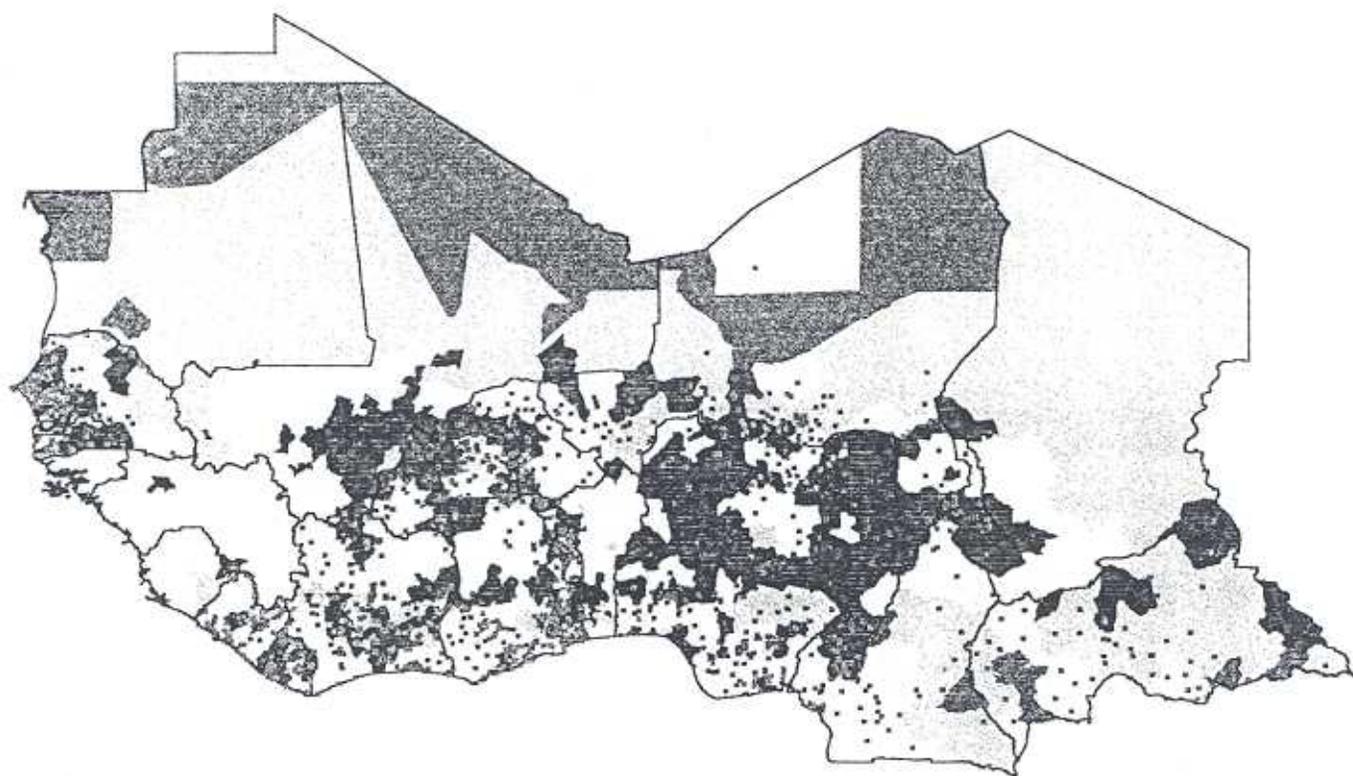


USAID/REDSO/WCA  
Geographic Information for Assistance Programming  
Workshop Proceedings  
May 20-24, 1996  
Deux Plateau, Abidjan, Cote d'Ivoire



## Table of Contents

	Page
1.0 INTRODUCTION	
1.1 Objectives.....	1
1.2 Participants at the Workshop.....	1
2.0 BACKGROUND	
2.1 Results Based Programming.....	3
2.2 The Impact Statement Strategy of Administrative Reform.....	4
2.3 Data Pooling and Data Set Merging.....	5
2.4 REDSO Regional Support for Spatial Data Analysis.....	5
2.5 The West Africa Spatial Analysis Prototype - WASAP.....	6
3.0 THE CONFERENCE	
3.1 Monday, May 20, 1996.....	9
3.2 Tuesday, May 21, 1996	
3.2.1 - USAID Program Impact Evaluation and Targeting.....	9
3.2.2 - Liberia - Monitoring refugees in Liberia.....	9
3.2.3 - Mali, Targeting of NGO and SO Activities.....	10
3.2.4 - Ghana, SO Activities with Emphasis on Health.....	11
3.2.5 - Niger, Disaster Assistance and Governance Issues.....	11
3.2.6 - Democracy and Governance in Cote d'Ivoire.....	11
3.3 Wednesday, May 22, 1996	
3.3.1 - Applications for Relief and Disaster Assistance.....	11
3.4 Thursday, May 23, 1996	
3.4.1 - Applications for Analysis of Economic Growth.....	13
3.4.2 - West African Rice Development Association.....	14
3.4.3 - CILSS/INSAH.....	14
3.4.4 - Data Formats and Data Sharing.....	15
3.5 Friday, May 24, 1996	
3.5.1 - Applications in Social Sector - Health and Education.....	15
3.6 Training.....	16
4.0 RECOMMENDATIONS AND CONCLUSIONS.....	18
APPENDICES	
Appendix A Lists of Participants.....	21
Appendix B Daily Schedules.....	24
Appendix C Lutheran World Services Briefing.....	28
Appendix D Regional Needs and Issues.....	29

## 1.0 INTRODUCTION

### 1.1 Objectives

Based on feedback obtained from participants in the March 1995 GIS training workshop at REDSO/WCA in Abidjan, three objectives were established for the 1996 workshop:

- 1) increase awareness of GIS applications in the WCA region,
- 2) training in Arcview I and Arcview II GIS software,
- 3) strengthen workplans and collaboration across projects and countries where GIS is being used.

These objectives were achieved through:

- 1) presentation of accomplishments and plans for GIS applications from USAID missions, USAID regional projects, NGOs, and governmental organizations.
- 2) Review and hands-on use of regional demographic and health databases compiled for REDSO/WCA by BUCEN/MACRO/WRI and
- 3) classroom training in software and individual work with participants to develop their applications.

The mornings of May 21-24 were devoted to presentations of applications of GIS for program planning in USAID country programs and USAID-funded regional activities. Afternoons were spent on GIS training in ARCVIEW I and ARCVIEW II software as well as how to use the World Wide Web. It was emphasized throughout the training that the spatial databases were easily imported and exported across software packages with different formats. WRI will deliver the final databases in both ARCVIEW and ATLAS formats. The data will also be available through the US Geological Service www site.

### 1.2 Participants at the Workshop

Participation was broad and included representatives of four USAID country programs (Liberia, Mali, Niger and Ghana) and a number of regional programs and/or organizations working in the areas of population (CERPOD/Institut du Sahel), agriculture (AGRHYMET, WARDA), food security and desertification (FEWS, PRISAS/Institut du Sahel). Representatives were also present from NGOs and

contractors working both regionally and locally in adult literacy and family planning. National government institutions in Mali, Ghana, and Cote d'Ivoire attended. The participants were from various backgrounds and levels of GIS expertise. A complete list of participants is found in the Appendix A.

This workshop was organized by Glenn Rogers, Regional Program Economist and Mario Lopez-Gomez, Data Management Officer of REDSO/WCA.

## 2.0 BACKGROUND

### 2.1 RESULTS BASED PROGRAMMING

The U.S. Congress has refined foreign assistance objectives roughly every ten years since WW II, with major revisions in 1948, 1961, 1973, and 1987. In addition to refining the objectives of foreign assistance, these Acts represent an evolving Congressional strategy to improve the cost effectiveness of foreign assistance. Reform strategies have evolved from administrative standards in 1961, to earmarking expenditure targets in 1973, and a "program impact statement strategy of reform" under the Development Fund for Africa (DFA) since 1987. Under the DFA, Congress ordered USAID to allocate DFA funds on the basis of two criteria: countries' needs for assistance and their commitment to alleviating poverty. USAID agreed to report more rigorously on the effectiveness of assistance in improving the welfare of specific population groups within specific countries in exchange for more flexible programming modalities that facilitate cost effective approaches.

Passage of the United States Government Performance and Results Act (GPRA) in 1993 has brought a tighter focus on the need to understand the impact of organizational behavior as well as the value of monitoring indicators of progress towards attainment of goals. The goals of the GPRA are ambitious, and include:

- 1) improved planning and management of Federal programs,
- 2) increased accountability of Federal agencies,
- 3) assessment of the results of programs,
- 4) better information for Congressional and agency decision making,  
and
- 5) increased public confidence in the Federal government.

Specifically for USAID, the National Performance Review in 1993 made several related recommendations including that USAID

- 1) redefine and focus the USAID mission and priorities,
- 2) regionalize missions and staff services overseas and close nonessential missions,
- 3) eliminate unduly burdensome reporting requirements and reduce legislative earmarks to provide greater operating flexibility, and
- 4) reengineer management of USAID projects and programs by using pilot programs and new approaches that emphasize flexibility, innovation, customer service, and program results.

In response USAID volunteered to be a "re-engineering laboratory" at an Agency

level.

As part of its overall reengineering efforts, USAID aspires to become a "learning agency". This means that, at all organizational levels, the Agency endeavors not only to manage for results, but also to develop its capability to measure and judge these results in collaboration with customers and partners. With limited human and financial resources this represents a challenging option which calls for innovative approaches to the collection, management, analysis, sharing, and dissemination of development-related information.

## 2.2 THE IMPACT STATEMENT STRATEGY OF ADMINISTRATIVE REFORM

The impact statement strategy of reform for USAID formally started with the DFA and is continuing under the GPRA and reengineering initiatives of the Agency. As described by Serge Taylor [Taylor, Serge. Making Bureaucracies Think: The Environmental Impact Statement Strategy of Administrative Reform. Stanford: Stanford University; 1984.] there are two critical elements of an impact statement strategy of administrative reform for a public organization such as USAID.

The first element is a formal external requirement for more rigorous impact evaluation and reporting based on an external demand for a knowledge base and analysis of results. The DFA and GPRA represent this external demand for reporting results. This has increased the need for USAID to formally set new goals, reorganize internally, allocate more internal resources to analyze results, and begin to change its output mix. Beginning in 1996, an annual "Results Review" procedure requires each operating unit of USAID to report results that can be aggregated up for reporting at the Agency level in addition to being used for decentralized management decisions.

The second critical element is that the external demand for analysis should lead to an analytical competition between analysts inside and outside USAID. External customers and partners, including universities, non-profit development organizations, and beneficiaries, are encouraged to judge and improve the analytical quality that undergirds the resource programming process. This analytical competition is a foundation for more transparent decisionmaking processes that draw on additional information from customers and development partners. USAID's "New Partnership Initiative" provides a framework that encourages this second critical reform element. This analytical competition and increased use of input from customers and partners that is promoted by an impact statement approach to reform is expected to enhance the ability of USAID to adapt to complex and changing problems.

### 2.3 DATA POOLING AND DATA SET MERGING

In order for governments, non-governmental organizations, and international donors to effectively evaluate and prioritize competing needs and program impacts, multi-sectoral data encompassing health, demographic, economic, climate, and environmental variables are required. In response to this need to make more informed decisions, data collection efforts in numerous sectors have increased dramatically in the last ten years throughout West Africa. Hundreds of millions of dollars worth of data have now become available. These data are typically analyzed solely by sector despite the sentiments that data integration across sectors would allow more realistic assessments of relative needs and the potential for development program interventions.

Data set merging has largely not occurred due to the technical and logistic problems of combining data from different surveys or collection methodologies. However, many analysts have identified Geographic Information Systems (GIS) as the best means of bringing together and analyzing data sets collected from diverse sectors using different samples or methodologies. GIS was developed as a method to integrate and analyze different data types into a single map in order to summarize geographic, socio-economic, and various other types of data. Data presentation using maps allows an intuitive means of understanding how different sectors interact and thus facilitates decision-making. The major shortcoming with GIS systems is the substantial effort initially required for set-up. As a result, few multi-country GIS systems or datasets exist outside the agricultural and environment sectors in Africa. However, use of spatial data in geographic information systems (GIS) is increasingly recognized as an effective tool for targeting development interventions and tracking the results of these interventions.

Implementation of USAID re-engineered programming modalities will require faster and more flexible analysis, monitoring, and evaluation systems on a regional level in West Africa. A large number of USAID staff and development partners have already started using GIS and related geographic data for assessments, targeting, and impact evaluation for local project areas. However, the potential cost-savings from geographically pooling existing data across sectors and locations to meet USAID re-engineering needs has led REDSO/WCA to support the creation of a West Africa regional spatial database. Use of spatial data as a tool to increase cost effectiveness of development programs was the focus of the May 1996 Abidjan workshop sponsored by REDSO/WCA described in this report.

### 2.4 REDSO REGIONAL SUPPORT FOR SPATIAL DATA ANALYSIS

REDSO/WCA provides support for the design and implementation of USAID bilateral and regional development projects whose impacts depend on the geography of human and natural resources. Through bi-lateral mission activities and through centrally-funded projects, USAID has played a leading role in regional data collection efforts that support numerous national and foreign donor program activities. However, as generally admitted, these data collection efforts are not paralleled with comparable analytical efforts. Recent efforts supported by REDSO/WCA are helping to shift the focus from the collection of new data to the analysis of existing information. This is necessary due to limited resources to collect new data and the need to improve understanding of the development environment.

A spatial data set consists of a collection of measurements or observations on one or more attributes of specified locations defined by points, lines, or polygons. The potential units of analysis include geographic areas as small as 50 square kilometers representing the resource base of local communities and service areas for health, education, and retail service centers. REDSO's support for spatial data analysis capability in support of USAID programs in the WCA region is helping make better use of such spatial information, shifting the focus from the collection of new data to the analysis of existing information, and improving overall program planning and management.

Since 1992 REDSO/WCA has supported the creation of a multi-country computerized map database for West and Central Africa that would be publicly available for comparative analyses across local socio-economic geographic areas in West Africa. REDSO/WCA has initiated and encouraged the processing of existing computer maps from a variety of sources. This has primarily included the ADS (African Data Sampler) initiative of the World Resources Institute drawing on military maps, the WALTPS (West African Long Term Perspective Study) computer maps prepared under a Club du Sahel initiative, and WASAP (West Africa Spatial Analysis Prototype) work initiated by REDSO. Each of these initiatives are described in separate documentation that is available from REDSO/WCA or WRI.

## 2.5 THE WEST AFRICA SPATIAL ANALYSIS PROTOTYPE - WASAP

Beginning in 1995, REDSO/WCA commissioned the development of the West Africa Spatial Analysis Prototype (WASAP) as a joint effort among the U.S. Bureau of the Census (BUCEN), the Demographic and Health Research Division of Macro International (the group that implements the Demographic and Health Surveys), and the World Resources Institute. WASAP was designed to

- 2) document these issues, and
- 3) develop and test a database of widely collected socio-economic and bio-physical information for West and Central African countries.

The outputs of WASAP are oriented to applied regional analysis and draw on earlier initiatives to merge secondary data. The WASAP outputs are intended to increase the cost effectiveness of development programs in the WCA region through facilitating improved:

- 1) measuring and reporting of program impacts to better manage for results,
- 2) geographic targeting to identify beneficiaries that can best make use of development assistance,
- 3) use of indirect as well as direct input from development program customers and partners in program design and adjustment.

Indirect input is obtained through use of pre-existing survey data and other background information already collected on the communities where beneficiaries or potential beneficiaries live. Direct input is obtained from participation and direct feedback that can be summarized in the WASAP framework.

BUCEN has mapped the location of over 2,500 clusters of households that have been surveyed at a cost of approximately \$15 million in 14 countries of West Africa. This spatial dataset and documentation has been delivered to GIS User organizations such as AGRHYMET and WARDA for use in their programs and USGS has been provided a copy to be made available on their WWW site.

MACRO has created household cluster level datasets and examined statistical issues related to aggregating the cluster level data. The objective of the MACRO support is to provide geographically referenced data, such as the DHS (Demographic and Health Surveys), in a regional dataset for pooled analysis across communities in adjacent countries.

The World Resources Institute has developed prototype sectoral applications for West Africa that use this newly available regional map dataset. Three case studies have been completed:

- 1) food for peace and relief assistance applications for Liberia,
- 2) economic growth applications for rural and urban market area analysis, and
- 3) analysis of literacy rates and children's school participation as a function of community and household characteristics in six countries in West Africa.

in West Africa.

These case studies were the first time that environmental, agricultural, health, and infrastructure datasets were merged for this type of analysis at the community level across multiple countries in West Africa. These prototype sectoral applications and regional databases were first presented to a cross-section of USAID's customers and partners in Abidjan during the May 22-26, 1996 workshop organized by REDSO/WCA.

In addition to compiling existing data into merged datasets and technically guiding prototype analyses, REDSO/WCA is contributing to regional training in the analysis of existing spatial data rather than the collection of new data. Several training sessions were provided by REDSO/WCA to CILSS institutions (CERPOD and AGRHYMET) and several seminar presentations have been made for USAID missions in the WCA region as well as senior technical staff in USAID/W (CDIE and Global Bureau Office of Population). In March 1995 the first REDSO/WCA GIS training workshop was held in Abidjan for USAID Mission staff in conjunction with the AFRICAGIS conference held in Abidjan. The May 1996 workshop described below is the most recent training support provided by REDSO/WCA to USAID missions and regional organizations using spatial data in development assistance programming.

### 3.1 Monday, 20-May-96

The first day was reserved for pre-conference set-up of hardware and software for the GIS training courses, as well as preliminary meetings between the participants as they arrived. The daily schedules are found in Appendix B.

### 3.2 Tuesday, 21-May-96

#### 3.2.1 USAID PROGRAM IMPACT EVALUATION AND TARGETING.

The Assistant Director of USAID/REDSO, Kim Finan, delivered the opening remarks. She stressed the need for more regional perspective in USAID strategies, especially in terms of justifying programs to the US Congress. She added that we need to 'de-personalize' the country perspectives and present a case for WCA as a region.

Glenn Rogers, the workshop organizer and facilitator, presented three over-riding themes for the week as "Keys to Cost Effective Development Programs" to help participants structure their presentations. The three themes were:

- 1) How to measure and report impacts and program evaluations.
- 2) How to improve geographic targeting of programs and interventions.
- 3) How to make more efficient use of available information from customers and partners, including
  - use of pre-existing surveys and regional data bases, and
  - direct participation and feedback from participating institutions.

The rest of the morning was dedicated to presentations by USAID missions illustrating their accomplishments and constraints relative to these three sub-themes. Mission staff provided overviews of their strategic objectives (SO) and related monitoring, evaluation, and targeting activities. These initial sessions provided a chance for each USAID mission to make a short presentation on their initiatives and identify common areas of focus for the remainder of the week. Several participants presented their missions' results frameworks as a background for discussions on the use of GIS for annual "results reviews". The discussions were led by Glenn Rogers of REDSO/WCA.

The interventions presented included:

A USAID/Monrovia staff person presented the program to assist refugees and Lutheran World Service (LWS) discussed their program to assist Liberians to resume normal activities in northeast Liberia. In the afternoon WRI presented the Liberia case study they have completed under WASAP. See Attachment C for the LWS Briefing paper.

### 3.2.3 Mali - Targeting of NGO and SO activities

GIS is being used to map sites of informal credit and water pump projects being supported by different donors in order to improve coordination of assistance activities. GIS is also being used by the Ministry of Health and the Ministry of Education to map existing schools and health centers together with locations of the population in order to identify sites where there is the greatest need for new schools and health centers. For example, sixty percent of the Malian population has "access" to a health clinic and in order to justify a new health clinic there must be a population of 5,000 within a radius of 15 Km.

Staff at the Ministry of Education were trained in GIS and developed a series of maps showing locations of primary schools and communities which, according to ministry selection criteria, are eligible for placement of a primary school. Villages without a school within five kilometers, but having a population of at least 500 inhabitants are eligible for new public primary school construction. This information was presented on maps to decision makers in order to better set priorities for locating new schools. The maps have been an effective tool for the Ministry to leverage resources needed to build more schools and better use existing resources. The maps also made the process for planning the site of a new school more transparent and helped to build consensus for the final decision.

The Ministry of Health is establishing procedures for the computerization, monitoring, and evaluation of health activities. The Health Management Information System will encompass all aspects of data collection, analysis, and reporting on a national level for six sub-systems:

- 1) Health service statistics
  - a. Health service centers
  - b. Epidemiological surveillance
  - c. Hygiene and sanitation
  - d. Pharmaceutical management
- 2) Equipment/construction/infrastructure management
- 3) Administration and Finance

- c. Administrative issues
- 4) Hospital Information System
- 5) Social Activities
- 6) Research - Medical and Public Health related

GIS will be used in the development of this health information system. Software development for each sub-system will require that each sub-system includes latitude and longitude fields in their respective databases. On this foundation all the health service centers will be geo-referenced and each of the databases for the six sub-systems will use latitude and longitude to cross-reference information in all the databases.

In February 1996 a Mali GIS User's Group was set up. USAID/Ghana was impressed with the progress made to date by this users' group and thought this would be useful in Ghana.

#### 3.2.4 Ghana - SO activities with emphasis on health

USAID staff presented the Ghana Country Strategy and an update on efforts to geo-reference the clusters of the 1993 Demographic and Health Survey and family planning service delivery points.

#### 3.2.5 Niger - Disaster Assistance and Governance Issues

USAID/Niger is currently implementing a phase down plan. However, some on-going work in examining community vulnerability and the locations of illegal payments in road transport may use GIS mapping.

#### 3.2.6 Democracy and Governance projects in Côte Ivoire

Moussa Okanla and Rene Lemarchand of REDSO/WCA discussed applications and geographic units that would be relevant for analysis of governance issues.

### 3.3 Wednesday, 22-May-96

#### 3.3.1 APPLICATIONS FOR RELIEF AND DISASTER ASSISTANCE

Wednesday was dedicated to disaster and relief assistance, early warning, and vulnerability assessment (VA). FEWS staff presented the basic goals and objectives of the FEWS project, as well as an overview of the VA (vulnerability assessment)

structure the VA process in a way that will allow the inclusion of new data as it becomes available.

The basic VA approach used in the Sahel is structured around the concept of baseline and current vulnerability indicators. The baseline or long term indicators (meaning prior to the last three years) are further subdivided into factors which affect the resource base (length and variability of the agricultural season, access to infrastructure and health facilities, etc.) and the income structure (per capita value for cereal production, livestock, cash crops, and other income). The current or short term vulnerability (meaning within the past three years) is more concerned with factors which capture the quality of recent growing seasons, general functioning of the cereal market, civil insecurity, and other recent events.

Many of the participants questions which resulted from the FEWS presentation expressed concern about the apparent focus on 'bio-physical' indicators to the exclusion of socio-economic indicators. FEWS staff explained they are very interested in integrating the DHS data and other socio-economic data into analysis procedures, but previously these data have not been readily available for all the FEWS countries in the Sahel. With the recent developments in GIS and the new geo-referenced WASAP dataset compiled by REDSO/WCA, this will now be possible.

Many of the vulnerability rankings used by FEWS could be verified more objectively and improved by including DHS and other nutritional data in the analysis. REDSO/WCA has already initiated this work in 1995 with a contract for WRI to cross-reference the FEWS variables from the 1994 VA and DHS variables. Following the FEWS presentation, the AGRHYMET team described several projects they have been working on. These included targeting construction of new health centers in the Mayahi arrondissement in Niger by using existing health centers and buffer zones around each center. This was a joint effort between AGRHYMET and CERPOD for presentation at the Population Conference in Cairo in 1994.

AGRHYMET also presented the types of training they can provide in the area of GIS and data structures. They can now provide training in CAD and AUTOCAD, GIS software packages such as ATLAS, ARCVIEW, ARC INFO, and IDRISI, and maintenance and development of databases. As the participants become more aware of the potential of GIS, they will naturally look for available training, and AGRHYMET could take a role in addressing these needs. An outline of regional needs and issues that AGRHYMET could address was developed in a wrap up session [see Appendix D "Regional Needs and Issues" Wednesday 5/22/96].

The remainder of the day was dedicated to ARCVIEW-I training, conducted by

display some of the WASAP regional data base variables. In addition, since REDSO has full Internet access, a hands-on presentation and training were given on using the Internet and World Wide Web, to look at the FEWS home page and other sources of information for West Africa.

### 3.4 Thursday, 23-May-96

#### 3.4.1 APPLICATIONS FOR ANALYSIS OF ECONOMIC GROWTH

The focus on Thursday was on agricultural development and economic growth. Glenn Rogers gave an introductory presentation to link the day's presentations to the overall conference themes and reviewed his spatial analysis in Zaire on cost effectiveness of the USAID assistance program. This included an example of estimating the impact of agricultural development on life expectancy by rural market areas.

#### Typologies of Local Urban and Rural Administrative Units

The goal of classifying local administrative areas into typologies was to build an analytical framework by identifying geographic areas with common social, economic or environmental characteristics which are important for policy and program design.

WASAP work for area typology analysis included six steps:

1. identify lat. and long. for DHS clusters
2. compute cluster (20-30 households) level estimates of DHS variables
3. compile a regional geo-referenced data base
4. to develop a typology of local administrative units
5. to link this information to the geo-referenced clusters
6. conduct preliminary statistical analysis using these linked datasets.

Norbert Henniger of WRI gave an overview of work on the WASAP related to development of area typologies. He began the session with a discussion on how to define geographic typologies for GIS analysis. The process of defining a typology is basically the steps and assumptions required to define the data base structure and organize or classify the data to respond to certain questions. For example, for the WASAP regional data base prepared by WRI for REDSO, many assumptions and thresholds were selected to classify areas included in the extensive regional West

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diversified local economy, aridity zones, and distance to major metropolitan markets. Once the classification of local areas into a dozen categories are defined, these are then used to group survey data such as the DHS to make statistical comparisons across groups of similar areas.

#### Other Regional Research Applications

Two other regional programs were presented that are in the process of establishing a GIS-based data structure.

##### 3.4.2 WARDA (West African Rice Development Association)

WARDA is a member of the CGIAR group of international agricultural research centers and is involved in classic research on varietal and cropping improvements. WARDA is expanding their research to include watershed management and impact assessments of different rice production systems. Tom Randolph of WARDA presented the current status of introducing GIS technology in the monitoring and evaluation of efforts to introduce new strains of rice (i.e. areas under cultivation of newly developed strains of rice). This includes mapping and monitoring areas where the water used for the rice production will increase the potential for malaria outbreaks.

##### 3.4.3 CILSS/INSAH

CILSS/Institut du Sahel presented the application of GIS to monitor desertification, food security, and population growth in the Sahel. CILSS/INSAH is focused on economic analysis of the Sahel. Current research areas include the impacts of the January 1994 devaluation of the FCFA, food security in the Sahel, and agricultural production and regional trade. Jim Tefft, a Visiting Specialist working with INSAH presented some interesting results on education and nutritional indicators in cotton production (CMDT) areas of Mali. The preliminary results showed that increased production, which should lead to more available income, does not necessarily translate to increased expenditures on health care and education, or improved nutritional status of women and children. For example, his preliminary results indicate that in Mali the highest rates of stunted children and the lowest body mass of women occur in the cotton zone where there are also the most health centers per capita and above average income levels.

This INSAH research illustrated the need to cross socio-economic and nutritional indicators with the traditional agricultural and cash crop production values to more fully understand the food security situation. The availability of the geo-referenced

### 3.4.4 Data Formats and Data Sharing

Barbara Dickerson, form USAID/Ghana, presented the issue of data formats and sharing information. She stressed the importance of establishing cost effective monitoring systems, by identifying the primary and secondary data sources and users, and how to establish a working 'network' of partners.

## 3.5 Friday, 24-May-96

### 3.5.1 APPLICATIONS IN SOCIAL SECTORS - HEALTH AND EDUCATION

Presentations on Friday focused on the use of GIS analysis in the education and health sectors. Norbert Henninger presented the results of a WRI study to compare various regional indicators with the DHS data. He showed some interesting examples of crossing the FEWS-RVA resource base and income variables with the DHS data. In some cases the DHS supported the inherent assumptions in the RVA indicators, while in other cases, the DHS data seemed to be saying the opposite, or was inconclusive. This example illustrated the use of DHS data to understand and improve the VA indicators that are currently used by FEWS, and which can eventually support other USAID program plans.

Data mapping can be equally effective in guiding an analyst to ask appropriate questions while analyzing survey data. This is roughly analogous to observing a scatter diagram before doing regression analysis in order to get an idea of what model may be the best predictor for describing relationships among variables. For example the WASAP presentation of regional DHS results for education showed a clear pattern of spatial distribution of population by level of enrollment of school-age children (ages 6-11) with the highest levels concentrated along the coast and gradually diminishing with increasing latitude. Regression analysis showed a strong positive relationship between enrollment and ecological zones which were coded into six types: desert and semi-desert, dry savanna, transition, wet savanna, coastal forest and forest. Further analysis while controlling for latitude shows a strong relationship between enrollment and other variables: for example strong positive relationships between enrollment levels and urbanization, proximity to markets, level of food and cash cropping and a strong inverse relationship between enrollment and intensity of crops requiring intensive child labor.

The strength of the technology lies is its visual power -- to succinctly present data in

The example described above shows the need to consider all possible relevant factors in analyzing cause and effect relationships. It was pointed out that the explanatory power of the maps does not necessarily extend to showing cause and effect relationships and should be complemented by further detailed analysis carried out by a sector specialist.

There were also several presentations by representatives from Mali showing the use of GIS to target potential education interventions. One classic example was to first map all of the existing schools, public and otherwise, in a certain region of Mali. The next step was to create buffer zones around existing schools to identify gaps in the coverage and support proposals for new schools. The examples from Mali clearly showed the integration of GIS into the USAID results package monitoring, as well as the connections to Malian ministries and projects. FEWS plans to present a similar approach to the USAID mission in Niger to illustrate how the 'FEWS-approach' can be used to strengthen the SO impact and monitoring process.

Souleyman Barry, presented the new REDSO/WCA regional family health and AIDS project.

### 3.6 TRAINING

The training was conducted in the REDSO/WAAC/IRM Computer Training Room, which was set up with fifteen pentium PCs. All PCs had Arcview I and II loaded as well as access to the internet via TCP/IP using NETSCAPE browser.

Day	Time	Course	Number of Participants
Tuesday	14.00-15.00	ArcView I	13
	15:15-16:00	ArcView II Basics	10
	16:15-17:00	Personal Applications	
Wednesday	14.00-15.00	ArcView I	SRO
	15:15-16:00	ArcView II Performing Analysis	SRO
	16:15-17:00	Personal Applications	
Thursday	14.00-15.00	ArcView II Creating your own data	9
	15:15-16:00	ArcView II Creating output	9
	16:15-17:00	Personal Applications	
Friday	14.00-15.00	Personal Applications	
	16:15-17:00	Personal Applications	

SRO = Standing Room Only

The workshop successfully met the objectives stated above. Participants left with a good understanding of the uses of GIS, knowledge of other GIS initiatives underway within the region and ideas for use of GIS in their own programs. After consultations with Norbert Henninger of WRI and Glenn Rogers of REDSO/WCA, the training in the use of ARCVIEW I and ARCVIEW II along with a demonstration of another GIS software package, Atlas GIS (the standard software used by GIS users in Mali), participants were able to make an informed recommendation about appropriate next steps and choice of software for GIS use in their programs. Participants successfully identified users elsewhere in the region with whom they should collaborate.

At the end of the day on Tuesday the participants were asked to identify common themes, common future plans, and regional support needs that had been discussed during the day's presentations by missions. These are outlined below:

#### Common Themes and Issues Across USAID Bi-lateral Programs

1. Applying spatial data analysis to impact evaluation,
2. Important synergies available from geographic targeting to ensure overlap of interventions in different sectors,
3. Need for sharing, collaboration, and coordination
4. Cost-Benefit analysis for database construction
5. Need for clearly defined objectives and identification of categories of GIS needs,
6. Geo-referencing and mapping of intervention sites, including evaluating accuracy and standard coding.
7. Need to improve capacity for spatial data ANALYSIS including sensitivity to the time frame and a wider variety of spatial units of analysis.

#### Common objectives in developing future USAID GIS systems.

1. Target development investments
2. Improve cost effectiveness of programs,
3. Expand the user base for spatial information
4. Increase the use of maps
5. Harmonize databases so they can be used together.

#### Regional Support Needs that REDSO/WCA should address

1. Increase the supply of spatial data and related products

users and producers.

2. Increase the demand for GIS analysis by decisionmakers by bringing together the computer specialists, sectoral data analysts, and program decisionmakers.
3. Produce a "Guidelines on Best Practices" emphasizing
  - A. Simple and flexible GIS designs.
  - B. Training needs by target groups
  - C. Data distribution methods
  - D. How to centralize data while decentralizing users

Participant were asked to fill in an evaluation form at the end of the workshop. As shown in the following summary table, most participants were highly satisfied with the topics presented, thought the workshop was well organized, and that it met the stated objectives. Participants were less satisfied with the training provided though most were highly satisfied overall with the workshop.

Ranking Scale For Participant Evaluation

Survey Question	1 Not At All	2	3	4	5 Very High Degree	Average
A	0	0	7	9	3	3.8
B	0	0	6	10	4	3.9
C	0	0	8	10	2	3.7
D	0	1	9	7	0	3.4
E	0	0	5	11	3	3.9

Survey Questions Using Ranking Scale

- A. To what extent did this workshop meet its objectives?
- B. How well organized was this workshop?
- C. How satisfied were you with the topics presented?
- D. How satisfied were you with the training provided?
- E. Overall, How satisfied were you with this workshop?

Name	Organization/Address/Phone/Email
Afeli Kouakou	DPES/MENFB 21-03-00
Yao Amani	DPES/MENFB 22-75-83
NSeka Vita	PDRB/USAID/Mali (223)-22-95-80
Ousmane Sidibé	CPS/Santé-Mali (223)-23-27-26
Judy Blumhagen	USAID/Niger (227)-73-42-47
Ouattara André Déya	CIRES/CI 44-43-63
Koffi Kouamékan	CIRES/CI 44-43-63
Barbara Dickerson	USAID/Ghana 233-21-228440
Koffi Rémi	CNTIG 22-35-30
Mahaman Moussa	WARDA/ADRAO 63-45-14
Charles May	USAID/Mali (223)-22-36-02
Clifton A. Franklin	CHPS/USAID/Mali (223)-23-12-47
James F. Tefft	PRISAS/INSAH/MSU/Mali (223)-22-09-18
Kevin Sturr	FEWS/Mali (223)-22-46-45
MacArthur Pay-Bayee	USAID/Liberia (231)-22-63-70
Yves-Koffi Prudencio	USAID/REDSO 41-45-28
Diabaté Djibril	CNTIG 22-35-30
Fatou Rigoulot	USAID/REDSO 41-45-28
Béda Amon Delphine	CNTIG 22-35-30
Aka Dimy	CNTIG 22-35-30/33-10-91
Ibrahim Fofana	CNTIG 22-35-30/33-10-91
Nancy Estes	USAID/REDSO 41-45-28
Djédji Catherine	Winrock-Int., 44-94-14 Fax: 44-94-11
Robert Sears	USAID/REDSO 41-45-28
Dramane Mariko	ECOFIL/IER/Mali (223)-22-59-04
Joann Jeffers	HPN/USAID/Ghana 233-21-228440
Donna Haney	IBSBC Literacy/Ghana 021-776319
Jim Haney	IBSBC Base count Demography/Ghana 021-776319
Diane Falk	I.B./Côte d'Ivoire 26-54-43 Fax: 26-22-96
Mark McGuire	USAID/ARD/FEWS/Niger, (227)-73-41-20
Nadau Désiré	USAID/ARD/AGRHYMET/Niger, (227)-73-31-16
Alfari Issifou	Centre AGRHYMET/Niger (227)-73-31-16, fax: 732435
Ambe Tanifum	USAID/Niger (227)-73-43-63
Adama Setodji	UNICEF-WCARO (225)-21-31-31
Moussa Dolo	CERPOD-INSAH/Mali (223)-22-30-43/BP1530 Bko

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Nadau Désiré	AID/ARD/AGRHYMET/Niger(227)733116,Fax732435
Alfari Issifou	Centre AGRHYMET/Niger (227)733116 Fax732435
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Alfari Issifou	AGHRYPMET/Niamey	
Desire Nadau	AGHRYPMET/ARD/USAID/Niamey	
Ambe Tanifum	USAID/Niger	
Charles May	USAID/Mali	CMAY@USAID.GOV
James Tefft	PRISAS/MSU	jtefft@prisas.insah.ml
Diane Falk	IB.SBC	dfalk%waaobj@mcimail
Mark McGuire	USAID/FEWS/Niger	mark.mcguire@his.com
Judy Blumhagen	USAID/Niger	jblumhagen@usaid.gov
Koffi Remi	CNTIG (CI), 22-35-30 B.P. V324 Abj	
Beda Amon Delphine	CNTIG (CI), 22-35-30 B.P. V324 Abj	
Joanne Jeffers	USAID/HPN/Accra	JJeffers@usaid.gov
Dramane Mariko	ECOFIL/IER/Bamako	
Djedji Catherine	WINROCK INT. (CI)	
Ousmane Sidibe	CPS/Ministere Sante	23-27-25
Yao Amani	DPES (CI)	22-75-83
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Ouattara Andre	CIRES	44-43-63
Mahaman Moussa	WARDA/ADRAO, Bouake (CI)	WARDA@cgnet.Com
Adama Setodji	UNICEF-WCARO 213131X444	
	Adama-SETODJI-at-po3Ø2AØ1@Smfplink.unicef.org	
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Ouattara Andre Deya	CIRES,44-43-63/08BP1295 Abj.08	
Moussa Dolo	CERPOD (INSAH)/Mali	(223)-22-30-43/BP1530 Bko
Mahaman Moussa	WARDA	(225)-63-45-14
Kevin Sturr	FEWS	(223)-22-47-46
Coffi Prudencio	REDSO	(225)-41-45-28
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Ousmane Sidibe	CPS/Sante	(223)-23-27-25
Beda Amon Delphine	33-10-91/BP V324	

USAID PROGRAM IMPACT EVALUATION AND TARGETING

Date/Time	CONFERENCE ROOM	COMPUTER ROOM
Tuesday 5/21		
09:00-09:15	Workshop Overview	
09:30-09:45	Impact Reporting GR	
09:45-10:00	Liberia Project LWS	
10:00-10:15	Coffe Break	
10:15-10:45	USAID/Mali Needs	
10:45-11:00	USAID/Ghana Needs	
11:00-11:10	USAID/Benin Needs	
11:10-11:20	USAID/Niger Needs	
11:20-11:30	D/G Sectoral Needs	
11:30-12:00	Break Out Sessions	
12:00-13:30	LUNCH BREAK	
13:30-14:00	USAID Regional Needs	GIS and WWW
14:00-15:00	Mapping Survey Data	ARCVIEW I training
15:00-15:15	COFFEE BREAK	COFFEE BREAK
15:15-16:00		ARCVIEW II Basics
16:00-17:00	Liberia Working Group	PERSONAL APPLICATIONS

Date/Time	CONFERENCE ROOM	COMPUTER ROOM
Wed 5/22		
09:00-09:15	Workshop Overview	
09:15-10:15	FEWS	
10:15-10:30	Coffe Break	
10:30-11:00	CILSS-Desertification	
11:00-11:15	Mapping Survey Data	
11:15-12:00	Break Out Discussions	
12:00-13:30	LUNCH BREAK	
13:30-14:00	AID Results Framework	GIS and WWW
14:00-15:00	Regional M&E	ARCVIEW I training
15:00-15:15	COFFEE BREAK	COFFEE BREAK
15:15-16:00		ARCVIEW II Analysis
16:00-17:00	Workshop Daily Wrap Up	Personal Applications

Date/Time	CONFERENCE ROOM	COMPUTER ROOM
Thurs. 5/23		
09:00-09:30	Workshop Overview	
09:30-10:30	WRI TYPOLOGIES	
10:30-10:45	Coffee Break	Coffee Break
10:45-11:00	Data Formats/Sharing	
11:00-11:15	WARDA Impact Studies	
11:15-11:30	INSAH regional studies	LIBERIA DATA
11:30-12:00	Discussion Groups	
12:00-13:30	LUNCH BREAK	
13:30-14:00	Technology Adoption	MALI Presentation
14:00-15:00	WARDA Collaboration	ARCVIEW II training
15:00-15:15	COFFEE BREAK	COFFEE BREAK
15:15-16:00	Spatial Statistics	TPOLOGY DATA LAYERS
16:00-17:00	Workshop Daily Wrap Up	

Date/Time	CONFERENCE ROOM	COMPUTER ROOM
Friday 5/24		
09:00-09:15	Workshop Overview	
09:15-10:00	WRI EDUCATION STUDY	
10:00-10:15	EDUCATION IN MALI	
10:15-10:30	COFFEE BREAK	COFFEE BREAK
10:30-11:00	CILSS SERVICES OFFERS	
11:00-11:30	USAID/MALI HEALTH	
11:30-12:00	USAID/GHANA HEALTH	
12:00-13:30	LUNCH BREAK	
13:30-14:00		GIS and WWW
14:00-15:00	REDSO REGIONAL HEALTH	ARCVIEW II training
15:00-15:15	COFFEE BREAK	COFFEE BREAK
15:15-16:00		ARCVIEW II training

LWF/WS-LIBERIA PROGRAMM STARTED SMALL SCALE CROSS BORDER OPERATION FROM FREETOWN TO WESTERN LIBERIA (CAPE MOUNT AND BOMI) IN THE LAST QUARTER OF 1990. IN FEBRUARY 1991, LWS OPENED AN OFFICE IN MON ROVIA. OUR INITIAL OPERATION WAS MOSTLY EMERGENCY RELIEF RANGING FROM FOOD DISTRIBUTION IN PARTNERSHIP WITH WFP. USED CLOTHINGS AND NON FOOD DISTRIBUTION, REPATRIATION OF LIBERIAN REFUGEES FROM FREETOWN, DISTRIBUTION OF DAY OLD CHICKS, OTHER COMMUNITY SELF-HELP PROJECTS INCLUDING FOOD-FOR-WORK.

IN 1992, A MORE REHABILITATION APPROACH ACTIVITIES WERE INITIATED WITH A 4-YEAR REHABILITATION PROGRAM WITH FULL SUPPORT FROM TRADITIONAL DONORS. ASIDE FROM THIS REHABILITATION PROGRAMS, EMERGENCY PROJECTS FUNDED BY NON-TRADITIONAL PARTNERS WERE IMPLEMENTED.

#### COUNTRY STRATEGY:

PRIORITY SETTING-AN ASSESSMENT TEAM FROM THE ELCA, LWF/GVA, AND OTHER DONORS CAME TO LIBERIA AND ASSISTED IN THE FORMULATION OF A COUNTRY STRATEGY. SPECIFIC PRIORITY AREAS WERE IDENTIFIED AND WAS THE SUBJECT OF OUR OBJECTIVES FOR THE LAST FOUR YEARS.

THE EXPERIENCES GAINED FOR THE PAST YEARS ENABLED US TO REACT MORE RESPONSIVELY TO BOTH EMERGENCIES AND REHABILITATION NEEDS. OUR STRENGTH LIES IN OUR ABILITY TO ADAPT TO THE LOCAL CONDITIONS AND THUS REMAIN FOCUSED TO OUR ESTABLISHED GOALS.

TO OPTIMIZE THE USE OF RELIEF FUNDS FOR LIBERIA, LWS INTENDS TO COORDINATE AND DEVELOP PARTNERSHIP WITH OTHER NGO'S. INSTEAD OF ASKING OUR TRADITIONAL DONORS FUNDS FOR FOOD, WE COORDINATE WITH WFP WHO IS THE BIGGEST SUPPLIER OF FOOD IN LIBERIA. THE SAME ARRANGEMENT FOR AGRICULTURAL TOOLS WITH THE EUROPEAN UNION/FAO.

FOR A MORE SUSTAINABLE REHABILITATION PROGRAM, LWS INCORPORATED IN ITS POLICY OF WORKING WITH LOCAL GROUPS AND NGO'S TO ENABLE THEM TO BUILD THEIR OWN CAPACITIES TO HELP THEMSELVES.

#### MANDATE:

THE MANDATE OF LWS IS TO SERVE PEOPLE IN DIRE NEED WITHOUT REGARD TO RACE, RELIGION, OR POLITICAL AFFILIATION.

#### FUTURE PLANS IN THE LIGHT OF THE RECENT CRISIS:

1. LWS WILL CONTINUE TO MONITOR THE UNFOLDING OF EVENTS IN LIBERIA AND WILL CONTINUOUSLY ADJUST CONTINGENCY PLANS DRAWN ON WEEKLY BASIS. AS CONDITION ALLOW US TO RESUME HUMANITARIAN ACTIVITIES, LWS WILL ADAPT A LOW PROFILE APPROACH AND WOULD THEREFORE RESPOND TO EMERGENCY RELIEF WITH A MINIMUM INVESTMENT IN ANY CAPITAL INTENSIVE EQUIPMENT.
2. LWS WILL CONTINUE TO LOOK AFTER STAFF WELFARE - CONSCIOUSLY AWARE OF THE FACT THAT WE CANNOT SUSTAIN A DISPLACED CAMP ON A LONG TERM BASIS.
3. TO SUPPORT ANY INITIATIVE THAT WILL FOSTER UNDERSTANDING OF THE HUMANITARIAN CONDITIONS IN LIBERIA AND AT THE SAME TIME INCULCATE TO THE LIBERIAN WARRING FACTIONS THE NEED TO STOP THE FIGHTING AND CREATE A SUSTAINABLE LONG TERM PEACE.

REGIONAL NEEDS AND ISSUES  
Wednesday 05/22/96

- I. INSTITUTIONAL:
  - A. Problems with non-contiguous Regional Coverages
  - B. Identify Comparative Advantage of National and Regional Institutions
  - C. Developing a Regional Coordination Mechanism (Body, Forum, Format)
- II. TECHNICAL ISSUES:
  - A. Providing Effective Technology Transfer
  - B. Identify/Clarify Data Sources and Underlying Assumptions
  - C. Coding and Geo-Referencing Conventions
  - D. Question of Map Scale, Unites of Analysis
- III. "CROSS-CUTTING"
  - A. Assure Data/Product Flow To/From National and Regional Institutions
  - B. Define Secondary Data User Needs From Primary Data Collectors
  - C. Well-Focused Training Needs
    - Technical
    - Decision-Makers
    - General Users