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Building a Food Security and Policy Information Portal for Africa (FSIP)

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Abstract: Getting the food and agriculture system moving faster is crucial for structural transformation and poverty reduction in Africa. This requires investing in basic productive and market infrastructure, and expanding appropriate research, knowledge, and technology for increased productivity at all stages of the agricultural commodity chains. The advent of the World Wide Web and 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, which are crucial inputs for agricultural development. Yet, much remains to be done to harness these information communication technology tools more effectively to help achieve African development goals in agricultural sciences, food security, and policy reform ([UNECA/DISD](#)). Our paper identifies opportunities and constraints facing a program being undertaken by the UNECA, several regional African policy research networks, and MSU to: (1) improve the skills of African technical and social scientists to use more effectively the wealth of scientific knowledge and experience currently available on the Internet to carry out applied policy research, outreach and training; and (2) make the work of Africans more visible to others, thereby fostering south-north and south-south learning. The paper discusses a collaborative internet-based tool being developed to achieve these objectives. The [Food Security and Food Policy Information Portal for Africa](#) 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 effective

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 and this holds the key to increased food security and overall income growth in Africa (Dioné, 2004). Crucial knowledge facilitating inputs needed to support agricultural development must be thought about differently because the advent of 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 information communication technologies more effectively to help achieve African development goals in agricultural sciences, food security, and policy reform (UNECA/DISD, 2004).

Objective and Overview of this Paper

This paper describes and discusses a project 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 that aims to increase the use of scientific knowledge in 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). 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 the use of web-based tools to stimulate intellectual exchange and strengthening policy analysis/outreach skills.

Materials and Methods

The first 24 months of FSIP development has been devoted to designing 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 online and accessible, 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 22 (agricultural biotechnology and gender in development are being added and will bring the topic coverage to 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 and management skills.

UNECA's role and willingness to eventually host the portal website in this activity 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 facilitate and necessitate this role. African social scientists more than ever require assistance in locating relevant information of African development from the flood of information to which they have access as well as make their work visible to the world. In this regard, ECA is involved in harnessing information 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.

Results and Discussion

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 the FSIP country and topic-specific page found by clicking on the "health and nutrition" button on the left side of the Mali page shown in Figure 1. Note that on the Mali health and nutrition page (and on each other topic page) there is a mini-tutorial, including a list of "best or recommended" Internet sources of information on this 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 documents listed in 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. 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 doing 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 23 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).

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

Figure 2. English language version of the Mali "health & nutrition" 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. Links on this side of the Portal are provided for 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 has identified and linked 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 operational and makes the links more directly relevant to users in each language group. It should also 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.

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

Discussion of challenges raised by the era of digital resources and addressed by FSIP

It is useful to step back now to review some of the key challenges that prompted us to launch 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 real challenge for African universities to train future generations of researchers and analysts and a real 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.

Discussion of 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 and 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 500 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.

Discussion of FSIP implementation plan/challenges and development alternatives

The first 24 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 and users are 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. The purpose of this section is to present and 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.

Making a comment on the pragmatic approach of this work, 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 would and have argued that until access is improved, it is not very productive to work on improving 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. So we believe 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, assuming that greater investments in the infrastructure to allow more use of the Internet will be forthcoming.

UNECA and MSU FSIP 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 throughout 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 counties. 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 partners like them), 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. Both supply and demand side ideas for also using other country-level partners to supplement the efforts of the Regional Networks are as follows:

- **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 nothing else is 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.
- **Demand Side:** Our plan is to encourage/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 the top 10-20 policy makers and their "advisors" that could become targets of 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.

- 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 form of helping local information providers to more effectively target local users with knowledge they are creating about local conditions, problems and solutions.
- Demand Side: Encourage/facilitate selected local projects and organizations in each country- and topic-area to write good "topic specific internet searching mini-tutorials" for their topic areas, and then making 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.

Our plan for increasing the Portal URL's and African gray literature includes 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 the FSIP) 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 proposal is to make this feature one of the incentives for African authors to write and submit "working papers" and to have their organizations promote "working paper publication and extension bulletin series" as one technique to get more research and extension productivity and to provide stakeholder more timely access of emerging findings. As working papers are upgraded to other levels 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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