture) in several key sectors support sustainable and peace-enhancing development in Sierra Leone as a model for Mano River Union member states.

- Educational institutions, government, business and NGOs partner to solve regional challenges in inclusive, capacity-enhancing ways.
- Immediate health sector needs are addressed through multi-stakeholder planning, and implementation of e-health/telemedicine programs.
- The valuable culture and ecology of Sierra Leone is nurtured to continue post conflict recovery at each level of need and future opportunity.
- Sector-based research and cooperation accelerate development innovations.

V. Descriptions of Principal Institutions:

- **The University of Sierra Leone** was the first university in Sub-Saharan Africa and has historical distinction of having been center of learning for students from across the entire continent and beyond, until this past decade of rebel conflict. Beginning as Fourah Bay College, the university was established to provide its pupils, the children of the freed slaves and liberated Africans, with opportunities to obtain training in basic skills, needed to survive in their new environment. The university served as umbrella for sector-based colleges until the University Act of 2004, enacted by Parliament, which established the reconstituted University of Sierra Leone, and Njala University autonomous entities, with possibility for the establishment of additional private universities of higher learning.

Now, in 2006 and following a decade of rebel war with rampant destruction of educational infrastructure, the government has, as top priority, the rehabilitation of University of Sierra Leone, its sister universities, Njala and Milton Margai College of Education and Technology, and rural schools, colleges, and polytechs across the country which would increase citizen access to secondary and higher education as central to national recovery. This means that under the new system thousands of young people who are eligible would gain access to higher education within Sierra Leone on an equal basis. The envisaged expenditure will be immense. Government will therefore require the services of graduates in our rural communities to address the current inequalities in the distribution of these services, as a pathway to equitable development and national cohesion.

- **Global University System (GUS)** under leadership of Dr. Takeshi Utsumi, and in affiliation with UNESCO/UNITWIN, is based at University of Tampere, Finland. GUS is a technology readiness program with broadband and satellite-based infrastructure which includes a template for collaborative planning and coordination between universities, regional governments and community-based organizations. GUS is a worldwide initiative to create satellite/wireless telecommunications infrastructure and educational programs for access to educational resources across national and cultural boundaries for global peace. Education and job skills-trainings are prioritized as the keys in determining a nation's wealth and influence.
- **Mobile Assessment and Media Systems (MAMAS)** under leadership of Linda Hawkin Israel, is anchored at University of Washington, Seattle, and will cooperate with Nelson Mandela Metropolitan University, South Africa, for technology and program tracks which support University of Sierra Leone, Njala University, Milton Margai College of Education and Technology, and community-based organizations affiliated with SLANGO, Sierra Leone. With focus on women's empowerment, MAMAS is designed in context of GUS programs, providing the Local Community Development Network (LCDN), linking universities to/from community-based clinics, schools, governmental and lifelong learning centers. MAMAS is a model for hybrid communications and international supportive partnerships, adapted to rural and refugee needs. MAMAS incorporates best practices and most advanced technology research for added value and reach to existing national and community-based programs.

VI. Description of INGO Lead Partner:

- **International Medical Corp:** Field Coordination and Health Systems Partner

International Medical Corps is a global humanitarian nonprofit organization dedicated to saving lives and relieving suffering through health care training and relief and development programs. Established in 1984 by volunteer doctors and nurses, IMC is a private, voluntary, nonpolitical, nonsectarian organization. Its mission is to improve the quality of life through health interventions and related activities that build local capacity in areas worldwide where few organizations dare to serve. In the aftermath of violent conflicts and natural disasters, IMC provides emergency interventions for vulnerable populations and makes lasting improvements to devastated health care systems.

By offering training and health care to local populations and medical assistance to people at highest risk, and with the flexibility to respond rapidly to emergency situations, IMC rehabilitates devastated health care systems and helps bring them back to self-reliance.

Training is the Foundation: IMC not only cares for people in need, it also empowers them to serve their communities on a sustainable basis. IMC recruits local doctors, nurses and other health care workers, then trains them through a combination of classes, seminars, individual mentoring and hands-on training. Even in the emergency phase, local populations are active in identifying those in need of treatment, referring them to clinics and hospitals, and administering care alongside IMC staff and volunteers.

VII. Benefits

Based in University of Sierra Leone and Njala University, GUS/Sierra Leone and MAMAS will increase access to customized communications and related resources which mobilize and encourage hospitals and e-healthcare centres to use the Internet and hybrid technologies to provide patients online second opinion for various infectious and chronic diseases, including malaria, sickle cell anaemia, river blindness, HIV/AIDS, polio, cancer, heart disease and other conditions. Existing university and community programs will help define communications and data management systems which reduce obstacles to good health management.

Doctors will also be taught (through a train-the-trainers program) how to use computers effectively to order tests and drugs, which has been shown in studies to reduce medical errors and flag patient drug allergies. Nurses will also be taught to use computers to track patients as they go through the primary healthcare centres and hospitals.

Medical records will be computerized, including lab results, drug data and records of office visits in text files – which would be standardized in a format that can be shared. Cross-cutting priority will be to encourage government and donors to develop incentives to encourage health administrators, doctors, health workers to use the internet.

It has been estimated that medical errors account for about 2 million deaths in Africa. A great majority of these deaths occur in rural areas, mostly among children and women.

GUS and MAMAS communication technologies, strategic alliance and Japan ODA donor programs are university-based and designed to link communities, adding capacity for:

- **Primary health care (PHC)** – basic preventative and curative services, with a focus on the most vulnerable victims of suffering: children, women, and the elderly
- **Construction of national policy on e-health/telemedicine** – in cooperation with World Health Organization (WHO)

- **HIV/AIDS** – diagnosis, treatment and prevention of sexually transmitted infections (STI) and opportunistic infections, as well as training for HIV/AIDS caretakers, distribution of appropriate drug therapies, and public education
- **Maternal and child health care (MCH)** – mass immunizations, well-child clinics, and training for midwives and traditional birth attendants to reduce maternal and child mortality
- **Multimedia HIV/AIDS Education Program** – in the “Prevention of Mother-to-Child HIV/AIDS Transmission” program
- **Health education and training** – in the medical and managerial skills needed to serve local communities suffering from a breakdown in health services
- **Emergency relief and disaster response** – vital emergency medical care, war and trauma surgery, nutrition, and water/sanitation assistance provided at the very onset of a humanitarian crisis
- **Reproductive Health Care** – a full range of services for women to promote better health, particularly during the child-bearing years, including centers for fistula repair
- **Water and sanitation** – to control the spread of waterborne diseases amongst vulnerable communities
- **Reconstructive and rehabilitative surgery** – (focus on fistulae repair with MAMAS) to improve the physical and psychological health of victims of warfare, including women and children
- **Nutrition services** – supplemental and therapeutic feeding programs for populations affected by famine and food shortages, particularly small children
- **Establishment of nutrition course** – especially for childbearing mother with HIV/AIDS
- **Gender and sexual based violence** – training for local health care workers to increase awareness of gender-based violence and establish treatment protocols
- **Continuing Medical Education (CME)** – to be provided with video tape, DVD disk, and broadband wireless Internet when deployed, from prominent institutions in North America and Europe, e.g., University of Ottawa, etc.

VIII. Leadership.

Drawing from international, national, regional, and local leadership, GUS/Sierra Leone and MAMAS are linked broad-based initiatives, with four overlapping categories of participation;

1. University-linking regional hubs to international networks
2. United Nations: UNFPA-UNDP-UNESCO
3. Community-based organizations
4. International non-governmental organizations
5. Corporate partnerships: WorldSpace Satellite Radio, Greenstar (rural multimedia)

IX. Action Plan.

1. Fact Finding and Assessment Trip

Immediately after fund availability, an initial stakeholder meeting will be held for formal confirmation of project partners in Freetown, Sierra Leone. Co-principal organizers will travel to Sierra Leone for a fact-finding mission, to establish taskforces to develop a comprehensive proposal to Japan Official Development Assistance Fund (ODA). Dr. Utsumi offers leadership and advocacy to obtain bilateral government funding (Japan and Sierra Leone governments at different levels), directed through the administrative structures of the GUS/Sierra Leone Secretariat, to support participating institutions and communities as they train and utilize distance learning, and information centers. Dr. Utsumi and Linda H. Israel's planning mission must include following:

- Visits to participating colleges, universities, hospitals, local governments and community-based programs in Sierra Leone: University of Sierra Leone, Njala University,

- UNFPA/UNDP and INGO-CBO stakeholder groups.
 - Establishment of taskforces for each aspect of collaborative proposal writing, with representation from the communities, institutions, and governmental agencies that will benefit from the initiative.
 - Inclusion of MAMAS core technology team and outreach for technology counterparts who desire to work on the design of advanced training and professional development programs that would enhance economic development in Sierra Leone and other Mano River Union countries as counterpart programs.
 - Planning for joint research and development on programs for cost effective applications of wireless technologies in meeting the development needs
 - Planning for joint research on the role of Information Communication Technology (ICT) economic development of Sierra Leone, and in particular, the facilitation of entrepreneurial initiatives.
- 2. Planning Workshop for Convening of Task Forces** (about 4 months after the above action)
- To develop collaborative structure for proposal-writing across distances
 - To define infrastructure, program tracks, and timelines for GUS/Sierra Leone and MAMAS Projects, to include input from local and international stakeholders for
 - Participatory governance
 - Community health/telemedicine

Each task force will produce proposal with necessary steps to be taken during the following half year with their budgets, which will be summarized into a proposal. This proposal with precise budget for the next design phase will be used for the fund raising. The emphasis will be placed on the design of tech/facilitator support and marketing survey for sustainability of GUS/Sierra Leone and MAMAS (as LCDN) with their applications and others at anchoring institutions, mentioned above.

This proposal will be submitted with endorsements from various UN, governmental, university, NGO agencies to the Japan Embassy in Freetown for the Japanese ODA fund. Dr. Utsumi will serve as liaison to Japan ODA and Global University System will advise Japan ODA for UNDP/UNESCO to co-administer funding for GUS/Sierra Leone with University of Sierra Leone, Njala University, Ministry of Education and UNFPA.

3. Design Phase Workshop

This phase will conduct market survey, feasibility study, system design of infrastructure, design of support system and administration structure, as well as to construct a business model for maximum effectiveness and sustainability and replication in other locations with the use of wireless broadband Internet. This phase would produce a project proposal for deployment, for which Japanese Government's Official Development Assistance (ODA) fund will cooperate with federal and regional government for funding as GUS/Sierra Leone program.

X. Financing.

GUS projects will combine (1) the Japanese government's ODA funds and (2) Japanese electronic equipment with (a) the Internet technology and (b) content development of North America and Europe. Funding can be leveraged with Japan ODA funding to establish sector-based programs and to further Local Community Development Network (LCDN) (i.e., MAMAS) community-based infrastructure, adapted to meet project needs.

XI. Timeline/Budget.

A Phase: Jun 06–June 07 ~\$137,150. Initial funding covers:

- 1) establishment of local secretariats to move project forward,
- 2) confirmation of official participation,
- 3) convening of initial stakeholders meetings in Freetown, Sierra Leone.

B Phase: Additional amount to be determined following planning mission. Next-phase planning grant funds:

- 1) collaborative development of infrastructure, program tracks, and timelines by stakeholders,
- 2) development of relationship with grantors,
- 3) written proposal, with budgets, for GUS/Japan ODA support and matching grants,
- 4) grants agreed upon and mechanism for administration put in place.

C Phase: Jun07–GUS/Sierra Leone and MAMAS implemented per agreements.

Appendix A: Biographies

1. **Prof. Aiah A. Gbakima** is a scientist and Head of University of Sierra Leone with specialties which include detection of *Escherichia coli* and *E. coli* 0157:H7 in environmental water systems and in sludge waters. Note to this project is that he is also interested in using molecular techniques to detect low level parasitic and tropical disease conditions in the field. Furthermore, his focus is of central importance: the development of sensitive and simple immunological assays to be adapted for field based conditions in developing nations and the training of young African scientists, physicians, and social and behavioral scientists in medical and social science research to strengthen our human capacity to solve the health and disease related socioeconomic problems of African nations.

This university leader focused on guiding the University of Sierra Leone through the 21st century as a merit-based research intensive, quality teaching and service sensitive institution of higher education in Africa with internal, regional, and international collaborative efforts to maximize efforts of all stakeholders.

2. **Prof Sahr Moses Gevao** is a visionary for public health and medicine in Sierra Leone and across West Africa. As Deputy Vice Chancellor and Associate Professor and Head of University of Sierra Leone College of Medicine and Allied Sciences (COMAHS), Dr. Gevao also serves as Senior Specialist in Haematology and Transfusion Medicine, Ministry of Health and Sanitation, Government of Sierra Leone and as Head of Department of Haematology and Chemical Pathology of COMAHS from 1995 to current time. Graduating in 1982 from University of Lagos, College of Medicine, Nigeria, and post graduate at University College Hospital, Ibadan, Nigeria and West African Postgraduate Medical College, Dr. Gevao continued his sub-specialization in Haematology and Transfusion Medicine, to publish critically important research and serve as lecturer and advisor on public health with focus on hematological diseases as they reflect population demographics, in preparation for his current leadership in the development of standardized and reliable laboratory practices in Africa.
2. **Prof. Mohamed Alghali** has maintained the international reputation of Njala as a leader for rural development, even during a decade of rebel wars. US Colleges of Agriculture continued to review Njala's historical role and research on crops and animal husbandry even when few papers were published, as the campus and many of its faculty were destroyed or displaced. Prof. Alghali was born February 29, 1948 in Freetown, Sierra Leone. He entered Fourah Bay College, University of Sierra Leone, in 1970 and graduated with a B.Sc. Degree in Zoology and Chemistry. Professor A. M. Alghali enrolled at the University of Ibadan, Nigeria in 1977 and graduated with an M. Sc. in 1978 and a Ph. D. in 1981 in Agricultural Biology (Entomology option). He is a Sierra Leonean, married with three children and speaks English fluently in addition to several local languages.
3. **Dr. Takeshi Utsumi** is founder of Global University System (GUS) and the Chairman of the GLObal Systems Analysis and Simulation Association in the U.S.A. (GLOSAS/USA). He is the 1994 Laureate of the Lord Perry Award for Excellence in Distance Education. His public services have included political work for deregulation of global telecommunications and the use of e-mail and voice over Internet Protocol (VoIP) through ARPANET, Telenet and Internet; helping extend American university courses to developing countries; the conduct of innovative distance teaching trials with "Global Lecture Hall (GLH)TM" multipoint-to-multipoint multimedia interactive videoconferences using hybrid technologies; as well as lectures, consultation, and research in process control, management science, systems science and engineering at the University of Michigan, the University of Pennsylvania, M.I.T. and many other universities,

governmental agencies, and large firms in Japan and other countries.

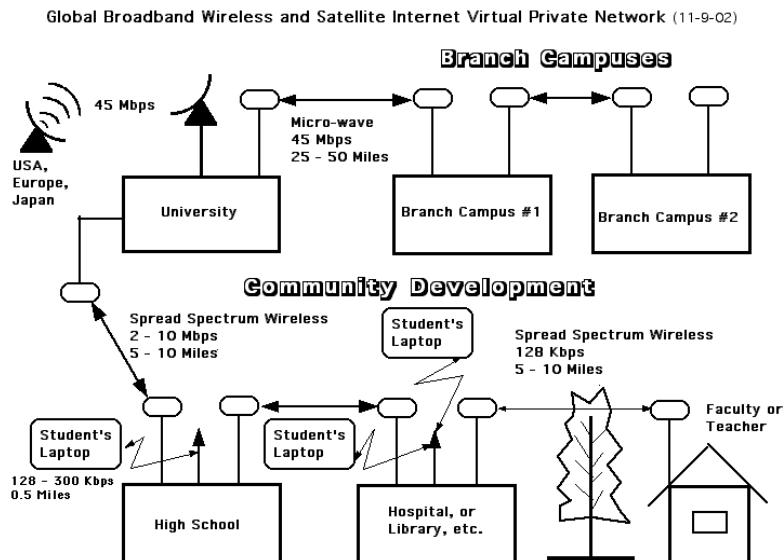
- Linda Hawkin Israel** is founder and director of MAMAS (Mobile Assessment & Media Systems), a leading edge communication model for countries emerging from crisis and armed conflict. Linda is on research faculty, School of Economics at Nelson Mandela Metropolitan University, South Africa; a US-educated Registered Nurse and trained in Africa as a midwife. Linda has continued to stay current in obstetrical high risk management and brings this expertise to development of tools, systems, partnerships which would add capacity for maternal health in rural Africa. With focus on both human rights and health priorities, Linda and the international MAMAS team traces project roots, inspiration and direct response to need directly back to United Nations Fourth World Conference on Women, 1995, *Beijing Platform for Action*. Technologies emerging over this period were incorporated to further these established priorities.

Appendix B: Systems

- Global University Systems (GUS)** is a worldwide initiative to create satellite/wireless telecommunications infrastructure and educational programs for access to resources across national and cultural boundaries for global peace. Education and job skills are the keys in determining a nation's health, wealth and influence.

As diagrammed in Figure 1, GUS programs and services will be delivered via regional satellite hubs, typically located at a major university, that connect via high-speed satellite (~ 45 Mbps) to educational resource cites in the E.U., U.S., and Japan. In a sense, the regional satellite hub is to be the major Internet Service Provider (ISP) for not-for-profit organizations in the region and the gateway to the outside world. The major university may also be connected to very high speed broadband Internet, as similar to the optical fiber network at 3 Gbps of the Multimedia Broadband Internet (MBI) of the Ethiopian government.

The buildings with a broadband Internet connection will then also become relay points for the low-cost "Wi-Fi (wireless fidelity)" networks at 10 Mbps that are now rapidly appearing in Japan, USA and Europe. This advanced wireless communication with laptop computer will make e-learning possible for anyone, anywhere, and anytime with capabilities of Internet telephony, fax, voice mail, e-mail, Web access, videoconferencing, etc.



GUS is headquartered at the Global E-learning Center at the University of Tampere in Finland, under the direction of the UNESCO/UNITWIN Networking Chair, held by Dr. Tapio Varis. Currently, institutions with faculty members who are participating in GUS development projects are numerous in many countries around the world. GUS serves as an educational broker for universities, thus helping them gain international influence and access to students that they would otherwise not reach. Those institutions affiliated with GUS become members of the GUS/UNESCO/UNITWIN Networking Chair Program.

2. **Mobile Assessment and Media Systems (MAMAS)** has been designed to provide technology transfer, training and support for strategic information and resource flow anchored between multi-purpose, portable telecenters and linked to a global network of health, development and crisis recovery specialists. Using solar energy, satellite, web and radio technologies, each MAMAS site will feature systems customized from participatory community design. Target populations can then be offered specialized training and professional development through partner universities, school and community based networks and international relief and development agencies. The final network layout will be built on a modular base with standard pre-approved components.