

Concept Note

The Global Early Warning System (GEWS) with Global University System (GUS) In Rwanda

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1. Introduction to GEWS/GUS

The **Global Early Warning System (GEWS)** is designed to help decision-makers achieve a positive sum/win-win solution to a crisis. It incorporates a highly advanced, globally distributed decision-support and computer simulation system. Using modeling and gaming techniques, it will provide alternatives to escalating crisis, conflict, and war. The alternatives will include collaborative economic, environment and sustainable development strategies that are especially suited to developing countries, internally and in their relations with one another.

GEWS will also train emerging decision makers in crisis management, conflict prevention and resolution, and negotiation techniques – techniques based on *facts and figures* rather than an inappropriate sense of urgency. We will interconnect experts in many countries via the global Internet to collaborate in the prevention of crisis, and to develop solutions that mitigate crises and adapt. Those using the system will be able to address crises which already exist, such as environmental issues and various social and economic stresses. Beyond this, GEWS will allow us to explore new alternatives for addressing the problems and opportunities of an increasingly interdependent globe.

The plan is to construct simulation models of each participating country. These models will include, among other factors, data that describes their socio-economy, matters relating to energy, and their environment. These will be interconnected into a global-scale simulation model, which in turn will be the basis for collaborative effort when a concern or question arises. Decision-makers and students will then have a guide to prevent or resolve conflicts -- *facts and figures* -- as was stated earlier. Key to this is the **Global University System (GUS)** <<http://tinyurl.com/kofpf>> <<http://tinyurl.com/sfgm7>>, described below.

The education of future leaders is a high priority. Their training should be evidence-based. GEWS assists in this with its dynamic simulation models, the best tool we have for understanding problems that threaten confrontation, and pursuing solutions. They will play out different policy scenarios and make informed decisions. The premise of GEWS/GUS is that as our problems become more complex, our weapons more powerful, rational analysis and critical thinking are fundamental to global education for peace.

2. Introduction to GEWS/GUS Rwanda

Rwanda, as many of our colleagues know, is a country with limited natural resources, densely populated and poor. Population growth, limited energy resources, poverty, deforestation, soil degradation, and a vulnerable ecosystem have all aggravated the country's exposure to political, environmental, social, health, and economic crisis.

Conversely, Rwanda has a high potential of increasing economic growth. It can do this through better management of its natural resources internally, and cross-boundary coordination with other African nations.

The present project will put in place a focused and interdisciplinary approach to help achieve this, by using GEWS modeling to create an integrated national socio-economic, energy, water, health and environment model for Rwanda. The outcome scenarios will strengthen the capacity of decision makers nationally, provincially, and in local communities. They will have new and important tools to manage natural resources and their knowledge, and to find the positive, productive route when crisis or conflict threatens.

The project will establish the Rwanda branch of the **Global University System (GUS)**. This will provide access to high-quality education via global e-learning, and e-healthcare using broadband (BB) Internet and advanced telecom. It will assist those using GEWS in model building, maintenance, administration, and gaming execution.

The project will pursue cooperation with all the institutions connected to the management of the Nile River. Initiating cooperation towards a Framework International Agreement to Manage the Nile River Basin will be a regional responsibility of the Rwandan GEWS Hub. This would use the "computer mediated negotiation technique" as the UN did with 150 countries regarding the "Law of the Sea"; in this process, adversaries became collaborators.

3. Purpose and objectives

We will create the **Globally Collaborative Network of the Centers for Conflict Prevention, Management and Resolution (GCN/CCPMRs)**. This will focus on economic, social and environmental issues in Rwanda and

various countries, such as Nigeria and Democratic Republic of Congo, which will be connected through broadband Internet for conducting the following two-tier system:

- a. One for assisting decision makers in developing and using a globally distributed decision-support system for wide-ranging policy analysis and evaluation, providing positive sum/win-win alternatives to crisis, conflict and war.
- b. The other for training student decision makers for leadership, emphasizing young women's education, as they learn the dynamics of interwoven world phenomena, and apply rational analysis and critical thinking in situations requiring crisis management, conflict resolution and negotiation techniques.

The **specific socio-technical objectives** of the project in Rwanda will include:

- a. Creating socio-economic, energy, health and environment dynamic simulation models for more effective advocacy, informed policy, public understanding and participation and concrete community development.
- b. Building and operating a GEWS operations center in Kigali, Rwanda, as a regional hub to promote and coordinate sustainable development strategies and crisis/conflict prevention initiatives.

4. Technical Infrastructure

The focus of GEWS is “paradigm shift.” In sum, this means programming facts concerning international political relations, national and local issues, human behavior, and science into a highly advanced computer system, and asking questions. Combining “normative” (role-playing) gaming and “quantitative” (model-based) simulation is an approach that sets a new, high standard in the use of these mathematical techniques, as well as the pursuit of human well-being and sustainable development.

The dynamic simulation tool would support comprehensive, integrated long-term national development planning by using comparative analysis of different policy options. This would help users identify the set of micro policies that tend to lead toward a desired goal. This insight into how different indicators of development interact with one another to produce an outcome deepens the understanding of development challenges.

5. The GEWS/GUS Rwanda Project

The main objective of the GEWS/Rwanda management model is to enable decision-makers to evaluate just how appropriate and relevant different long-term development scenarios are for them.

The key project components are:

- (1) The creation of the hub of GEWS in Kigali. This will interconnect national simulation models of various sub-Saharan African countries through broadband (BB) Internet.
- (2) Water Usage along Nile River Basin/Food Systems and Human Health: The first task of the proposed hub of the GEWS would be conflict resolution on water usage along Nile Rivers with nine countries: Egypt, Sudan, Ethiopia, Uganda, Tanzania, Kenya, the Democratic Republic of Congo, Burundi and Rwanda.
- (3) E-healthcare and Telemedicine: GUS will increase access to customized communications and related resources, which enable and encourage hospitals and e-healthcare centers to use the Internet and hybrid technologies to provide patients second opinions online for various infectious and chronic diseases, including malaria, HIV/AIDS, polio, cancer, heart disease and other conditions. Existing university and community programs will help define communications and medical information management systems, reducing obstacles to good health management.
- (4) Settlement and Disaster Preparedness. In cooperation with a partner project, we intend to develop 100,000 Imidugudu (small rural houses), using low carbon insulating concrete forms made out of polystyrene, with solar roofing and sustainable water systems. These would be human settlements with e-health and telemedicine capability in rural areas. The communities would also be guarded with the disaster preparedness information infrastructure.
- (5) Broadband Internet through Global Ring Network for Advanced Application Development (GLORIAD). GLORIAD is built on a fiber-optic ring of networks around the northern hemisphere of the earth, providing scientists, educators and students with advanced networking tools that improve communications and data exchange, enabling active, daily collaboration on common problems. With GLORIAD, the scientific

community can move unprecedented volumes of valuable data effortlessly, stream video and communicate through quality audio- and videoconferencing <<http://www.gloriad.org/gloriaddrupal/>>.

Customizing and institutionalizing GEWS requires completing a series of tasks concurrently. These include identifying the core issues, training key staff, institutionalizing the model, pilot testing and ongoing applications, support and analysis throughout the project. A detailed project work plan and time frame will be included in the full project document. Also related projects are in progress: (1) GEWS/Nigeria; (2) GEWS/Democratic Republic of Congo; (3) GEWS/Bangladesh.

6. Documentary Filmmaking and other video projects

From the beginning of this project, it will be documented by a professional film team. They intend to create a broadcast-quality production about GEWS/GUS, their significance in our day, and the practical tasks of moving the system into operation. They will also produce other short films and segments suitable for various uses, including education, the internet, and the promotion of the system with various government and private entities. They will include special focus on the countries and individuals who exhibit the desire to address their challenges by being part of this.

7. Conclusion


Humankind must grow. To adequately confront our growing planetary socio-economic and environmental crisis, there is a need for a global model that will assist people in understanding and managing complex phenomena. GEWS/GUS can provide the tools for this as no other system has; humankind can make it work through multilateral, regional and bilateral cooperation.

The ultimate goal is to make peace attainable, whatever the scale of the conflict. We look to the future by promoting mutual understanding among young decision-makers, by having them engage in Peace Gaming (what-if?) policy analysis, beginning with conflict over environmental issues on local, regional and global scales. They, and we, will use the most advanced Information and Communication Technologies (ICTs) available.

Creativity among young people will be encouraged by enabling those in developing countries to work with others in advanced countries and perform joint collaborative research. They will use virtual laboratories for hands-on experiential/constructive learning, and create knowledge through the global GRID technology, thus forming the Globally Collaborative Innovation Network (GCIN).

The first milestone of this project is to make the GCN/CCPMRs one of the Research and Training Center (RTC) programs of the United Nations University (UNU). This will involve the collaborative efforts of the Earth Institute (EI) of Columbia University, Millennium Institute (MI), New York University/Polytechnic Institute (NYU/PI), International Communication of Negotiation with Simulation (ICONS) of the University of Maryland, GLOSAS/USA, and Global University System (GUS)/UNESCO/UNITWIN Networking Chair Program at the University of Tampere, Finland, and others. If accepted as a mandate of the UNU/RTC, this project will help decision-makers at the various agencies of the United Nations.

Learning together and working together are the first steps toward world peace (Senator J. William Fulbright).

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