

**Leland Initiative:
Africa Global Information Infrastructure Gateway Project (698-0565)**

Strategic Objective 3: End-User Applications

**Trip Report/Next Steps
Benin**

March 3-10, 1997

Prepared for:

United States Agency for International Development
Africa Bureau, Office of Sustainable Development
USAID/Cotonou

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Introduction

This trip was a follow-up to the Leland SO3 Country Assessment in May 1996, with team members Zoey Breslar, Steven Dorsey, Jim Esselman, and Linda Leonard. It included working with the USAID mission staff to further their understanding of the Leland Initiative, and help them think strategically about incorporating Internet technologies into their activities and those of their current partners. It also included visits to four GLOBE schools to introduce the possibility of Internet connectivity, and to talk about its relevance to the GLOBE Program activities and other curricular applications.

Background

Recommendations from the Leland SO3 Country Assessment are still relevant to the situation in Cotonou and to the objectives of the USAID mission. (See Annex A.) These activities focus on Internet awareness, Internet training, and support of Internet end-users in Benin.

Leland's Memorandum of Understanding was signed between the Government of the Republic of Benin (GRB) and the USG on January 9, 1997. The equipment for the national node, to be installed at the OPT, is due to be shipped and installed as soon as possible for a targeted operational date of June 1997. Meanwhile, USAID/Cotonou is funding four OPT officials to attend technical training in Abidjan on March 24, in preparation for the receipt and operation of the equipment. John Mack (DOS), accompanied by an AT&T team, will work with the OPT on tariffing issues before the equipment arrives.

Country Climate

Internet access is currently available through the OPT in Cotonou. For modem access to the Internet, there is a one-time fee of \$9.00, and a on-line cost of 7.5¢ per minute; for an email account, there is a one-time fee of \$36.50, and a monthly charge of \$18.25. The OPT currently has 384 subscribers (March 1 quote), and its capacity is saturated. Customer service is handled by several private sector businesses, whose services include configuring PCs for the Internet, installing software, and giving introductory software training. The private sector is growing to meet this demand for services, including Web page designers, and three cybercafés for public access to the Internet and for other software applications.

The U.S. Information Service, over the past several years, has played a large part in building Internet awareness in Benin. They host lunches and speakers about the Internet, and have public access to the Internet using a GLOBE computer. This enables USIS to host webchats for GLOBE students and show the potential applications of the Internet to a variety of audiences. With the new information services soon to be offered through the USIA electronic library, USIS/Cotonou is considering expanding their Internet services to cater to a wider -- though targeted -- audience which would include journalists and other media professionals.

Institutions are becoming familiar with the communications options through other donors' projects. For example, UNDP is in the process of funding an NGO intranet; it is designed to encourage communication between Beninese NGOs, and to develop databases of local information that could be sold to those outside of the network.

Overall, through word-of-mouth and limited advertising, the general public is becoming aware that the Internet exists. However, a very small group of people are actively using the Internet in Benin. A national, week-long exposition would be ideal for demonstrating the capabilities of the Internet and allowing the public to explore the specific applications. ISPs would benefit from this opportunity to advertise their services.

USAID/Cotonou

USAID/Cotonou has one Strategic Objective (Basic Education), a Special Objective for Health (to become a Strategic Objective by the end of FY97), and a Special Objective for Democracy and Governance. The Strategic Objective is active; the Special Objectives are in the final strategic planning phase.

Meetings with each team included a refresher on the Leland Initiative's objectives, an update on the situation with the Internet and the Initiative in Benin, brainstorming on how the Internet would be useful to their work and to their partners' goals, considering which partners would be good investments for funding for Internet activities, and identifying next steps for the Leland Initiative and Internet applications. (See Annex B for Team Meeting Agenda and Materials.)

The Basic Education team was able to strategize immediately on the possibilities of getting the National Ministry of Education and Scientific Research (MENRS) offices communicating via email, beginning in Cotonou and Porto Novo with the intention of expanding to all districts. They also addressed regional possibilities for networking, citing Educational Research Network for West Africa (ERNWA) in Abidjan.

The Health team effectively thought through the possibilities for supporting their current partners, and which institutions could act as models or umbrellas in incorporating a number of other organizations.

Financial resources were of concern to the Democracy and Governance team, but became manageable after discussing strategies to support partners without a lot of funding (i.e. training and strategic planning). Beninese NGOs are currently joining to form a consortium, which could be jointly funded by the DG team and the other teams. The DG team is still developing its strategy, and will continue to consider its investments in Internet applications.

All teams raised the need for rural connectivity, and questioned the necessity of constant Web access for all institutions. From this, discussions ensued about current information and communications strategies, and the teams gained a further understanding of Leland's goals and technological options for Internet connectivity. Teams will further explore other donor activities in telecommunications, and other donors' funding of common NGOs, as well as how to support PVO activities and communications strategies.

Overall, all teams were enthusiastic and supportive of the Initiative, and eager to begin using the World Wide Web. However, USAID/Cotonou does not have Web access through the VSAT they share with the Embassy and has not yet signed up with the OPT for a local connection. This

inhibits scheduling the *Internet for Development: Applications and Training Workshop*.

The School-to-School Partnership

The Leland Initiative's School-to-School Partnership aims to facilitate cross-cultural dialogue and joint projects between African primary and secondary schools in countries where this Initiative is active, and where similar goals are adopted in schools in the United States. In African countries, this Initiative, in conjunction with the USAID mission's bilateral funds, may assist schools in becoming aware of the academic uses of the Internet, and in acquiring the hardware and training needed to participate in this Partnership.

The GLOBE Program (Global Learning and Observations to Benefit the Environment) is an international science education program with an Internet component. It compliments Leland's School-to-School Partnership by providing a familiar educational program with an Internet application, from which teachers and students can springboard into endless other Internet applications.

Benin signed onto the GLOBE Program in April 1995; at that time, the Alliance of Black Telecommunications Employees donated computers to each of the eight initial GLOBE schools, the Country Coordinator, and USIS. Because the cost of computer hardware is not an issue in this case, an introduction to the potential academic applications of the Internet was useful during the bi-annual GLOBE visits that ran concurrently with the trip. Many GLOBE teachers had already been introduced to the Internet during their GLOBE training, and those from CEG GBegamey had participated in a GLOBE webchat at USIS.

Many schools have already participated in school partnerships, and are enthusiastic about communicating with other schools through the Internet. CEG GBegamey has already begun the process of getting Internet connectivity. This is due in large part to the support of the Association de Parents d'Élèves (APE), which provides the financial support to these kinds of projects in public schools. With the help of USIS, USAID will target Internet awareness and the benefits of academic applications to the members of the national APE. Awareness sessions will also be provided to Ministry officials (including technical advisors), GLOBE school directors, and teachers.

USAID will support these efforts by incorporating interested schools into extra sessions of the *Internet for Development: Applications and Training Workshop*, which will be tailored to academic needs and themes, and provide specific resources for teachers, students, and administrators. Other support is given to GLOBE activities through 3-year technical assistance from USAID's CLEF (Children's Learning and Equity Foundations) Project. Available funds are to be applied to long term projects, which include translation of GLOBE materials in the French language, and exploring options for making GLOBE instruments locally to reduce their cost. Perhaps these funds could be applied to training costs for GLOBE-affiliated organizations, though these decisions will be made jointly by USAID and the MENRS. GLOBE schools will benefit from access to GLOBE Mail once on-line, a structured and comfortable way to begin using the Internet and working with other schools world-wide.

One of the primary obstacles to the growth of the GLOBE Program in Benin is the effectiveness of the GLOBE Country Coordinator. Mr. Bello is still in need of a permanent office and an Internet connection, both of which were to be furnished by the MENRS according to the GLOBE Memorandum of Understanding. He also needs Internet and computer training. To compound the situation, Mr. Bello is waiting for Ministry approval to expand the number of GLOBE schools nationally, and has still not received a response to the requests he sent in December 1996 and February 1997.

Summary of School Visits

(See Annex C for Contact List for people mentioned below.)

During the week of March 3, bi-annual GLOBE visits were attended by GLOBE Country Coordinator, Mr. Bello; GLOBE representative at USAID/Cotonou, Karen Kent; MENRS Technical Advisors; and Leland Initiative team member, Zoey Breslar. These visits included GLOBE schools near Cotonou. The following week saw visits to GLOBE schools in the northern regions, without the Leland team member. Internet awareness building in the northern regions was not appropriate at this time, as national rural Internet connectivity strategies are still in the planning phase.

Schools visited include CEG GBegamey (secondary) and Akpakpa Central (primary) in Cotonou, Lycée Behanzin (secondary) in Porto Novo, and CEG Lokossa (secondary) in Lokossa. At each school, attendees included the GLOBE/Ministry/USAID delegation above, the school director, GLOBE teachers, and a representative of the APE for that school. Each school visit was preceded by a courtesy call to the districts' MENRS representatives.

All GLOBE schools are enthusiastic about their Programs, and have the support and interest of the APE and the schools directors. Many GLOBE teachers have been successful in having GLOBE data be used in other classes, and have recruited and are training other teachers to become involved with GLOBE. Each school has a room dedicated to the GLOBE computer and equipment. Universally, students are committed to the Program, taking measurements every day, including weekends and vacations.

Many schools are targeting parents, other teachers, and communities in building awareness about the GLOBE Program. CEG Lokossa recently concluded a GLOBE competition of five environmental questions --some involving library research-- after a week of GLOBE awareness where the community was invited to watch and learn about the measurements taken. Though the competition was open to the public, the winner was a sixth grader -- Micarette Gomido. CEG Lokossa has also compiled a report of their findings for 1996. Akpakpa Central is planning similar activities to inform the parents and the community during their annual Cultural Week. They will display the GLOBE students' work, and emphasize the importance of the students' involvement with Internet technologies and the implications for their eventual involvement in the global economy. This will assist in gaining parents' support for an Internet connection at the school.

The MENRS Technical Advisors were consistently impressed and supportive of the Program's activities; this was their first exposure to the GLOBE Program. They will be making recommendations to the Minister for continued support of GLOBE.

Though school officials were not very familiar with the Internet's capabilities, they had an appreciation for the potential for applications and communication for their students and faculty. This was an opportune time to reinforce the value of the Internet and answer any questions about its applications, and/or cost and requirements for connectivity. Each of the schools was concerned with the latter, and Behanzin officials discussed at length the necessity of another telephone line into the school. CEG GBegamey has already applied for an Internet connection, and is waiting for the installation of a phone jack in the building with the computers. Other schools were impressed with GBegamey's progress, which made Internet connectivity a potential reality for them. The value of Internet connectivity was further enforced when students at CEG GBegamey voiced many scientific questions about their measurement results, and Karen Kent explained the availability of GLOBE scientists for answers via webchats and email (as well as postal mail for now). Bello and Karen Kent will be strong advocates for bringing this technology into the schools, and can answer most questions that will arise in the awareness-building process.

During these visits, Bello addressed the need for having a line-item in the school's budget for GLOBE activities. Though most schools had not yet incorporated GLOBE into their budgets, Lokossa had, in the line-item for their laboratory expenses. The GLOBE teacher at Lycée Behanzin approached the administration about this without success this year. Bello also emphasized the importance of having GLOBE space for students to keep their equipment and do analysis, and GLOBE student priority in using the computer. This was not a problem at any of the schools visited.

Several teachers voiced some concerns about maintenance and replacement of scientific instruments, which is the responsibility of the individual schools. Lycée Behanzin was having difficulty generating interest among other teachers in spite of informal and targeted awareness building, and is considering introducing additional incentives for GLOBE teachers.

The primary concern voiced by the secondary students was the lack of opportunities to continue with GLOBE, once completing the level where the Program is offered in each school. Though many of these students assist the lower levels with their measurements and continue their work with the GLOBE teachers, they were frustrated at not being able to focus on GLOBE academically.

Professional Linkages for GLOBE Students

As GLOBE students tend to be self-selected, they should be encouraged to continue with their interests in science beyond the GLOBE experience. Logical professional linkages exist with environmental research institutions such as the Association Beninoise pour l'Environnement (ABE) and Songhai, as well as the University of Benin. Students could become involved with these institutions as interns while in school, contributing GLOBE knowledge and data, while exploring the professional opportunities the field has to offer.

Mr. Baglo and Mr. Migan of ABE are enthusiastic about working with GLOBE students, though they feel they would have much more to offer once their Internet capabilities are enhanced (training in Web page development, a scanner, a laser printer, software). They are currently benefiting from World Bank support, and plan to have a public access center which includes Internet access, multi-media capabilities, and tailored databases of Beninese data. With Internet access and the guidance of Mr. Migan, who is familiar with the environmental applications and resources the Internet offers, GLOBE students would gain a whole new understanding of global environmental issues and the importance of Benin's contribution to global environmental research. ABE also has affiliations with national and regional organizations, and donor efforts for environmental issues.

Songhai (originally recommended as a fast-track institution in the Leland SO3 assessment in May 1996), with its headquarters located in Porto Novo, is in the process of becoming a GLOBE institution which suits its mandate as an agricultural research and training institute. Father Nzamujo, the Director, is eager to include GLOBE students to learn the applications of GLOBE activities in Africa. Songhai has Internet connectivity (though expensive), and offers training to its students in hardware maintenance, software installation and use, database development, Web use and other computer applications. Father Nzamujo is in the process of expanding his facilities to include two new computer laboratories and an intranet for his administrative staff in Porto Novo, four branch farms in other regions of Benin, and centers in Mali and Burkina Faso. He is interested in becoming an ISP for the educational domain in Benin (and is prepared to install a satellite dish on the roof of his administrative building), providing Internet service and resources to educational institutions.

Opportunities for GLOBE student involvement with ABE and Songhai should be explored, with the help of USAID/Cotonou, the Leland Initiative, the GLOBE Program, and the Peace Corps.

Role of the Peace Corps

The Peace Corps plays an important role in five GLOBE schools in Benin and can serve as a catalyst in expanding the number of schools involved. In August 1995, the new group of Peace Corps Volunteers received three days of GLOBE training, and selected volunteers have since played an important part by encouraging schools to participate in the Program. Volunteers also help make the GLOBE activities sustainable by showing their applicability within the schools, and by facilitating information sharing between schools.

Peace Corps' support for GLOBE needs to be clear and consistent. By involving Peace Corps in GLOBE activities, the host governments will be encouraged to participate in the Program, knowing that grassroots support will be available in facilitating its success. In return, the Peace Corps can use the GLOBE Program to enhance their education activities. Support would include GLOBE training opportunities, volunteer assignments to GLOBE schools, skills training for volunteers for quick financial assessments of a school's ability to afford Internet connectivity, and a general facilitative role.

According to Marcus Chance and John Finarelli, volunteers involved since August 1995,

GLOBE should be introduced to new volunteers during their three month introductory training, then formal GLOBE training should be offered at a later date after volunteers are familiar with the school and the players, and host country counterparts should be invited to attend. The new volunteer group is due to arrive June 13th, 1997.

Conclusion

Benin has moved forward with Internet connectivity and awareness the past year, and will expand rapidly on this progress due to the recent signing of the Leland agreement. To prepare Beninese Internet end-users, USAID and other players in the Internet industry must anticipate and address their needs.

USAID should begin by getting an Internet connection, and training its staff and partners in effective Internet use for development. As USAID/Cotonou is heavily involved with Leland activities in Benin and will continue as the hardware is installed, a Leland Coordinator may need to be hired to handle the resulting inquiries and programs.

A week-long national exposition of Internet technologies, upon the operation of the national node, is an ideal way to expose the public to the capabilities of the Internet and allow ISPs to advertise their services. For the exposition to be effective, hardware must be in place on the national level and ISPs must be ready for a sharp increase in demand. USIS and the media can play an important role in the promotion of the exposition. A Beninese chapter of the Internet Society could also play an important role in developing and supporting an Internet end-user base.

There is much potential for GLOBE schools to act as leaders among academic institutions in integrating the Internet into their curricula. USAID, as a continuation to its current involvement with GLOBE, can continue to encourage and foster GLOBE school expansion and Internet connectivity with the GLOBE Country Coordinator, and pursue professional linkages for GLOBE secondary students.

USAID, with its combination of Leland and bilateral activities, will play a key role in establishing Internet connectivity with private sector involvement in Benin, adding strategic applications for a solid Internet end-user base.

NEXT STEPS MATRIX
USAID/COTONOU AND THE LELAND INITIATIVE

	Action	Person Responsible	Time line
USAID/Cotonou Staff	Get connected to the Web!	Suggs/Anhouansou	ASAP!!
	Hire Leland Coordinator?	Suggs	?
	Expo (involve USIS?)	Suggs/Coordinator	after installation
	Internet training for USAID staff and fast track invitees	Suggs/Coordinator/ Leland SO3 team	after installation
	Info/Comm projects with selected partners	USAID/Coo SO team members	asap
	Participation/guidance in ISoc?	Coordinator?	cont., once est.
	Encourage continued Internet use among partners	USAID/Coo SO team members	continuous
The GLOBE Program	Encourage MENRS to expand number of GLOBE schools	Bello (asst from Kent)	asap
	Internet awareness for APE, directors, teachers, MENRS	USIS/Bello and Kent	asap
	Expand training and applications	Peace Corps? Songhai?	Summer 1997
	Encourage professional linkages for secondary students	ABE? Songhai? UNB?	asap
Fast Track organizations	Attend Internet training for USAID mission and invitees	--	July?
	ISoc involvement?	-- (Coordinator role?)	asap
	regional activities?	AID/Coo and REDSO	...
Longer term organizations	Attend seminars/gain awareness about the Internet	--	
Internet Industry	Continue Leland SO1/SO2 TA for ISPs..	Suggs and AID/W Leland team	
	Establish Chapter of ISoc	--?	
	Develop rural Internet access	OPT	
Donors	Introduce/promote the Leland Initiative, look for collaborative opportunities (UNDP? Canadians?)	Park?	asap
PVOs	Review information strategies, promote among beneficiaries	USAID/Coo SO team members	asap

Annex A

Country Implementation Strategy

COUNTRY IMPLEMENTATION STRATEGY

taken from Leland SO3 Assessment Report for Benin, May 1996

Once policy and technical constraints are eliminated and affordable Internet access can be made available to the public, the following recommendations form the structure for the Leland Initiative Country implementation Strategy of Benin. More detailed development of these ideas will occur once they have been reviewed by USAID/Cotonou and the Africa Bureau.

1. National Internet Exposition

The first step is to organize an extensive Internet exposition where local media handle the publicity of the multi-day event, and the demonstrations target all potential users, with a special emphasis on private sector interests. This will allow the general public to see how the Internet operates, get some hands on introduction, and receive some basic instruction on what is required to operate on the Internet. This level of introduction is necessary to begin the process of assimilating the use of electronic information and networking into organizations.

2. Internet Resources Training in USAID/Cotonou

USAID does not have an internet connection, though they need one as soon as possible. Once established, personnel need to be provided training on development information resources and how they can best use the Internet. This training is important in that in order for USAID/Cotonou to promote effective use of this technology among its development partners in Benin, staff must first become familiar enough with this resource and its potential uses to be able to provide encouragement and direction to partners. This may warrant bringing the Leland point person from the mission to Washington for training and/or administering an Internet Resources Training Workshop at USAID/Cotonou. R&RS staff have conducted such workshops at USAID Missions in the past and could design and conduct this training. The training centers around raising awareness and giving Mission staff hands on experience with the valuable Internet resources they can use to do their jobs more effectively. This training can have special sector level tracks and can be scheduled over a five day period.

3. USAID Assistance for Institutional Internet Connectivity

As part of the Internet Resources Training, or as a separate activity, R&RS could develop materials and training to assist USAID/Cotonou (and other participating Missions) in learning how to incorporate assistance for Internet connectivity and related technologies into the project planning stage. Using the assessments that have already been performed or conducting additional assessments among current or potential USAID partners, R&RS could advise USAID/Cotonou and the Africa Bureau on the type and level of assistance needed in given institutions in order to introduce or expand Internet connectivity. At the project design stage, R&RS could assist USAID/Cotonou and the Africa Bureau in designing Internet related assistance activities, including the development of indicators on how to measure the impact or contribution of Internet connectivity in an institution.

4. Develop and Implement Appropriate Fast Track Pilot Activities

As USAID/Cotonou is one of the early USAID Missions participating in the Leland Initiative, important practical experience can be gained through the implementation of selected fast-track pilot activities such as those indicated previously in this report. It is recommended that USAID/Cotonou and the Africa Bureau select those pilot activities to receive Agency support and begin to develop more fully the ideas that have been presented here. Again, R&RS could assist in the planning and activity design for these pilots and could provide valuable technical assistance in Internet training in selected institutions.

5. Small Grants

To encourage and promote Internet usage among institutions who may not have the financial and/or technical capacity, USAID should establish a proposal-based small grant mechanism for new users to buy equipment and training.

6. ISP Training and Support

Though it is not USAID's role, the mission -with Washington's help- should facilitate Internet Society involvement in providing training and guidance for potential new and current Internet Service Providers.

7. Demonstration and Training Centers

To follow-up on the introduction provided by the exposition, Internet Demonstration and Training Centers would provide the following types of services: a) free, public demonstrations; b) fee-based Internet accounts and Internet workstations for those without access to computers at home or in the office; c) fee-based end user training; d) fee-based Web page development and training; e) free Institutional Information and Communication Strategy consulting; f) fee-based Internet publishing consulting services and training; and g) free proposal development consulting for Internet related activities. It could be the role of the Benin Internet Society to set up and run this type of center, or some other public or private sector entity could establish it.

8. Benin Internet Society

USAID should facilitate the creation of a discussion/support forum for new users, perhaps involving the Internet Society. USAID may wish to provide nominal assistance to the formalization of a Benin Internet Society, perhaps as a national chapter of the official Internet Society. USAID would likely have to provide guidance on how to set up and operate an effective professional society. This type of society could do much of the marketing and awareness raising that will need to occur in Benin as long term follow-up to the national workshop. This society may also serve the purpose of bringing together the principals of international donors currently working on or interested in working on Internet related activities in Benin.

9. Rural Communications

As per the second level barrier, once the Internet is established in the south, USAID/Cotonou needs to consider a strategy for rural communications in Benin.

Annex B

Team Meeting Agenda and Materials

Meetings with SO teams
USAID/Cotonou
The Leland Initiative
Zoey Breslar; March 5-6, 1997

- I. Refresher on the Leland Initiative and its SO3, and next steps
- II. Discussion of USAID/Cotonou SO goals
- III. Brainstorm on list of USAID/Cotonou SO partners
 - A. Who? Where?
 - B. How are they currently being supported by USAID? by other donors?
 - C. What do they need in an information and communications strategy to make them more effective?
 - D. How can they act as a model and catalyst for other partners/organizations?
- IV. Questions, USAID/Cotonou SO team next steps

Materials:

Leland briefer

Leland SO3 description

1 page proposal request (Ghana)

Brainstorming matrix for institutions' information and communication strategy

Mission:

Clientèle:

	Communications	Stratégie pour l'Information	
Interne		récupération	
		dissémination	
Externe		récupération	
		dissémination	

**Components of a Proposal to USAID
Leland Initiative: Africa GII Gateway Project (698-0565)**

Though African countries have recently shown movement toward more open economies and societies, there remain formidable constraints on sustainable development in such areas as the environment, disease prevention, literacy and private sector development. New technologies known as telematics - in which American firms are world leaders - make information more accessible, transferable and manageable. Telematics are the catalysts transforming economic and social structures around the world and supporting fast-paced sustainable development. Africa needs access to such information and techniques to provide more resources and efficiency to its development programs.

The Leland Initiative seeks to bring the benefits of the global information revolution to people of Africa, through connection to the Internet and other Global Information Infrastructure (GII) technologies. It is the core element of the Africa Bureau strategy, "Empowering Africans in the Information Age." The Initiative emphasizes a public/private partnership approach both in Africa and the US to bring full Internet connectivity to up to 20 USAID emphasis countries in sub-Saharan Africa.

After assessing your organization's information and technology needs, you have been invited to submit a proposal to USAID to apply for available resources. To assist you in writing your proposal, below please find its necessary components.

R An Introduction to your organization, include briefly:

- R** mission
- R** membership
- R** clientele
- R** achievements

R How your organization works with USAID

R What your objectives are for this proposal/what you are asking for, include:

- R** why this is essential to your organization
- R** how this is sustainable
- R** a budget (Laura Brodrick may be contacted for assistance)

For more information, or to submit your proposal, please contact:

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Annex C

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