

**Applying Information and Communication Technology to Enhance African Capacity in
Agriculture and Food Policy Research, Outreach and Teaching: A Collaborative
Initiative to Build a Food Security and Policy Information Portal for Africa (FSIP)¹**

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Abstract

This paper discusses a collaborative internet-based information portal undertaken to improve the skills of African scientists to use more effectively the wealth of scientific knowledge and experience increasingly available over the internet. It is designed to give a one-stop and multi-language location for: (a) easily finding data and analyses on food security and food policy in 25 topic areas, and for 54 African countries; (b) making their own gray literature more visible to others, thereby fostering better south-north and south-south learning; (c) finding full text digital library resources as well as training materials on more effective use of information and communication technology tools; (d) accessing learning resources on improved applied research and policy analysis methods and practice; and (e) spotlighting experiences on improving the effectiveness of food security and food policy extension efforts. Opportunities and constraints facing partners (UNECA, several regional African policy research networks, and MSU.) in this program are also reviewed.

¹ An earlier version of this paper was presented at the Inaugural Symposium of the African Agricultural Association of Agricultural Economists (AAAE), Nairobi, Kenya, December 6-9, 2004. See downloadable version of this paper, also a two page summary of FSIP and downloadable PowerPoint explanations of FSIP in English, French and Portuguese at: <http://www.aec.msu.edu/agecon/fs2/fsip/index.htm>

A Collaborative Initiative to Build a Food Security and Policy Information Portal for Africa (FSIP)

1. Introduction

Getting the food and agriculture system moving faster is crucial for structural transformation and smallholder farmer poverty reduction in Africa. This requires investing in basic productive and market infrastructure, and expanding appropriate research, knowledge, and technology for increased productivity and competitiveness of domestic food and agricultural supply chains. These are the foundations to increased food security and overall income growth in Africa (Dioné, 2004). Crucial knowledge to support agricultural development must be thought about differently because of the advent of the Internet and the World Wide Web. The steady reductions in the cost and increases in the speed of Internet services in Africa are changing the way we must think about the development, storage, and dissemination of policy analysis and training materials. Yet much remains to be done to harness these forms of information and communication technologies more effectively to help achieve African development goals in agricultural sciences, food security, and policy reform (UNECA/DISD, 2004).

1.1 Objective and Overview of this Paper

This paper discusses a project underway to improve the capacity of African technical as well as social science researchers and policy analysts to enhance the effectiveness of their work through better use and more timely sharing of the tremendous knowledge resources increasingly available electronically. These are the types of resources that can assist in the conduct of research, extension and teaching, all aimed at increasing the use of scientific knowledge for more effective policy analysis and design.

The next section presents a brief overview of objectives and progress made to date in building the Food Security and Food Policy Information Portal for Africa (FSIP). This is followed by a discussion of the research and policy challenges FSIP is addressing and the potential payoffs from the effort. The paper closes with a description of the FSIP implementation plan and the implications for regional research networks, country-level organizations involved in these networks, and other national research and policy institutions.

The Internet has already changed the way most of us think about information storage and dissemination. Realizing the potential of these technological advances, the Food Security III Cooperative Agreement at MSU (MSU/FS III, 2004) joined forces with the UN Economic Commission for Africa's Sustainable Development Division (UNECA/SDD) and five regional African networks (including INSAH, SADAOC, and REPA in West Africa, ECAPAPA in East Africa, and FANRPAN in Southern Africa). The goal of the collaborative effort is to design and put into operation an Internet information portal responding to the needs of individuals and institutions working on food security and related development policy issues in Africa. The broad outlines of the design were developed at a meeting of potential participants hosted by UNECA in Addis Ababa in January 2003. More specific objectives of the FSIP are to assist African food security and food policy researchers working at the African country- and regional-level to:

- (1) Rapidly find important and high quality Internet sources of data and information to assist in their analytical work;

- (2) Make data and research results produced by African researchers available to a world-wide audience;
- (3) Improve capacity for quality research, policy analysis and policy outreach using the Internet as both a vehicle for training and a source of data and information;
- (4) Overcome language barriers that inhibit the exchange of scientific and policy analysis documents across Africa by providing an on-line informational translation feature for documents posted on or linked to the Portal.
- (5) Facilitate the building of learning communities of researchers/policy analysts through increased cross-country and cross-region interactions, and through the use of web-based tools to stimulate intellectual exchange and the strengthening of policy analysis as well as policy outreach skills.

2. Startup Progress

The first 30 months of FSIP development have been devoted to designing the basic operation of the portal, defining the role of participating institutions, developing a plan for transferring portal management from MSU/FS III to UNECA, and developing portal content (For additional background, see the downloadable PowerPoint (in English, French or Portuguese) on the [FSIP entry page](#)). Although the FSIP is still “under construction,” it is freely available online, is easily used, and already provides links to a tremendous amount of information. At present, there are three broad areas of FSIP content:

- Country-level pages providing easy access to full text information, documents and website links by topics that are specific to each African country;
- Topic-level pages providing links to websites, downloadable data and documents on 24 major topics of interest to agricultural scientists and food policy analysts;
- Professional skill building pages in English, French and Portuguese, providing links to tutorials and other capacity building materials designed to improve both digital information access and Internet search skills, as well as strengthen professional research, policy outreach, and professional practice and management skills.

UNECA’s role and willingness to eventually host the FSIP server and website is strategic. As part of its programs, ECA explores the interrelationships between four major areas of concern to sustainable development in Africa, that is: population, agriculture, environment, and science and technology management. It is believed that in order to address agriculture and food insecurity, African countries must explore the linkages in these four thrusts of sustainable development in order to improve Africa’s agricultural productive capacity, its ability to purchase/access food and utilize it adequately in order to achieve food and nutrition security. In this regard, ECA assists member States by: a) raising policy-makers’ awareness on the urgency to integrate food, population and environmental concerns (the nexus issues) in development planning; b) offering member States feasible solutions drawn from best practices within Africa and around the world; c) encouraging ECA member States to develop and take full advantage of their abilities to foster and utilize science, information and communication technologies for development; d) providing policy analysis support and disseminating services through workshops, training, seminars, networks or information exchange, and e) providing technical advisory services to enhance the understanding and management of the complex interactions between agriculture, population, environment and food security.

In addition to its work in the area of sustainable development, ECA has a program that is charged with assisting Africa's member states to harness information and communication technologies (ICTs) for development. Following the recognition that embracing information and communication technologies is vital to bridging the development gap between Africa and the rest of the world, the ECA Conference of Ministers adopted, resolutions 975 and 812 culminating in the endorsement of the African Information Society Initiative (AISI), an action framework to build Africa's information and communication infrastructure. ECA is involved in the implementation of AISI and other initiatives to build the capacity of African countries in order to harness ICTs for sustainable development. The basic aim is for Africa to be able to exchange development information utilizing new technologies and for Africa to contribute its information to the global networks. ECA plays a vital role as an information clearinghouse (a networker and disseminator) of information relevant to social and economic aspects of African development.

Advances in information and communication technologies both demand and facilitate this role. African social scientists more than ever require assistance in locating relevant information on African development from the flood of information to which they have access, as well as to make their work visible to the world. And ECA is involved in harnessing information and technology for development through: implementing AISI; enhancing and disseminating statistical databases; improving information access through enhanced library and documentation output; and strengthening geo-information systems for sustainable development. The initiative to set up the Food Security Information Portal for Africa, therefore falls within ECA's mandate of enhancing Africa's capacity to harness information and communication technologies to enhance food security and sustainable development.

3. Results

Results of the development phase of our joint efforts are freely available for use on the FSIP website. Figure 1 displays the FSIP "country-level page" for Mali, listing the broad range of food security and food policy "topic areas" covered on the left and the "professional skill building" categories available on the right; the center of this page is a general introduction to basic types of information available on each country and topic page, including web sites, research reports, policy briefs, and links to sites for building professional research and dialogue skills. Similar pages are available and operating on the FSIP for 54 Africa countries, displayed on the map of Africa on the FSIP home page.

Figure 2 displays in French the FSIP country and topic-specific page found by clicking on the "natural resources" button on the left side of the Mali page shown in Figure 1. Note that on the Mali natural resources page (and on each other topic page) the plan is take advantage of the "teachable moment" to create a mini-tutorial, including a list of "best or recommended" Internet sources of information on this specific topic, covering both general and Mali-specific sites. Figures 1 and 2 also illustrate how FSIP users have access to two complementary language translation features that offer: 1) the ability to navigate the Portal web pages in French or Portuguese, as well as the base English formulation (the top right of each page displays the language navigation buttons); and 2) easily accessible online "informational translation" options for each html web page or document linked to the Portal. These figures likewise highlight the consistent formatting and placement of the featured links, which are divided into three major categories: web sites, research papers, and policy briefs.

UN-ECA DISD & SDD in cooperation with African Food Security/Policy Networks & MSU Agricultural Economics

Home > Mali > Introduction English Français Portugais

Food Security and Food Policy Information Portal for Africa

Network Hubs : ASARECA/ECAPAPA CILSS-INSAH/AGROSDC CMA-WCA/REPA SADAOC SADC/FANRPAN UN-ECA/SDD

Choose A Country This is a working demonstration site. Many sections are under development and incomplete.

Mali Introduction

Choose a Topic

- ▶ Introduction
- ▶ Current News
- ▶ Early Warning
- ▶ Government
- Food/Agriculture
 - ▶ Production
 - ▶ Research
 - ▶ Biotechnology
 - ▶ Extension
 - ▶ Marketing
 - ▶ Trade
 - ▶ Finance
 - ▶ Agribusiness
- ▶ Rural Development
- ▶ Poverty Reduction
- ▶ Gender/WID
- ▶ Natural Resources
- ▶ Environment
- ▶ African Studies
- ▶ Donor Portals
- ▶ Population
- ▶ Health/Nutrition
- ▶ HIV/AIDS
- ▶ Education
- ▶ Maps & GIS
- ▶ ICT

Welcome to the Food Security and Food Policy Information Portal for Africa!

The objective of this directory is to assist country/region-specific African food security and food policy researchers to:

- Find important and high quality internet sources of data and information to assist in their country/topic analytical work;
- Offer to others in Africa (and elsewhere) important country/topic level work they are doing;
- Improve their professional skills for research and policy outreach. This includes online tutorials and downloadable training materials on conducting research quality and "deep" internet searching to find new data and information that is constantly and increasingly becoming available in digital format via the internet.

[Read more about this collaborative effort](#)

A few basic guidelines about directory organization and how to navigate to find what you want. To access information for another country/region, click "Home" in the top left hand corner or use the pull down window "Choose a Country" on the top left of all inside pages. The Directory covers all African countries, as well as 5 regions (East, Southern, West/Central, North and Pan-African). To access information related to one of the food security and food policy Support Networks, click on "Home" and select the Support Network you want. The internet resources available to you from the Directory are shown in the boxes on the left and right of the page, representing four categories of information:

I. Topics For A Specific Country/Region. The left hand box contains various food security/food policy topics of interest. Clicking on a topic will take you to its unique page presenting seven types of hot-linked resources:

- Web Sites: Country/Region-Specific;
- Web Sites: Topic-Specific;
- Research Papers: Country/Region-Specific;
- Research Papers: Topic-Specific;
- Policy Briefs & Papers: Country/Region-Specific;
- Policy Brief & Papers: Topic-Specific;
- Suggestions and hot links to sites for Building Your Own Professional Research and Policy Dialogue Skills (and to make this as helpful as possible, the suggestions are specific to individual topic areas). This category also has a facility for you to submit to the directory your suggestions for search strings and engines, and other effective internet research strategies you have developed for a specific topic area.

II. Search Now. This box (on the right) contains sites to help you do quick outside (www) and inside (Directory) searches.

III. Building Professional Skills. This box (on the right) contains topics related to building your own general research and management skills, as well as suggestion about important library and topical teaching/learning materials available over the internet. There are also listing here of important agricultural and general economics resources, as well as other African and World Wide resources available to assist in food security and food policy work.

IV. Suggestions For.... This box (on the right) provides a venue for you to submit your suggestions for additional web sites, research and policy papers and related internet sources of information. You will find instructions for submitting your paper/data to a Regional Editor for posting to a website that will allow your work to be made available (downloadable) to others via this directory. You can also provide feedback if a particular link in the Directory does not work, and other comments.

Search Now

- ▶ Quick Search the Web
- ▶ Quick Search this Site

Building Professional Skills

- ▶ Internet Search
- ▶ Library Info
- ▶ Distance Learning
- ▶ Economics/Social Sciences
- ▶ Food Security/Food Policy
- ▶ Statistical Analysis
- ▶ Software Help
- ▶ Language Translation
- ▶ Management Resources
- ▶ Policy Research
- ▶ Policy Briefs
- ▶ Presentations
- ▶ Posters
- ▶ Writing
- ▶ Journalism
- ▶ Proposals/Funds

Suggestions for...

- ▶ Web Sites
- ▶ Research Papers
- ▶ Policy Briefs
- ▶ Internet Search Techniques
- ▶ Reporting Non-Working Links

Figure 1. English language version of the FSIP country page for Mali

Each one of these three categories is further sub-divided into two groups: country-specific and topic-specific references. The button on each entry for "Translate" is the one stop access to the facility for obtaining instant "information translations" of materials posted on the internet in HTML format. The buttons for "informational translations" are clearly placed beside each featured link that can be translated. The topic listing, which now covers 24 areas of interest, appears on the left side of each page providing users with easy access to other topic areas. The country drop-down button at the top left of each page permits easy navigation from one country or region of Africa to another (or users can return to the home page and select additional countries from the clickable map of Africa).

UN-ECA DISD & SDD en collaboration avec les réseaux africains de sécurité/politiques alimentaires et le département d'Economie Agricole de MSU

Accueil > Mali > Ressources Naturelles

English Français Portugais

Portail d'Information pour la Sécurité Alimentaire et les Politiques Alimentaires pour l'Afrique

Centres du réseau : ASARECA/ECAPAPA CILSS-INSAH/AGROSDC CMA-WCA/REPA SADAOC SADC/FANRPAN UN-ECA/SDD

Mali

Mali
Ressources Naturelles

Ceci est un site de démonstration. Certaines sections sont en construction et incomplètes.

Choisissez un Thème	Liens présentées	Rechercher Maintenant
<ul style="list-style-type: none"> ▶ Introduction ▶ Actualité ▶ Alertes Précoces ▶ Gouvernement ▶ Agro-Alimentaire <ul style="list-style-type: none"> ▶ Production ▶ Recherche ▶ Biotechnologie ▶ Encadrement ▶ Commercialisation ▶ Commerce ▶ Finance ▶ Agro-Industrie ▶ Développement Rural ▶ Réduction de la Pauvreté ▶ FED ▶ Ressources Naturelles ▶ Environnement ▶ Etudes Africaines ▶ Portails des Donateurs ▶ Population ▶ Santé/Nutrition ▶ SIDA/HIV ▶ Education ▶ Cartes & SIG ▶ TIC 	<p>Sites Web: Spécifiques par Pays</p> <p>Forestry Information - FAO (Select Country) -TRADUIRE-</p> <p>Fisheries - FAO Country Profile Page (Specify Country) -TRADUIRE-</p> <p>Water and Food Security Profile - FAO -TRADUIRE-</p> <p>Land resource potential and constraints - TERRASTAT FAO (select topic & region) -TRADUIRE-</p> <p>Earth Trends (text version) - World Resource Institute (select topic and country). Topics include: Water Resources and Freshwater Ecosystems, Energy and Resources and Forest, Grasslands and Drylands. -TRADUIRE-</p> <p>[Voir tous les liens]</p> <p>Sites Web: Spécifiques par Thème</p> <p>Resource Africa -TRADUIRE-</p> <p>FRAME - Knowledge-sharing networks of environmental and natural resource professionals. -TRADUIRE-</p> <p>ELDIS Biodiversity Resource Guide -TRADUIRE-</p> <p>World Bank - Forestry, Water Management, Sustainable Agriculture, Fisheries & Aquaculture -TRADUIRE-</p> <p>[Voir tous les liens]</p> <p>Articles de Recherche: Spécifiques par Pays</p> <p>ETUDE: SUR LA PROBLEMATIQUE FONCIERE DANS LES PERIMETRES IRRIGUES AU MALI - El Hadj Oumar Tall, Mamoudou Traore, Yazon Gnoumou and Peter Bloch. Working Paper No. 50-F. University of Wisconsin, Land Tenure Center. 2002</p> <p>[Voir tous les liens]</p> <p>Articles de Recherche: Spécifiques par Thème</p> <p>Aucun lien de ce type n'est disponible pour le moment</p> <p>Synthèses et Articles de Politiques: Spécifiques par Pays</p> <p>Aucun lien de ce type n'est disponible pour le moment</p> <p>Synthèses et Articles de Politiques: Spécifiques par Thème</p> <p>Aucun lien de ce type n'est disponible pour le moment</p> <p>Développer vos propres Compétences de Recherche</p> <p>Une mini session de tutorat sera rédigée et insérée ici dans le but d'affiner les compétences de recherche sur Internet dans ce domaine d'étude particulier. Une fois que les compétences ont été perfectionnées, nous vous invitons à nous soumettre vos propres suggestions pour toutes règles de recherche efficace, tous mots clés distinctifs pour la recherche dans ce domaine d'étude et autre analyse linguistique pertinente pour des mots des textes. Une équipe d'éditeurs les révisera pour choisir les suggestions uniques et efficaces qui seront postées ici et mises à la disposition des autres utilisateurs. Si vous l'indiquez, nous inclurons votre nom et votre adresse email et considérerons que vous êtes disposé à communiquer avec d'autres au niveau des stratégies de recherche dans ce domaine d'étude.</p> <p>Resource Africa -TRADUIRE-</p> <p>FAO Agriculture 21 - Guide to Natural Resources and Environment -TRADUIRE-</p> <p>ELDIS Resource Guides -TRADUIRE-</p> <p>FAO WAICENT Subject Directory -TRADUIRE-</p> <p>IFPRI Research Themes -TRADUIRE-</p>	<p>Rechercher Maintenant</p> <ul style="list-style-type: none"> ▶ Recherche Rapide Sur le Web ▶ Recherche Rapide Sur le Site <p>Développer Vos Compétences Professionnelles</p> <ul style="list-style-type: none"> ▶ Recherche Web ▶ Infos des Bibliothèques ▶ Apprentissage à Distance ▶ Economie/Sciences Sociales ▶ Sécurité Alimentaire/Politiques Alimentaires ▶ Analyse Statistique ▶ Aide au Niveau des Logiciels ▶ Traduction des Langues ▶ Ressources de Gestion ▶ Recherches sur les Politiques ▶ Notes de Synthèse ▶ Présentations ▶ Affiches ▶ Ecriture ▶ Journalisme ▶ Propositions/Financements <p>Suggestions Pour...</p> <ul style="list-style-type: none"> ▶ Sites Web ▶ Articles de Recherche ▶ Synthèses de Politiques ▶ Techniques de Recherche sur Internet ▶ Signaler les Liens Défectueux

Figure 2. French language version of the Mali "natural resources" topic page"

Viewing any FSIP country- or topic-level page reveals the potential benefits of the portal to technical as well as food security and food policy analysts, as well as to policy makers and teachers. Among the most notable benefits are:

- Rapid access to country and topic-specific web sites and publications;
- Easy access to data sets such as World Bank social development indicators or national production, price, and climate series (through the “government” and “donor” links);
- Links to country-specific sources of information and current news;
- Facility in searching recent publications for specific food security topics, with or without a country focus;
- Instructions (on the “library information” link) for accessing published journal articles free of charge through many different digital libraries, from AGORA, and from other full-text online sources;
- Instantaneous “informational translating” of web pages and other HTML documents;
- Automated feedback/input options for submitting suggestions to FSIP editors.

FSIP is also designed to provide a very broad range of links to training and capacity building materials. Figure 3 illustrates the professional skill building page for food security analysis. Skill areas and resources covered include:

- -Internet search tools for “research quality internet searching”

- -Top digital libraries and on-line full document sources
- -Distance learning and teaching resources
- -Professional contacts for agricultural economists, and other social scientists
- -Food security and food policy key sources of information
- -Statistical analysis programs and tutorials
- -Software help to locate and use software
- -Language translation on-line resources
- -Management advice and resources
- -Policy research-insights and resources for effective research and policy linkages
- -Policy briefs- advice and resources for preparing effective policy outreach materials
- -Scientific presentation advice
- -Posters preparation and software guides
- -Writing skill improvements and standard practice guides
- -Journalism writing and investigation skills
- -Proposal writing advice and information sources on research and outreach funding

Links on this side of the Portal are provided to resources in English, French and Portuguese “original” language web sites, and to a variety of food security publications in these languages. Rather than translating English tutorials and other documents into other languages, FSIP is identifying and linking to information prepared directly by Anglophone, Francophone, and Lusophone libraries, universities and other providers. This contributes to more efficiency in making the skill building section of the portal more easily operational and makes the links more directly relevant to users in each language group.

The screenshot shows the 'Food Security and Food Policy Information Portal for Africa'. At the top, it identifies the organization as UN-ECA DISD & SDD in cooperation with African Food Security/Policy Networks & MSU Agricultural Economics. The main navigation bar includes 'Home > Food Security/Food Policy' and language options for English, Français, and Português. Below the navigation bar, there are 'Network Hubs' for ASARECA/ECAPAPA, CILSS-INSAH/AGROSDC, CMA-WCA/REPA, SADAOC, SADC/FANRPAN, and UN-ECA/SDD. A 'Choose A Country' dropdown menu is present. The main content area is titled 'Food Security/Food Policy' and is divided into three columns: 'Choose a Topic', 'Featured Links', and 'Search Now'. The 'Choose a Topic' column lists various subjects like Introduction, Current News, Early Warning, Government, Food/Agriculture, Production, Research, Biotechnology, Extension, Marketing, Trade, Finance, Agribusiness, Rural Development, Poverty Reduction, Gender/WID, Natural Resources, Environment, African Studies, Donor Portals, Population, Health/Nutrition, HIV/AIDS, Education, Maps & GIS, and ICT. The 'Featured Links' column provides links to various resources, categorized by language: English (e.g., Eldis, CTA, IFPRI, Development Gateway, MSU), French (e.g., Le Partenariat pour le réduction de la faim et de la pauvreté en Afrique, CTA, LACSA, L'Union Européenne, SECURITE ALIMENTAIRE, QUALITE, CERTIFICATION), and Portuguese (e.g., Prosiqa, Empresa Brasileira de Pesquisa Agropecuária, Conselho Europeu de Informação sobre a Alimentação, "Homepage" Do Movimento da Segurança Alimentar na América Latina e Caribe, ProSPER.Links). The 'Search Now' column includes 'Quick Search the Web', 'Quick Search this Site', 'Building Professional Skills' (with sub-links like Internet Search, Library Info, Distance Learning, etc.), and 'Suggestions for...' (with sub-links like Web Sites, Research Papers, etc.). A disclaimer on the right states: 'This is a working demonstration site. Many sections are under development and incomplete.'

Figure 3. Food security/food policy professional skill building coverage

4. Discussion of Challenges Addressed

It should be emphasized that the FSIP is only partially completed. There are areas requiring additional work, particularly the need for adding country and topic URL's as well as links to research publications by African analysts to increase the visibility of their work (some of which falls into the category of "gray" literature that is not yet available on the web) and increasing the non-English content of the skill building components of the portal. At the same time, it is useful to review some of the key challenges that prompted the launching of FSIP as an Internet resource to assist African researchers, policy analysts, and policy makers.

Successful food policy design and implementation requires good research skills and access to the growing body of theoretical and empirical literature on economic development and policy reform experiences throughout the world. African analysts have been particularly disadvantaged in this respect; many have been educated abroad where they had access to some of the world's best libraries and were in frequent contact with experts in the field capable of providing constructive review of their work. Once returning home, they are challenged to apply, maintain, and update their newly acquired skills—often without the access to libraries and peer review to which they had become accustomed. Communication with colleagues in other countries (even neighboring countries) is often slow and costly. For Africans trained at home, the situation is even more challenging because it is difficult to achieve broad exposure to either historical or state of the art literature in their field.

In sum, it is a significant challenge for African universities to train future generations of researchers and analysts and also a challenge for those already trained to stay abreast of developments in their field and to obtain rapid, meaningful peer review of their work. This makes it difficult for researchers and analysts to provide policy makers with both high-quality and timely insights into the policy dilemmas being addressed on a day-to-day basis. Consequently, the work of African analysts is too often not taken into account to the extent that it should be when international institutions, bi-lateral donors, and national governments design and implement food security programs and food policy reforms.

The internet provides a means of addressing these challenges, but the rapid growth of new web sites and documents posted on the web creates information management demands that can be overwhelming for an individual researcher. FSIP recognized that leaving each individual researcher and analyst on their own to navigate the World Wide Web would miss an opportunity to rapidly improve food policy research and analysis on a much broader scale. Consequently the idea of the FSIP, focused on food security and food policy topics, that would provide (1) key readings and tutorials on research methods, policy outreach, and internet search skills, (2) easy-to-use links (indexed by topic and country) to subject matter web sites, journals, and relevant data sets, and (3) a place for African researchers to offer digital access to their own working papers and other gray literature.

4.1 Potential Payoff to FSIP

The potential payoffs to this effort are significant and highly dynamic. The anticipated end result is taking much better advantage of cutting-edge information and communication technology to promote improvements in the quality of technical as well as food security and food policy research conducted by Africans. Importantly, there can be also better integration of African research results into the policy design process world-wide. Analysts will be able

to more easily and comprehensively take into account a broader range of comparative perspectives within and across countries than has been possible in the past. The Portal will contribute to more rapid and complete responses to requests for information and analysis from national and regional policy makers, international financial institutions and bi-lateral donors while increasing the speed and effectiveness with which research results are applied to the pressing problems at the national and regional level.

Use of the FSIP has strong potential for reducing research costs (both internet access costs and the time a researcher needs to address a particular problem) and increasing efficiency. The Portal is being designed to encourage African researchers to solicit greater review of their work from colleagues at home and throughout their region and the world. This is also designed to encourage local researchers to be more willing to offer comments/suggestions to others who post their work on the web. Structuring FSIP as a system for facilitating the writing and posting of working papers and other draft documents on the Internet will facilitate peer review and lighten the work load for publication review committees. The FSIP will stimulate greater synergy between regional and national research organizations and among the NARS by promoting more scientific exchange among researchers and between researchers and potential beneficiaries of agricultural and food policy research at lower costs than in the past. The Portal will be particularly useful to African institutions of higher education as it will provide both professors and students easier and more visible access to an extensive electronic library. Better access to gray literature and to policy outreach materials will complement the free access to over 700 journals offered through the FAO's new AGORA facility. The FSIP will also facilitate access to and use of a number of tutorials for upgrading and implementing research quality Internet search skills.

The language navigation features of FSIP web pages and tutorials, in combination with the "informational translation" options for HTML links, contribute valuable online and full text training literature and tutorials that make the Portal an easily used research tool for African technical school and University faculty and students whose working language is either English, French, or Portuguese.

4.2 FSIP Implementation Plans and Development Alternatives

The purpose of this section is to discuss briefly some of the key plans for more fully operationalizing the Portal in collaboration with network and country-level partners and the challenges we all face in expanding the FSIP to its full potential.

The first 30 months of development efforts by UNECA and MSU have focused on using existing startup financial resources to fund "proof of concept" technical design and implementation issues, and consultations about desired features and other needs with key African food security network coordinators (FANRPAN, ECAPAPA, INSAH/AGROSOC, Foundation SADAOC, and REPA). Progress has been substantial and FSIP is online and working. Users world-wide are freely allowed to take advantage of the development progress, although much remains to be done to have all topics and skill building areas reach a minimum starting point.

This project is taking a very pragmatic approach to confront challenges. While progress has been rapid in getting improved online Internet access in many African countries, there is still much to be done to broaden this access, to reduce the cost, and perhaps most importantly now, to improve the development content of what is available on the Internet. Some leaders

argued that until digital access is improved, it is not very productive to work on strengthening the content side of the Internet. But we believe that simultaneous progress is needed (and is highly productive) on both the supply and demand side of developing the Internet as a strategic information and communication tool. With more practical understanding of what can be done, and more demand from local users because they better understand this potential, African policy makers and donors can more easily understand and confront Internet infrastructure investment requirements. Thus there are important reasons to seek progress in designing and demonstrating the practical ways that the Internet can enhance applied food security and food policy research, outreach and teaching. The operating assumption is that greater investments in the infrastructure to allow more use of the Internet will be forthcoming, and will also be stimulated by the availability of more relevant and user friendly content.

UNECA and MSU are also following a pragmatic startup and incremental development strategy. Each organization has modest start-up funds to work on design efforts but does not have sufficient longer-term funding to move this to the full implementation stage. This project can only succeed if there are training and promotion efforts at the country- and regional-level through out Africa. This makes longer-term funding essential for the work on this project (in addition to work on other projects) by African Regional Network partners. UNECA/MSU and African Regional Network researchers also believe it is important to keep the primary focus on using ICT tools to find innovative and low cost ways of building local capacity rather than simply encouraging an increase in Internet use and browsing. This also makes it important to keep focused on the most important longer-run objective, that is to enhance the use of ICT tools to strengthen African country-level capacity to conduct effective applied food security and food policy research, outreach and teaching.

Getting support for the African Regional Networks is the first level of effort needed to reach country-level users. At the country-level in Africa there are many on-going efforts (like selected countries with their own Development Gateway projects and NGO efforts such as that of the International Institute for Communication and Development's work in Mali, Ghana, and elsewhere). It is very important for FSIP to not duplicate these important efforts, but to complement and enhance them. At the same time, the various African Regional Food Security Networks, ECAPAPA or Foundation SADAOC just to mention two, have an explicit mandate to strengthen capacity and to support country-level efforts in their geographical areas of concentration. But these African Networks do not currently have resources to extend a set of ICT enhancements and content development to member countries. To extend FSIP so that it can achieve wide-spread country-level impact, the Regional Networks are ideal partners (in fact this cannot be done without such partners), but they clearly will need additional financial assistance to take on this task.

FSIP has identified a number of alternatives for including (and complementing rather than competing with) other public and private sector groups in each African Country. The basic approach is to focus on both information supply and demand side factors in working with country-level partners to supplement the efforts of the Regional Networks are as follows:

- **Information Supply Side:** The plan for getting more local content in the key food security topic areas is to first search the WWW carefully to find out what is already being done and perhaps already on web sites that only a few know about, and make sure this information is posted to FSIP in the relevant country- and topic-level pages. This can also encourage existing organizations to get their training and subject matter materials

into digital format and somehow onto a web page (perhaps to be placed on the portal server for downloading if no other hosting options are available). There are increasingly training materials already on the professional skill building side of FSIP that can help local organizations do more to get their materials ready and onto the WWW.

- **Information Demand Side:** Encourage and assist country-level and donor policy advisors to use the FSIP to quickly access sources of local as well as African and international information in the major topic areas of interest to them. We will also poll or survey these local advisors as to what they need the most that the internet/FSIP might help with. In every country there are most likely already developed lists of key policy makers and their "advisors" that could be targeted in short-course training on the use of the Internet and the FSIP, as well as on searching more effectively the Internet for information in their respective areas of interest.
- **Information Supply Side:** It will be important to encourage local projects, and applied researchers and outreach agents, in each country and topic area to try to be more responsive to meeting the needs of local policy advisors and policy makers. Demonstrating that there are groups of policy advisors who are potentially interested, and perhaps sharing what was learned in surveying these users about their information needs, might help focus the efforts of local information providers. This is a process of encouraging and assisting local information providers to more effectively target local users with relevant knowledge about local conditions, problems and solutions.
- **Information Demand Side:** Encourage local projects and organizations in each country- and topic-area to develop good "topic specific internet searching mini-tutorials" for their topic areas, and then make sure these "mini-tutorials" are written up and distributed in different ways to local users. This will be especially useful for local internet cafes and other private businesses selling internet access time to users. It is expected that local internet cafes may have a strong demand for such training materials because they would help show internet users where and how to be effective in finding material, but this would also help stimulate the demand for using internet time, which generates more sales for the internet cafes.

Getting African University involvement in this project is very important, as is assisting them to gain better Internet and training information access, and encouraging them to become strategic sources of documents to enhance African local content on the Internet. This is especially important for efforts like the African Capacity Building Foundation (ACBF), the Partnership for Higher Education in Africa, the African Economics Research Consortium, the Organization for Social Science Research in Eastern and Southern Africa (OSSREA), the Council for the Development of Social Science Research in Africa (CODESRIA) and the newly emerging regional Masters training programs in environmental economics, agricultural economics and policy in Eastern and Southern Africa.

Plans for increasing the Portal URL's and African gray literature postings include requesting members of the network and users to submit country- and topic-level URL's and gray literature URL's (as well as suggestions for posting some materials not yet on the web to local servers (or perhaps to the FSIP server). Dealing with gray literature "quality" standards involves a basic issue of how to determine which African country- and topic-level gray literature publications will be posted and made downloadable from FSIP. The suggested approach is to make this feature one of the incentives for African authors to write and submit

different forms of “working papers” and to have their organizations promote publication series of “working papers and extension policy bulletins as one technique to get higher productivity from research and extension activities, and to provide stakeholders opportunities to provide more timely feedback, as well as access to emerging findings. As “working papers” are upgraded to more final forms of publication, their ranking on the FSIP can be adjusted.

In summary, this paper has discussed a collaborative internet-based tool being developed to improve African food security and food policy analysis. The Food Security and Food Policy Information Portal for Africa (FSIP) gives researchers and policy makers a one-stop and multi-language location for: (a) easily accessing key data and analyses on food security and food policy for every country in Africa; (b) sharing their own work with colleagues across the world; (c) finding training materials on more effective use of the ICT, and on improved applied research and policy analysis methods; and (d) spotlighting experiences on how to improve the effectiveness of policy extension efforts.

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