Enlisting National Mapping Agencies in the Fight against HIV/AIDS:

Building Partnerships with Ministries of Health and Social Services, and National AIDS Commissions

CODIST I Pre-conference Workshop
Addis Ababa, Ethiopia

April 27, 2009

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MEASURE Evaluation
www.cpc.unc.edu/measure

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John Spencer, James Stewart, and Libby Barron of MEASURE Evaluation; Andrew Inglis, MEASURE DHS; Dorina Maris, U.S. Agency for International Development; Nathan J. Heard, Humanitarian Information Unit, U.S. Department of State; Paul Belanger, United Nations Economic Commission for Africa; Chris Fontaine, Joint United Nations Programme on HIV/AIDS; and Steeve Ebener, World Health Organization, are acknowledged for their contributions to the workshop.

Special thanks are extended to the workshop attendees for their time and effort to participate in the workshop and for their continuing effort in their countries.

Workshop participants (MEASURE Evaluation photograph).

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List of Acronyms

CODIST	Committee on Development Information, Science and Technology
GIS	geographic information system(s)
HBC	home-based care
MOH	ministry of health
NAC	national AIDS council, national AIDS commission
NMA	national mapping agency
NSDI	national spatial data infrastructure
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNECA	United Nations Economic Commission for Africa
USAID	U.S. Agency for International Development
WHO	World Health Organization

Executive Summary

In a first of its kind meeting, representatives of government health and mapping agencies from throughout Africa met and committed to working jointly to combat HIV/AIDS as part of the CODIST I pre-conference workshop. The workshop, Enlisting National Mapping Agencies in the Fight against HIV/AIDS: Building Partnerships with Ministries of Health and Social Services, and National AIDS Commissions, which was held April 27, 2009, at the United Nations Conference Center in Addis Ababa, Ethiopia, was organized by MEASURE Evaluation with support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the U.S. Agency for International Development (USAID). Co-sponsoring the workshop with MEASURE Evaluation was the United Nations Economic Commission for Africa (UNECA) and the Joint United Nations Programme on HIV/AIDS (UNAIDS). The workshop represents the first time government representatives from the health and mapping sectors have met on such a large scale to harmonize national efforts to combat HIV/AIDS more effectively.

The use of geographic approaches in the fight against HIV/AIDS is increasing. Often, however, ministries of health (MOHs), national AIDS councils (NACs) and other social service ministries lack capacity to use spatial data and tools, such as geographic information systems (GIS) and digital globes. MOHs and NACs could benefit from building linkages with existing in-country capacity and national spatial data infrastructure (NSDI) efforts. NSDI initiatives guide the development of standardized spatial data and capacity to collect, manage and use spatial data at local, national and global scales. Many countries in Africa have an established NSDI initiative, and through such initiatives have built in-county capacity for the creation and use of spatial data and tools. National mapping agencies (NMAs) are, for most countries, the entity responsible for coordinating NSDI efforts and are sources of expertise in the creation, maintenance, and use of spatial data and knowledge of GIS software. The workshop, which drew 164 of its 187 participants from 29 African countries, sought to initiate a pan-African community of practice to increase involvement of MOHs, NACs and other social service ministries in the NSDI process and to build linkages between these health sector agencies and NSDI actors, including NMAs.

The one-day workshop was organized into morning and afternoon sessions, the first for presentations showing the use of spatial methods and tools by MOH and NAC representatives and the second for group work to prioritize the challenges limiting the creation of linkages between the mapping and health sectors. Two key results of the workshop were the heightened awareness among participants of the need to collaborate in the fight against HIV/AIDS and the spoken desire of many of the participants to increase cooperation. More tangibly, the groups from the afternoon session produced a ranking of the major issues affecting mapping of health data and articulated resolutions for consideration by the UNECA Committee on Development Information, Science and Technology (CODIST) sub-committee on geo-information. The full CODIST adopted all of the resolutions contained in this report. The adoption of these resolutions by UNECA member states is the first formalized endorsement of the importance of building linkages between the health and mapping sectors and commits the member states to pursuing such linkages. For more information, see www.cpc.unc.edu/measure/codist1.

Introduction

On April 27, 2009, in Addis Ababa, Ethiopia, MEASURE Evaluation, with support from the U.S. Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), organized the workshop Enlisting National Mapping Agencies in the Fight against HIV/AIDS: Building Partnerships with Ministries of Health and Social Services, and National AIDS Commissions. Workshop co-sponsors with MEASURE Evaluation included the United Nations Economic Commission for Africa (UNECA) and the Joint United Nations Programme on HIV/AIDS (UNAIDS). The workshop was held immediately prior to UNECA's Committee on Development Information, Science and Technology (CODIST) meetings, a larger gathering that brings together many representatives from national government agencies with scientific or technological responsibilities throughout Africa. MEASURE Evaluation and its partners sought to capitalize on the presence at the CODIST meetings of many representatives of government agencies involved in the mapping sector by sponsoring the attendance of representatives from ministries of health (MOHs), national AIDS councils (NACs) and social service ministries to meet with their mapping counterparts. The workshop represents the first time government representatives from the health and mapping sectors have met on such a large scale to harmonize national mapping and health efforts to combat HIV/AIDS more effectively.

The use of geographic approaches in the fight against HIV/AIDS is increasing. Often, however, MOHs, NACs, and other social service ministries lack capacity to use spatial data and tools such as GIS and digital globes. MOHs and NACs could benefit from building linkages with existing in-country capacity and national spatial data infrastructure (NSDI) efforts. NSDI initiatives guide the development of standardized spatial data and capacity to collect, manage and use spatial data at local, national, and global scales. Many countries in Africa have an established NSDI initiative and through it have built capacity in country for the creation and use of spatial data and tools. National mapping agencies (NMAs) are, for most countries, the entity responsible for coordinating NSDI efforts and are sources of expertise in the creation, maintenance and use of spatial data and knowledge of GIS software. The workshop, which drew 164 of its 187 participants from 29 African countries, sought to initiate a pan-African community of practice to increase involvement of MOHs, NACs and other social service ministries in the NSDI process and to build linkages between these health sector agencies and NSDI actors, including NMAs.

There is a need for building these linkages because often the health sector does not participate in the NSDI process. As a result, when health agencies have tried to include spatial data and tools in their work, they have had to confront many of the challenges that NSDI activities are meant to solve and that NSDI actors may have already faced and overcome. Lack of health sector involvement in the NSDI process can lead to duplication of effort as MOHs and NACs recreate existing datasets, purchase software that might generate some interoperability issues and develop capacity that may already exist in other branches of government. When linkages between the mapping and health sector exist, both sectors benefit. The health sector can save effort and resources through participation in the NSDI processes and the mapping sector can build a richer NSDI through a stronger network of stakeholders.

Another benefit of building linkages between the mapping and health sectors is the value of sharing information across sectors. A healthy population is a solid foundation for a stable, economically viable society. Health data can therefore provide valuable context to other sectors in government as they plan programs in education, economic development and other arenas. Conversely, health planners can gain valuable insight by considering data from other sectors of society such as agriculture, natural resources, and others. When the health sector participates in the NSDI process there can be a shared recognition of the value of all sectors' data when making decisions.

This report provides a description of the workshop including a discussion of sponsors and facilitators, participants, the agenda, presentations, group work, and results.

Sponsors

The workshop was sponsored by MEASURE Evaluation (www.cpc.unc.edu/measure) with assistance from USAID (www.usaid.gov) and PEPFAR (www.pepfar.gov), and co-sponsored by UNECA (www.uneca.org) and UNAIDS (www.unaids.org). Sponsoring organizations and their functional representatives for workshop implementation are presented in Table 1. Additionally, each organization had multiple staff members involved in the planning and implementation of the workshop whose contributions all were essential in ensuring the success of the meeting.

Table 1. Workshop Representatives

Sponsor	*Representative*
MEASURE Evaluation	John Spencer, MA, Senior GIS Specialist
USAID	Dorina Maris, MT (ASCP), MPH, CHES, Technical Advisor, Health Management Information Systems, Bureau for Global Health, Office of HIV/AIDS
Office of the Global AIDS Coordinator/PEPFAR	Nathan J. Heard, DSc, Public Health Analyst, Humanitarian Information Unit, U.S. Department of State
UNECA	Paul Belanger, PhD, GISP, Geographic Information Systems Officer, ICT, Science, and Technology Division
UNAIDS	Christopher Fontaine, Monitoring and Evaluation Advisor
Special Functional Representative from Non-Sponsoring Organization	
Steve Ebener, PhD, Scientist, World Health Organization	

Mapping and Health Sector Background

In many countries, the responsibility for producing and maintaining spatial data is spread across multiple ministries and agencies, while in other countries spatial activity may be more centralized. Regardless of the number of players, typically one entity coordinates the NSDI process. In most of the cases, the national mapping agency (NMA) is the institution in charge of leading the NSDI process, though might vary from country to country. While the NMA may coordinate NSDI efforts, there are multiple groups representing a variety of interests, both in the public and private realm, contributing to the NSDI. Likewise for health, NACs typically oversee national HIV/AIDS efforts. However, many other stakeholders are involved such as MOHs, ministries associated with orphans and vulnerable children (OVC), as well as NGOs and the donor community. The workshop provided a unique opportunity for representatives from these two realms, NSDI and HIV/AIDS, to explore opportunities to strengthen the data infrastructure for both sectors. For more information about the agencies that participated in the workshop, refer to Appendix I.

Participants

The total number of people participating in the workshop was 187, of which 176 were active workshop participants, 11 were sponsors or facilitators, and three were from the media. Of the 176 active workshop participants, 164 were from Africa (29 countries), seven were from the United States, four were from Japan, one was from Portugal, and one did not identify a country affiliation. MEASURE Evaluation sponsored the attendance of 22 participants from 15 countries. UNAIDS sponsored the attendance of five participants from three countries. UNECA supported the attendance of 39 attendees from 30 countries. Refer to Appendix I for details.

In terms of fulfilling the workshop objective of bringing together participants from the NSDI community and the health sectors in Africa, there were 21 attendees from the governmental health sector, such as MOHs or NACs, 28 attendees from NMAs, and 26 attendees from other governmental NSDI actors. See Figures 1-3 for breakdowns of participants by region and category.

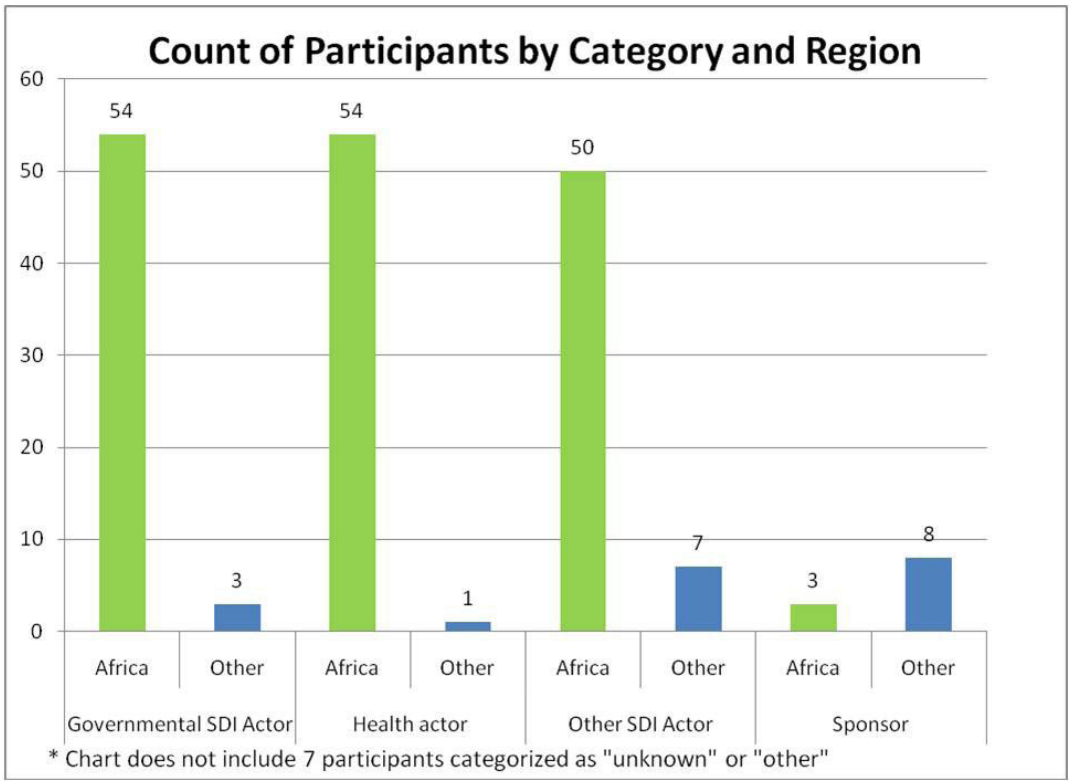


Figure 1. Count of participants by category and region.

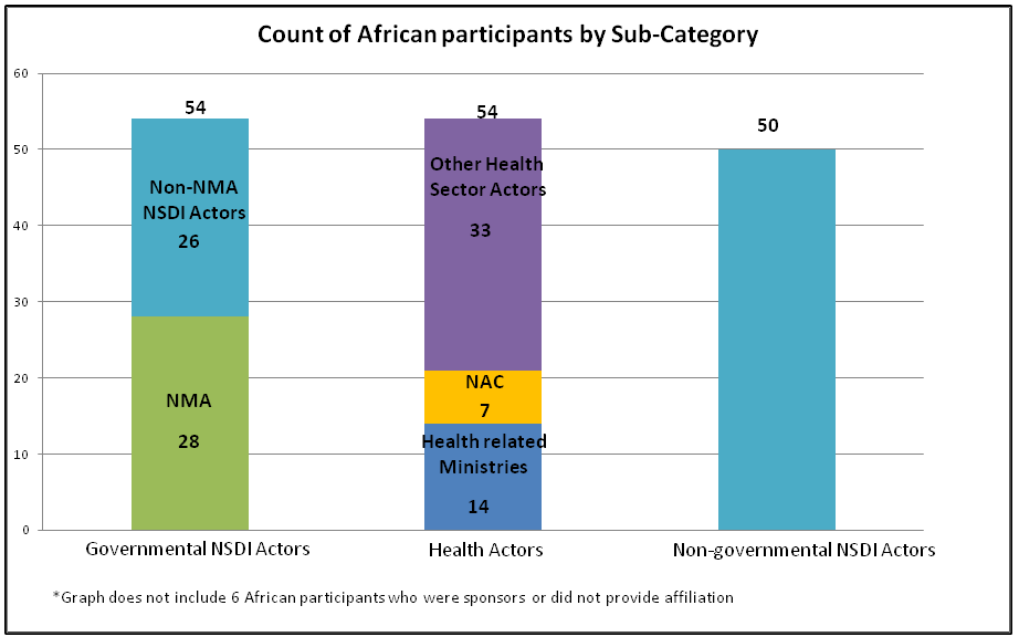


Figure 2. Conference African participants by category.

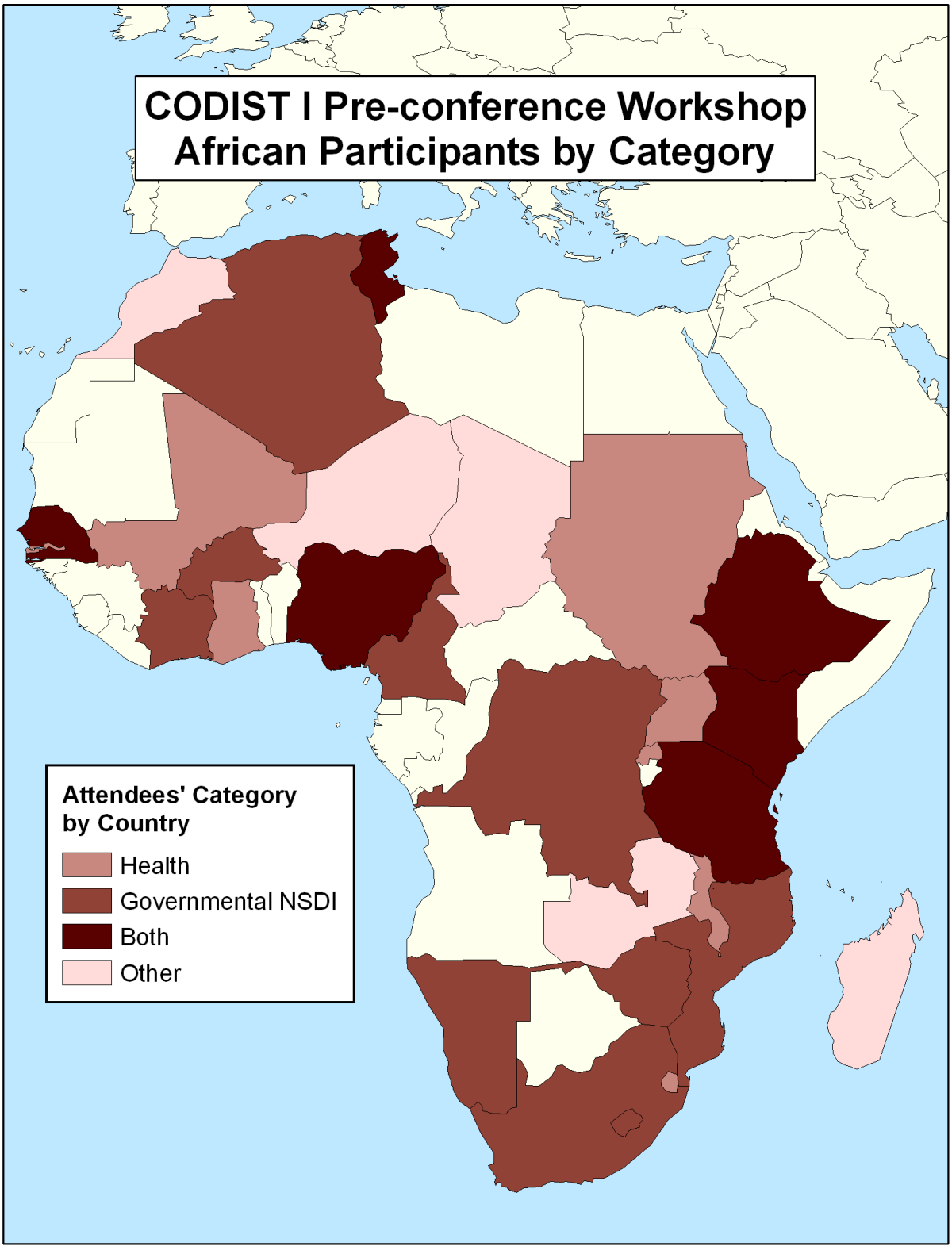


Figure 3. Conference participants by country and area of interest.

Workshop Proceedings

Agenda

The basic agenda was as follows (for a detailed agenda, see Appendix II):

9 a.m.	Opening Remarks
9:30 a.m.	Presentations: National Service Provision
10:30 a.m.	Break
11 a.m.	Presentations: Community-Based Reporting
noon	Question and Answer Wrap-up and Summary of Morning Session
1 p.m.	Lunch
2:30 p.m.	Group Work

Morning Session

The workshop began with opening remarks by representatives of the sponsoring organizations, and proceeded with presentations concerning the use of GIS technology in the planning, implementation, monitoring, and evaluation of HIV/AIDS programs in Africa.

The presentations were broken into two sessions, one covering national-level provision of services and the other covering community-based reporting of program indicators, both of which were followed by a panel discussion that fielded questions from the audience. Table 2 provides a list of the presentations by session. Presentation slides are provided in Appendix III and Appendix IV.

Table 2. Morning Session Presentations

Topic	Presentations
National service provision	Patrick Naphini, MOH, Malawi *Analysing geographic coverage of ART clinics using GIS: example of collaboration between several institutions in Malawi* Benjamin Mayala, National Institute for Medical Research *Tanzania: Mapping Task force Committee: Developing a health facility GIS database in Tanzania* Shabani Cishahayo, Center for Treatment and Research on AIDS, Malaria, Tuberculosis and Other Epidemics *Rwanda: GIS applied to HIV & AIDS program monitoring: Case of TRACnet System*
Community-based reporting	Bernard Mundia, National AIDS Control Council *Kenya: Identifying Priorities for Improving the Quality of Routine Community HIV and AIDS Information in Kenya* Ahmed Seid, Armauer Hansen Research Institute *Ethiopia: The Use of GIS for Mapping HIV/AIDS Susceptible Areas in Addis Ababa, Ethiopia*

Afternoon Session

The morning presentations were followed in the afternoon by group work to identify:

- opportunities for health sector representatives to collaborate with NMA and other NSDI actors;
- the most significant issues affecting mapping of health data in participant countries; and
- resources available to help resolve issues and strengthen NSDIs.

After the orientation (see Appendix V), participants were assigned to groups based on geographic and linguistic considerations (Figure 4). To see a tabular listing of countries assigned to groups, please see Appendix VI.

The work of each group was facilitated by either a representative from a sponsoring organization or a participant whose attendance had been sponsored by MEASURE Evaluation or UNAIDS.

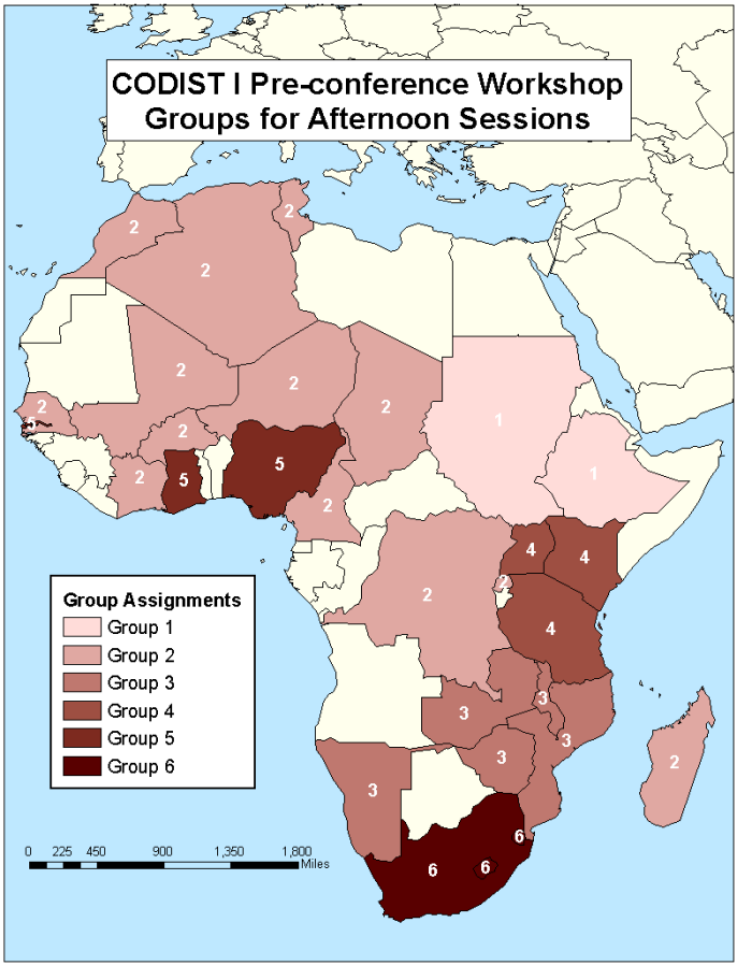


Figure 4. Afternoon session groups, by participants' country of origin.

As their primary tool to achieve the group work objectives, facilitators relied on a worksheet (see Appendix VII) containing a:

- description of the work to be done;
- short survey to identify the GIS capacity at disposal in each organization; and
- matrix of the most important issues faced by these same organizations to facilitate discussion.

Additionally, a worksheet with a flip chart depicting a typical GIS data production sequence (see Appendix VIII) was available to the members of each group to help the discussions.

Group Work Findings

Pre-workshop information survey — Prior to the workshop, participants were asked to submit a list of top five challenges they face in their daily job in relation to the collection, analysis, and use of geospatial information and GIS technology to guide HIV/AIDS interventions. Among the 159 respondents, the three issues most often mentioned were related to data, resources, and a mix of planning, awareness raising and collaboration (Figure 5). All three issues are key components of most SDI efforts and indicate a robust NSDI can alleviate many of the most significant challenges people face when trying to use spatial data and tools.

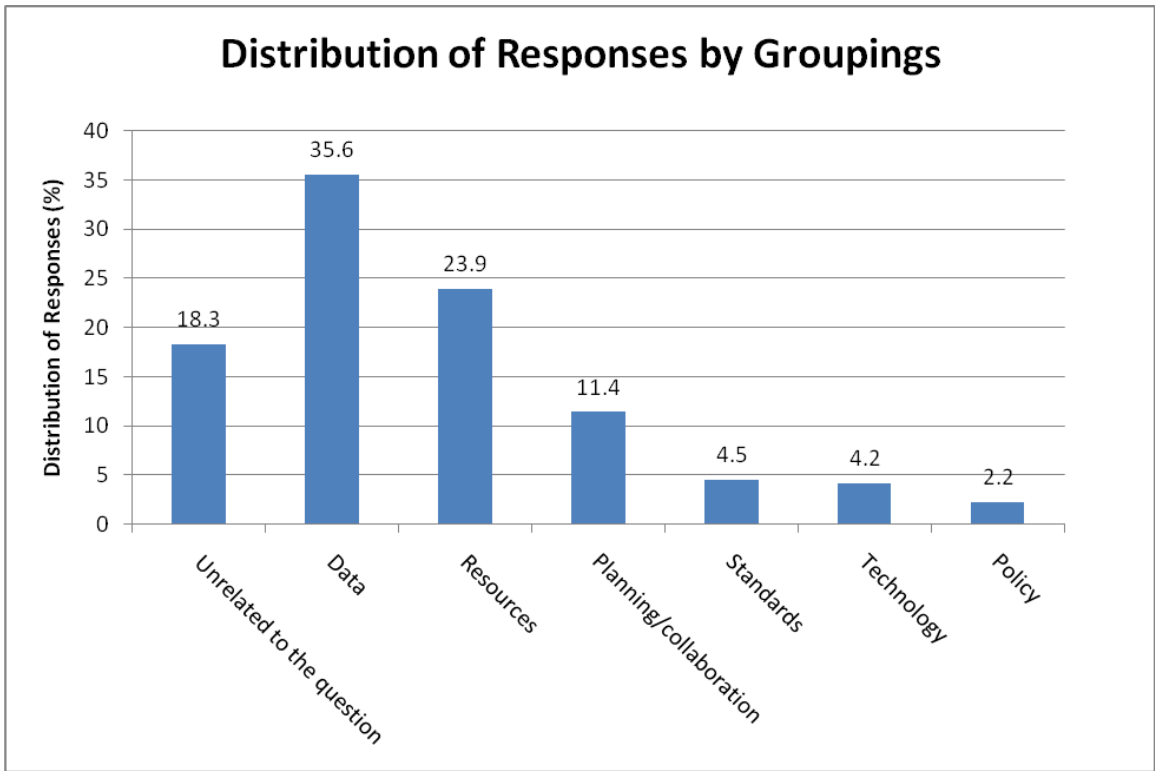


Figure 5. Pre-workshop survey results.

Most significant issues affecting mapping of health data — In the course of the group work, each group was charged with using the provided list of possible issues developed using the results of the pre-conference survey to identify and rank the five most significant issues affecting mapping of HIV/AIDS data. The full issue list had been organized into the four most important categories identified during the pre-workshop survey (data, resources, awareness, and standards), with the data category being further divided between spatial and HIV data. To view the cumulative scores across all groups(Figure 6). Based on cumulative score, workshop participants considered issues related to spatial data – as opposed to HIV/AIDS data – to be the most significant. More specifically, the greatest sources of concern were problems with collection of new data, availability (shortage) of data for current needs, and obstacles to acquiring and sharing available data.

Second in rank based on cumulative score was resources. However, more groups ranked resources as the most significant issue, more than any other. The primary concern for resources was the overall availability (shortage) of qualified personnel to accomplish the GIS and mapping tasks required for the effective planning, implementation, monitoring and evaluation of HIV/AIDS programs.

The third most significant issue category was awareness, which encompassed awareness of other organizations' efforts as well as opportunities to collaborate. Participants also considered important the availability of HIV/AIDS data and overall data standards. For a more detailed view of major issues by sub-category, see Appendix IX.

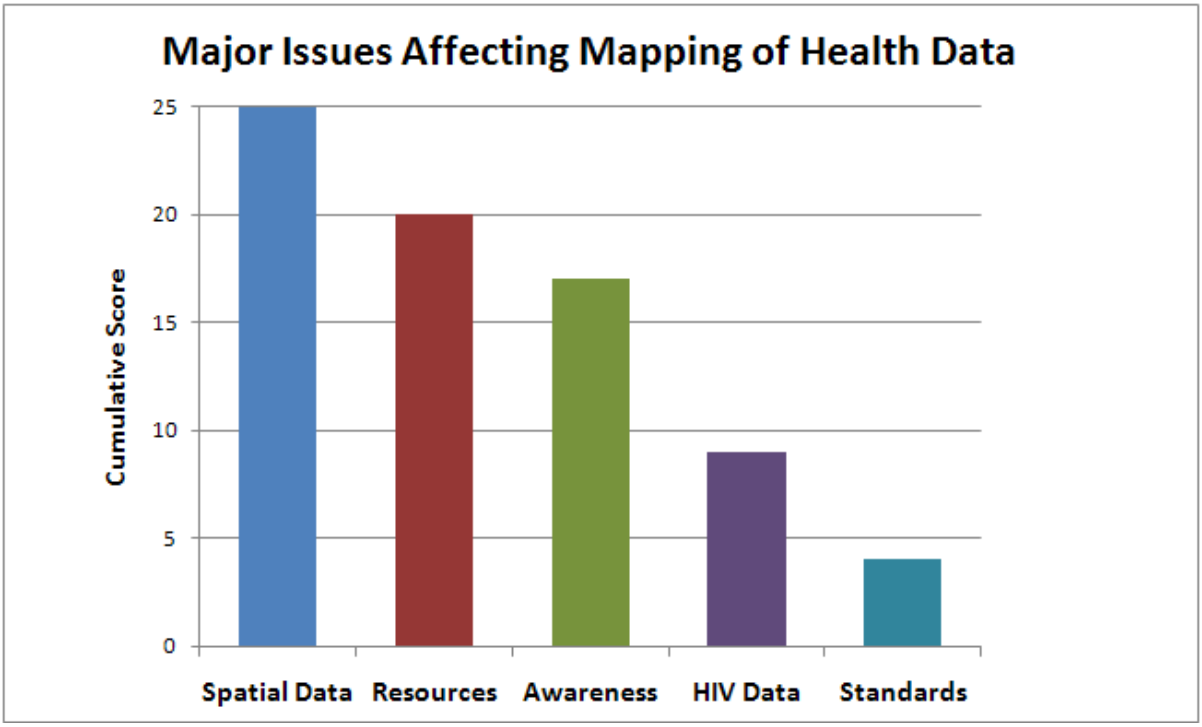


Figure 6. Participants' cumulative scores for health-data mapping issues.

These results largely mirror the results from the pre-conference survey, which is perhaps to be expected. However, because the ranking and evaluation of these issues were a group exercise, involving participants from both the mapping and health sectors, the group was able to facilitate a discussion to explore reasons behind these challenges and identify opportunities for overcoming them.

Resources available to help resolve issues and strengthen NSDIs — Participants were asked to fill out a brief survey addressing GIS capacity in their organization (Appendix VII). Due to time constraints, not every participant completed the form; however, it was possible to collect information for 54 of the 113 African continent-based organizations (47.8 percent). Thirty-four of these institutions (62.9 percent) do have some GIS capacities in terms of human resources, the number varying from only one person to more than 100 GIS staff at the Chief Directorate, Surveys and Mapping in South Africa.

Opportunities for NMA and MOH representatives to collaborate — Some groups went well beyond the group work instructions asking them to identify the most significant issues affecting the mapping of HIV data. The francophone group, for example, also prepared a detailed report of examples of collaboration that already exist between NMAs and the health sector, challenges to making linkages between the health sector and NMAs and NSDI efforts, and recommendations for improving collaboration between NMAs and the health sector. These are presented in Appendix X.

Additional group work findings —The group composed of Lesotho, South Africa, and Swaziland articulated two resolutions for consideration by the CODIST (see Appendix XI).

Outputs from the Workshop

Reports — In addition to the group work results, the functional UNECA representative worked with the functional representatives of the other sponsoring organizations to produce a summary report for submittal to the CODIST subcommittee on geo-information (see Appendix XII). The report identified the following outcomes:

The workshop

- confirmed the importance of forging robust networks between the health sector and the other key players, starting with the national mapping agencies, when it comes to the use of geographic information in support of HIV/AIDS programs;
- found that overcoming the challenges in establishing and maintaining these linkages requires national-level leadership to ensure sustainability;
- illustrated that National Spatial Data Infrastructures (NSDIs) are better built around addressing real problems instead of as an end in itself. In this context, the exigency of public health, beyond just HIV/AIDS, can be seen as an effective driver of NSDI implementations;
- underlined the importance of several technical issues including understanding of the data flow.

Resolutions — The UNECA summary report also contained resolutions stemming from the workshop, which were approved by the full CODIST membership (see Figure 7).

By adopting these resolutions, African member states of the United Nations have recognized the value of linking health and mapping sector data and efforts. This is a first of its kind formalization of the value of such linkages by nations and subsequent commitment to pursue such linkages. These resolutions can serve as a model for other parts of the world. To view the draft reports of the subcommittee on geo-information and the full CODIST, please see the UNECA Web site www.uneca.org/codist/codist1.

Workshop Web page — To provide access to workshop results, MEASURE Evaluation has published a Web page that contains an outline of the workshop components. Each section of the outline provides links to relevant content, such as the agenda, presentations, and reports. The Web page can be accessed at www.cpc.unc.edu/measure/codist1.

On Enlisting National Mapping Agencies in the Fight Against HIV/AIDS

- Recognizing that HIV/AIDS is a major concern on the African continent that affects all aspects of society;
- Noting that there is a strong geographic dimension to the planning, implementation, and monitoring and evaluation of HIV/AIDS prevention, care and treatment programs; Also noting that very often health issues are not taken into account when developing the National Spatial Data Infrastructure (NSDI);

Recommends

Member States

- To ensure that the key players in the heath sector (Ministries of Health and / or Social Services as well as National AIDS Commissions) actively participate in the NSDI process to ensure that public health issues such as HIV/AIDS are addressed;
- To ensure non-discrimination against those afflicted with HIV/AIDS, particularly migrants;

ECA [UNECA]

- With the help of partners, to establish a community of practice allowing for the transfer of knowledge and experiences integrating health into the NSDI process among countries on the African continent and discuss issues such as developing a common semantics;

Partners

- Assisting in the effort to realize universal access to HIV/AIDS prevention, care and treatment to develop and implement a communication and advocacy strategy for the use of geographic information at the continental, regional and national levels;
- Involved in public health and NSDI activities in member States, including donor agencies, industry leaders, civil society and academia, to support all of the above, for example through public-private partnerships.

Figure 7. UNECA summary report recommendations.

Conclusions

A key objective of the workshop was to encourage and foster the creation of linkages among NMAs and national health agencies throughout Africa. These linkages can lead to a stronger data infrastructure, better data for decision-making, and less duplication of effort in building spatial data and capacity. Although building these linkages will require a long-term effort, the workshop did achieve some important short-term results:

- strong representation of NMA, health, and related organizations from 29 African countries;
- overwhelmingly positive comments received during the workshop and from a post-workshop survey;
- tangible results of the group work sessions, including identification of the most significant issues affecting mapping of HIV data in participant countries and the drafting of resolutions;
- adoption of all workshop resolutions by the full CODIST; and
- enthusiasm by sponsors and participants for future workshops.

To continue the momentum generated by the workshop, MEASURE Evaluation's next steps are to:

- participate in the virtual community to be developed by UNECA and continue to encourage and foster the continued collaboration of workshop participants;
- provide technical assistance as requested to help with incorporation of results of workshop into national AIDS response plans to address the needs identified in the group work sessions;
- monitor linkages that may develop in workshop participant countries; and
- assess the value of future workshops.

As of the writing of this report, the virtual community was under development and MEASURE Evaluation resident advisors and field staff were participating in the country operational plan development process with U.S. government staff.

A one-day event such as the CODIST I pre-conference workshop is limited in what it can accomplish, and should be seen as part of a longer and larger process. The key to successful realization of workshop goals and objectives is the involvement of all parties, but particularly the representatives from the NMAs and the health sector agencies. Ultimate success or failure rests on the will and desire within each country to make such linkages. Encouragingly, based on responses to a post-workshop evaluation survey, participants felt the workshop was a helpful first step in the long process of building linkages across the health and mapping sectors, and there was an expressed commitment among participants to build and strengthen those linkages.

Appendices

Appendix I: Participant Counts by Major Category, Country, and Organization

Participant Major Categories, Countries, and Organizations	Count
Other	**63**
Other	
Algeria	2
Embassy of Algeria in Ethiopia	2
Cameroon	2
Telecommunication Regulatory Board	1
UNECA	1
Canada	1
CTV NEWS OTTAWA	1
Chad	2
Ministère des postes et des technologies de l'information et de la communication (MPTIC)	2
Côte d'Ivoire	1
MINISTERE DE L'ECONOMIE ET DES FINANCES	1
Ethiopia	29
Addis Ababa University (AAU)	5
Ambassade de la Republique du Senegal	1
Arba Minch University, Full Time Employee	1
Ethiopian Civil Service College	1
Ethiopian Radio	1
Institute for Security Studies (ISS)	1
Jimma university	1
Nile Basin Inive	1
Oromia	1
Researcher	1
UNECA	7
UNECA/ICS	1
UNECA/ISTD	2
UNECA/NRID	1
Unknown	2
Urban Management Masters Programme	1
Urban Management Masters Programme - Ethiopian Civil Service College (UMMP- ECSC)	1
Gambia	2
Department of State for Basic and Secondary Education, Gambian Delegation	1
Directorate of Science & Tech. Education, Willy Thorpe Place Building	1
India	1
GIS Development	1
Japan	1
Infrastructure Development Institute (IDI)	1
Kenya	1
Regional Transport Workers Network	1
Madagascar	1
UNECA	1
Morocco	1
Ambassadeur du Royaume du Maroc en Ethiopie	1
Niger	1
MINISTERE DE L'ECONOMIE ET DES FINANCES	1
Nigeria	4

Participant Major Categories, Countries, and Organizations	Count
Centre for Development Action Intl	1
Department of Research and Innovations , National Universities Commission	1
University of Lagos	1
Unknown	1
Portugal	1
CGUL/IDL	1
Senegal	2
Universite de Bambey	1
Membre Agence de Régulation des Télécommunications, Consultant NICI	1
South Africa	3
Council for Scientific and Industrial Research (CSIR)	1
International Council for Science (ICSU) Regional Office for Africa	2
Tunisia	1
Ecole Nationale des Sciences de l'Informatique, University of Manouba	1
Unknown	1
Unknown	1
USA	2
Professor of ICT, Pace University	1
Unknown	1
Zambia	4
Communications Authority	2
Ministry of Communications & Transport	1
United Nations Development Programme (UNDP)/Ministry of Commerce, Trade and Industry	1
Geographic/Mapping	**59**
NMA	
Algeria	1
Institut National de Cartographie (INC)	1
Burkina Faso	1
Institut Géographique du Burkina	1
Cameroon	1
Institut National de Cartographie (INC)	1
Côte d'Ivoire	3
Comité National de Télédétection et d'Informations Géographique (CNTIG)	3
DRC	1
Centre de Recherche Géographique et de Cartographie (CERGEC)	1
Ethiopia	13
Ethiopian Mapping Authority (EMA)	13
Japan	3
Earth Observation Research Center (EORC)	1
Geographic Survey Institute (GSI)	1
Japan Aerospace Exploration Agency	1
Lesotho	1
Dept of Lands, Surveys & Physical Planning	1
Mozambique	1
Centro Nacional de Cartografia e Teledetecção (CENACARTA)	1
Namibia	1
MINSTRY OF LANDS AND RESETTLEMENT Directorate of Survey and General Mapping	1
Nigeria	3

Participant Major Categories, Countries, and Organizations	Count
Federal Surveys	1
National Space Research & Development Agency (NASRDA)	1
Ordnance Survey	1
Senegal	2
Direction des Travaux Géographiques et Cartographiques (DTGC)	2
South Africa	3
Department of Land Affairs	2
Surveys and Mapping	1
Tanzania	1
Ministry of Lands	1
Tunisia	2
Centre National de Télédétection	1
Centre Regional de Télédétection de l'Afrique du Nord	1
Zimbabwe	1
Department of Survey	1
Other	
Algeria	1
African Organisation for Cartography and Remote Sensing (AOCRS)	1
DRC	1
Commission Internationale du Bassin Congo-Oubangui-Sangha (CICOS)	1
Ethiopia	5
Addis Ababa Environmental Protection Agency	1
Agriculture and Rural Development	1
ESRI	1
Geographic Information Systems Society of Ethiopia (GISSE)	1
GEOMARK	1
Kenya	4
ESRI Eastern Africa	1
Regional Center for Mapping of Resources for Development (RCMRD)	3
Mozambique	1
ESRI	1
Nigeria	3
African Association of Remote Sensing of the Environment (AARSE)	1
Network Geomatics	1
Regional Centre for Training in Aerospace Surveys (RECTAS)	1
Senegal	1
Centre de Suivi Ecologique (CSE)	1
South Africa	1
EIS-AFRICA	1
USA	4
ESRI	2
National Space Science and Technology Center (NSSTC)	1
Trimble	1
Health	**54**
MOH	
Gambia	1
Department of State for Health and Social Welfare	1
Malawi	1

Participant Major Categories, Countries, and Organizations	Count
Ministry of Health	1
Mali	3
Agence Telesante Informatique Medicale (ANTIM)	2
Ministry of Health	1
Rwanda	1
TRAC Plus-Center for Treatment and Research on AIDS, Malaria, Tuberculosis and Other Epidemics	1
Senegal	1
HIV/AIDS Dept. Ministry of Health and Prevention - Senegal	1
Sudan	1
National Health Laboratory, Virology department - AIDS Unit	1
Swaziland	1
Ministry of Health and Social Welfare	1
Tanzania	2
Department of Social Welfare	1
National Institute for Medical Research (NIMR)	1
Tunisia	2
Ministry of Public Health	2
Uganda	1
Ministry of Health	1
NAC	
Ethiopia	1
Addis Ababa HIV/AIDS Prevention and Control office	1
Kenya	3
National AIDS Control Council (NACC)	3
Tanzania	3
National AIDS Control Programme	1
Tanzania Commission for AIDS	1
Zanzibar AIDS Commission	1
Other	
Ethiopia	25
Catholic Relief Services/CRS	1
CDC-Ethiopia	1
Concern Worldwide-Ethiopia	1
Ethiopian AIDS Resource Center	1
Ethiopian Hospital Management Initiative, Clinton Foundation HIV/AIDS Initiative	1
International NGO on HIV/AIDS	1
International Rescue Committee	1
International Training & Education Center on HIV Ethiopia (I-TECH Ethiopia)	1
Johns Hopkins University Bloomberg School of Public Health Technical Support for the Ethiopian HIV/AIDS ART Initiative (JHU-TSEHAI)	3
Medico Socio Development Ethiopia	1
Miz-Hasab Research Center	1
Pathfinder International	1
Population Services International (PSI)	1
Pro Pride Dire Dawa	1
Save the Children-UK	1
Twinning Centre	1
UNAIDS, Ethiopia	1

Participant Major Categories, Countries, and Organizations	Count
USAID	1
USAID/Ethiopia	1
Welfare for the Street Mothers and Children Organization (WeSMCO)	1
World Learning Ethiopia	1
Women's Information Services and Networks Organization (WINO)	1
World Vision Ethiopia	1
Ghana	1
Social Support Foundation	1
Nigeria	4
Family Health International, Nigeria, Sokoto Zonal Office	1
Family Health International	1
MEASURE Evaluation	2
Sudan	1
The Epidemiological Laboratory	1
Uganda	1
CDC-Uganda	1
USA	1
Johns Hopkins Bloomberg School of Public Health	1
Sponsor/Facilitator	**11**
Facilitator	
Switzerland	1
WHO	1
Sponsor	
Ethiopia	3
UNAIDS, Ethiopia	1
UNECA	2
USA	7
Humanitarian Information Unit, U.S. Department of State	1
MEASURE DHS	1
MEASURE Evaluation	4
USAID	1
Grand Total	**187**

Appendix II: Agenda

"Enlisting National Mapping Agencies in the Fight Against HIV/AIDS: Building Partnerships with Ministries of Health & Social Services and National AIDS Commissions"

April 27, 2009, UN Conference Center, Addis Ababa, Ethiopia, 9:00 to 18:00

Morning

9:00 Opening remarks

- Paul Belanger, GiSS/ISTD/ECA
- Aida Opoku-Mensah, Director, ISTD/ECA
- Roger Salla Ntounga, Country Coordinator and Rep. to the AU and UNECA, UNAIDS
- Dorina Maris, Technical Advisor, USAID

9:15 Setting the stage, purpose of workshop -- provides a conceptual framework for GIS work within data infrastructure. (John Spencer, MEASURE Evaluation)

9:30 – 10:30 Sessions (15 minute presentations, panel discussion at end of presentations with opportunity for questions from audience)

National Service Provision – Moderated by UNECA Representative

Patrick Naphini, Malawi, "Analysing geographic coverage of ART clinics using GIS: example of collaboration between several institutions in Malawi"

Benjamin Mayala, Tanzania, "Mapping Task Force Committee: Developing a Health Facility GIS database in Tanzania."

Shabani Cishahayo, Rwanda, "GIS applied to HIV/AIDS interventions monitoring: the case of Rwanda TRACnet System"

10:30 – 11:00 Break

11:00 – 12:00 Sessions Continue (15 minute presentations, panel discussion at end of presentations with opportunity for questions from audience)

Community Based Reporting – Moderated by UNECA or UNAIDS Representative

Bernard Mundia, Kenya, "Identifying priorities for improving the quality of routine community HIV and AIDS Information in Kenya

Miriam Babita, South Africa, "Using community mapping to profile HIV/AIDS incidence in South Africa: 1996-2007"

Ahmed Seid, Ethiopia, "The Use of GIS for Mapping HIV/AIDS Susceptible Areas in Addis Ababa, Ethiopia"

12:00 – 13:00 Wrap up and Summary of morning session

13:00 – 14:30 Lunch

Lunch includes networking opportunities for meetings with UNAIDS, MEASURE Evaluation, UNECA, ESRI, SALB and others.

AFTERNOON—Small Group Work

Building on the examples presented in the morning, participants will be separated into groups of 6-7 people. The groups will match NMA and MOH participants in their respective countries. Objectives for small groups will be directed by a small group worksheet and will include the following tasks:

1) MOH/NMA identify opportunities for collaboration
2) Group can identify constraints and issues and prioritize the top 5
3) Group can identity resources in the country (academia, commercial solutions, communities of practice) that can be beneficial to helping address the constraints or strengthening data infrastructure.

14:30 – 14:45 Introduction to small group work

14:45 – 16:00 Small Group Work

16:00 - 16:30 Break

16:30 – 17:30 Report out from groups

17:30 – 18:00 Wrap up, Summary, next steps

Appendix III: Welcome Presentation

Welcome NMA and Health Sector Partners!

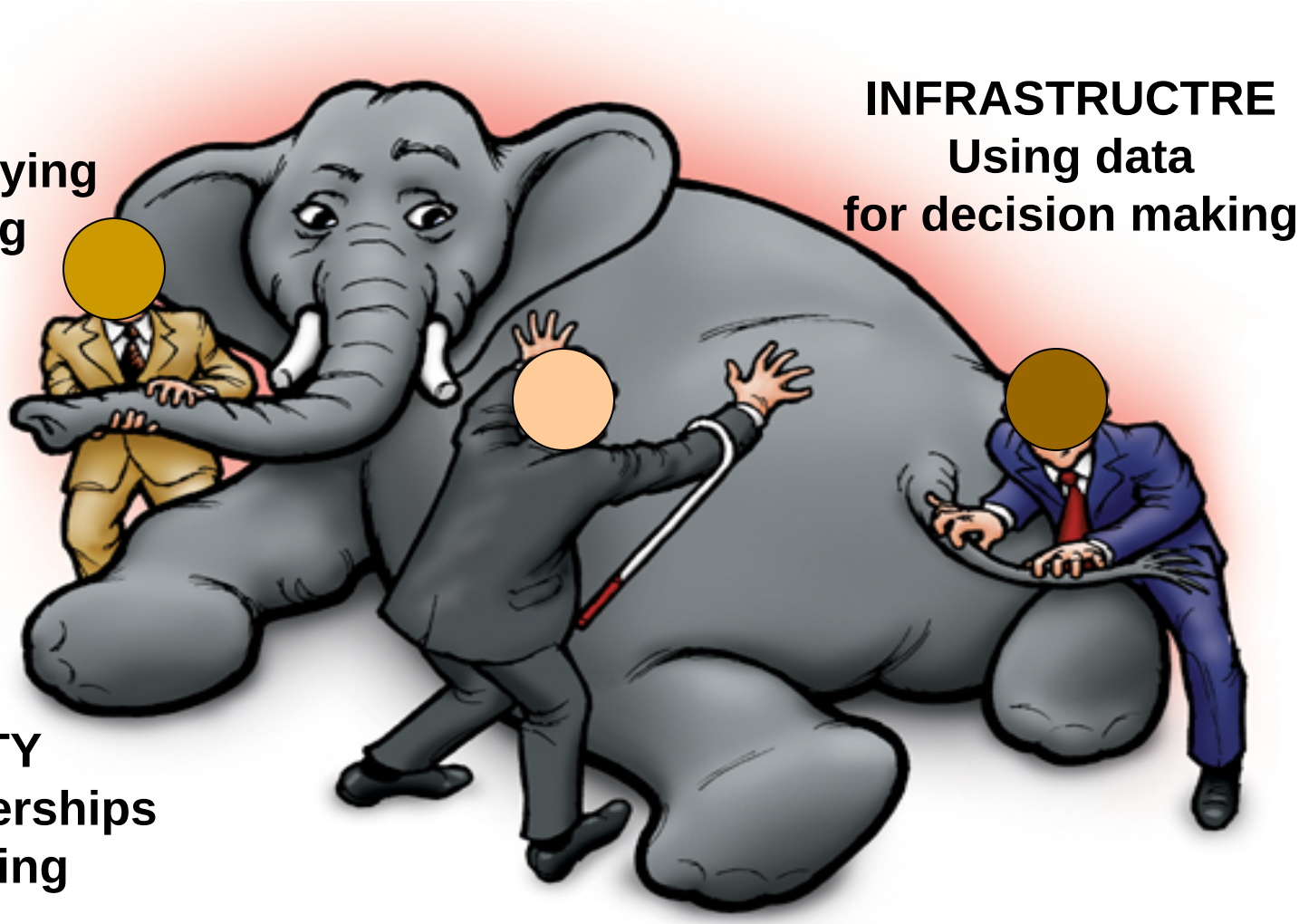
Addis Ababa, April 27, 2009

Dorina Maris, MPH – USAID Office of HIV/AIDS
Nathan Heard, PhD – PEPFAR Office of Global AIDS Coordinator
John Spencer, PhD – Measure GIS Working Group Team Lead

HIV/AIDS Pandemic – Measuring "Success"

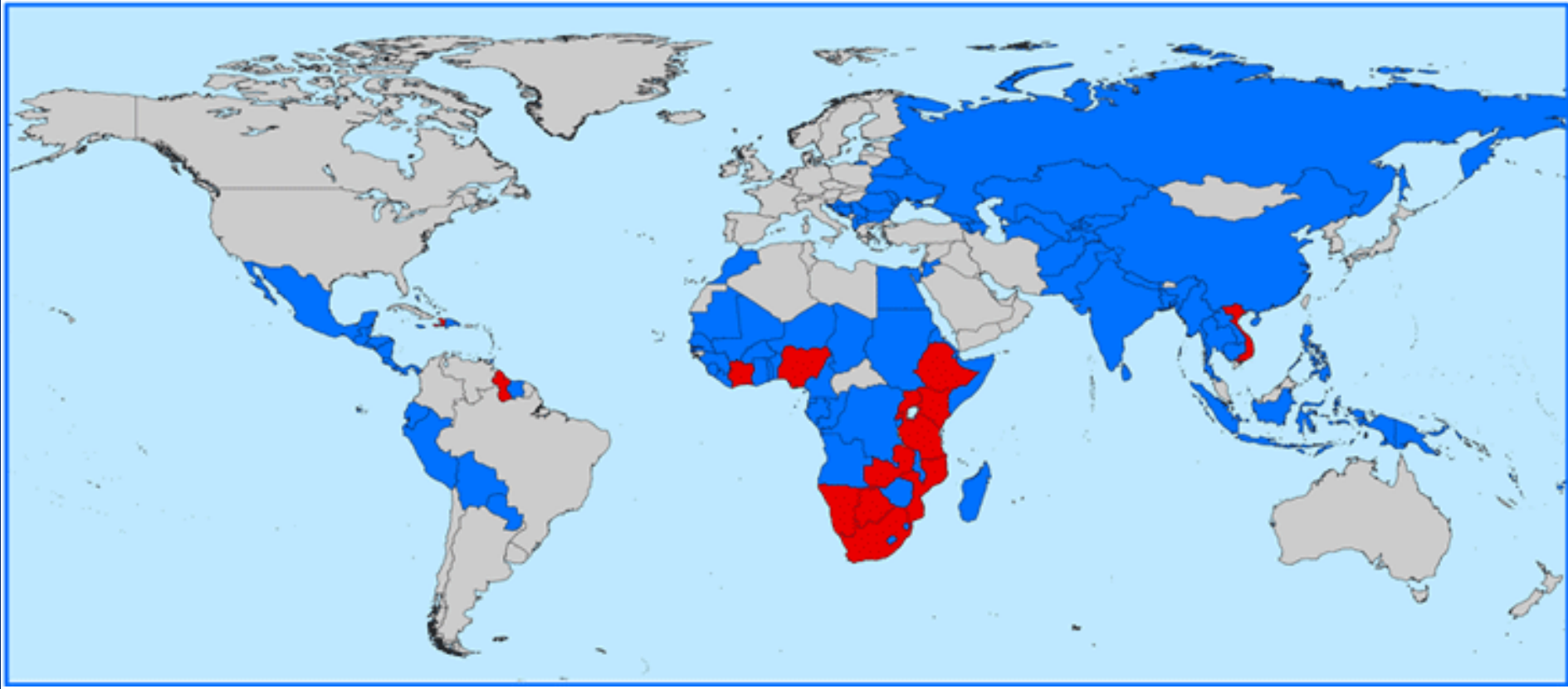
TOOLS
Collecting, verifying and analyzing data

INFRASTRUCTRE
Using data for decision making



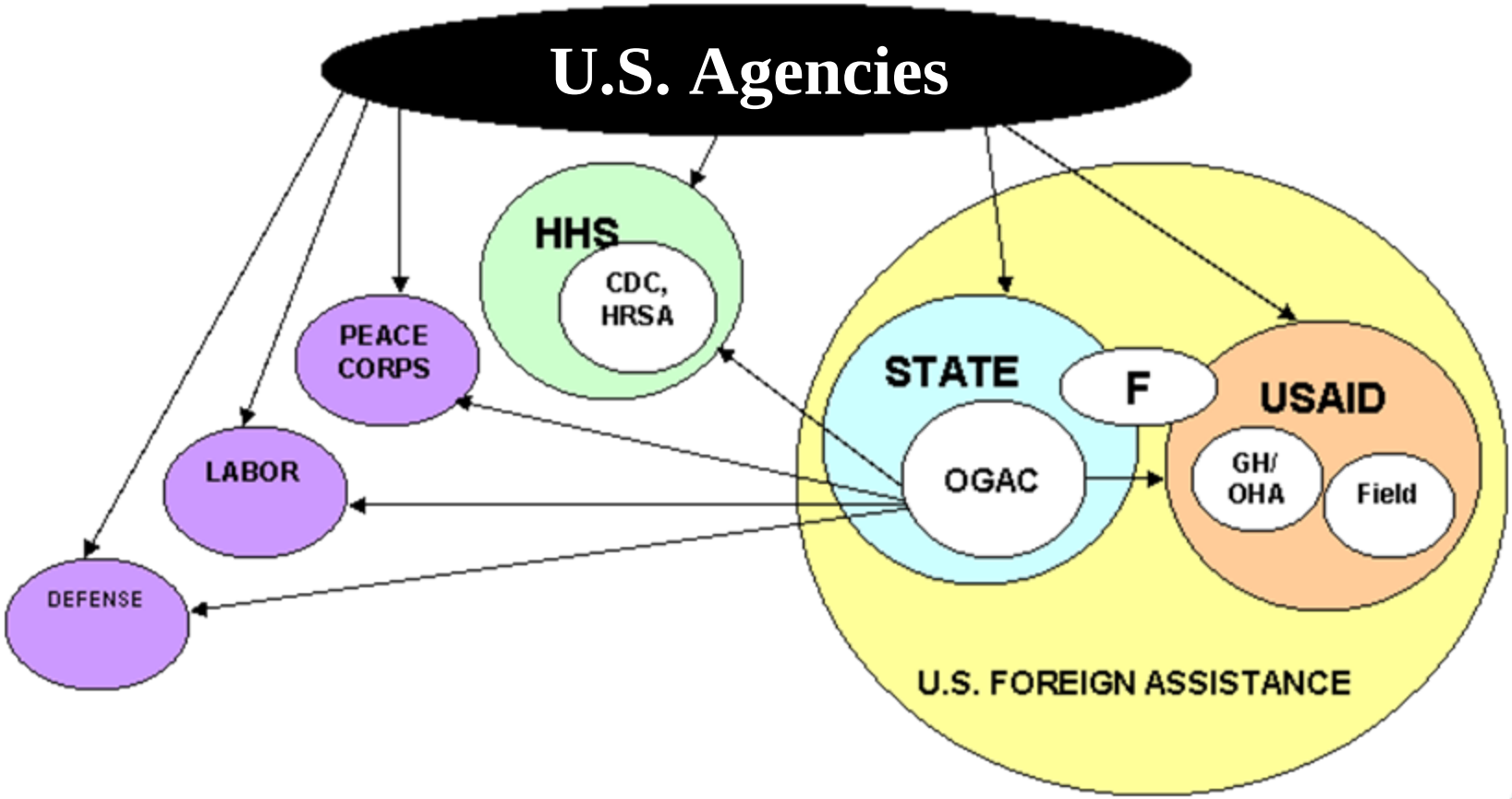
CAPACITY
People, partnerships and planning

U.S. President's Emergency Plan for AIDS Relief

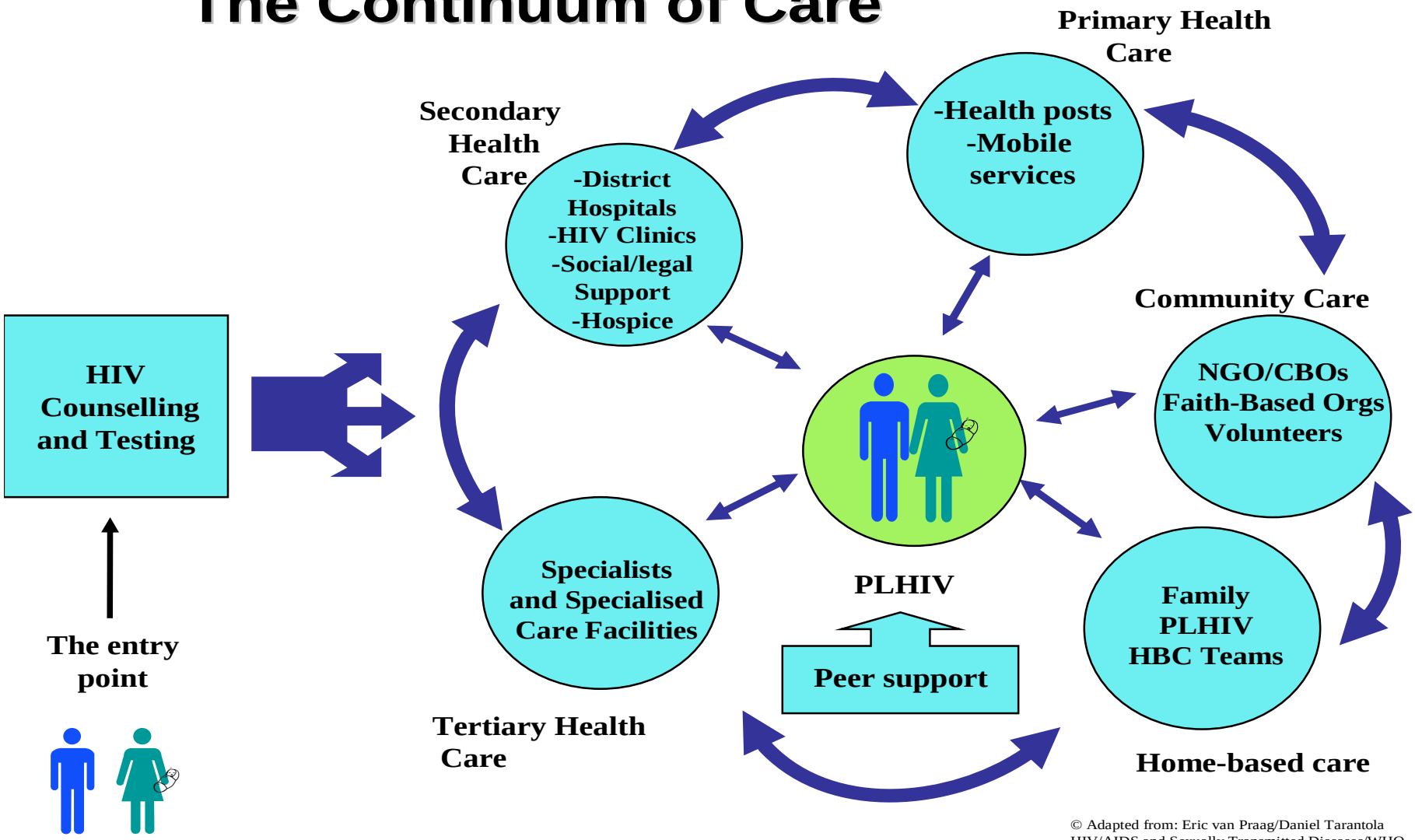


U. S. Government
International HIV/AIDS Activities
- Focus Countries
- Other U.S. Bilateral Efforts
- No Activities Present

PEPFAR Structure



The Continuum of Care



Fighting HIV/AIDS Worldwide:

"We are all sick because of AIDS – and we are all tested by this crisis. It is a test not only of our willingness to respond, but of our ability to look past artificial divisions and debates that have often shaped that response. When you go to places like Africa and you see this problem up close, you realize that it's not a question of either treatment of prevention – or even what kind of prevention – it is all of the above. It is not an issue of either science or values – it is both. Yes, there must be more money spent on this disease. But there must also be a change in hearts and minds, in cultures and attitudes. Neither philanthropist nor scientist, neither government nor church, can solve this problem on their own – ***AIDS must be an all-hands-on-deck effort."***

[Barack Obama, World AIDS Day Speech, Lake Forest, CA, 2006]

Acknowledgments

- **WHO:** Steeve Ebener
- **UNECA team**: Paul Belanger, Aida Opoku-Mensah, Chukudozie Ezigbalike, Yinka Adeyemi, Meron Kinfemichael, Girma Dessalegn, Leul Abebe, Elfinesh Tefera, Mesfin Ketema, Samson Kassa, Girma Woldemariam, Frehiwot Gebremeskel
- **UNAIDS team**: Christopher Fontaine, Roger Salla Ntounga, Abdoul Dieng, Bernadette Olowo-Freers
- **USG team, PEPFAR** – Measure GIS Working Group, OVC TWG
  - Office of Global AIDS Coordinator: Nathan Heard, Beverly Nyberg
  - Measure DHS: Andrew Inglis
  - U.S. Census Bureau: Robert Leddy
  - **MEASURE Evaluation: John Spencer, Libby Barron, Joni Bowling, James Stewart, Brooke McCauley**
  - USAID: Stella Goings/Africa Bureau, Dorina Maris/OHA

Conference Objectives

- Introduce international good practices from across CODIST community and non-health sectors,in use of geography to inform decision making and strategic planning
- Review lessons learned from national and international experience for possible adaptation by national programming and training strategies
- Highlight importance of standardization in local naming and coding conventions for geographic entities
- Promote innovative cross-sector exchanges in support of integrated, harmonized national spatial data
- Strengthen and expand regional and national partnership building opportunities with international, regional and local organizations

Welcome – Enjoy!

Linking Health and Mapping

John Spencer
MEASURE Evaluation
Pre-CODIST Workshop
April 27, 2009

USAID
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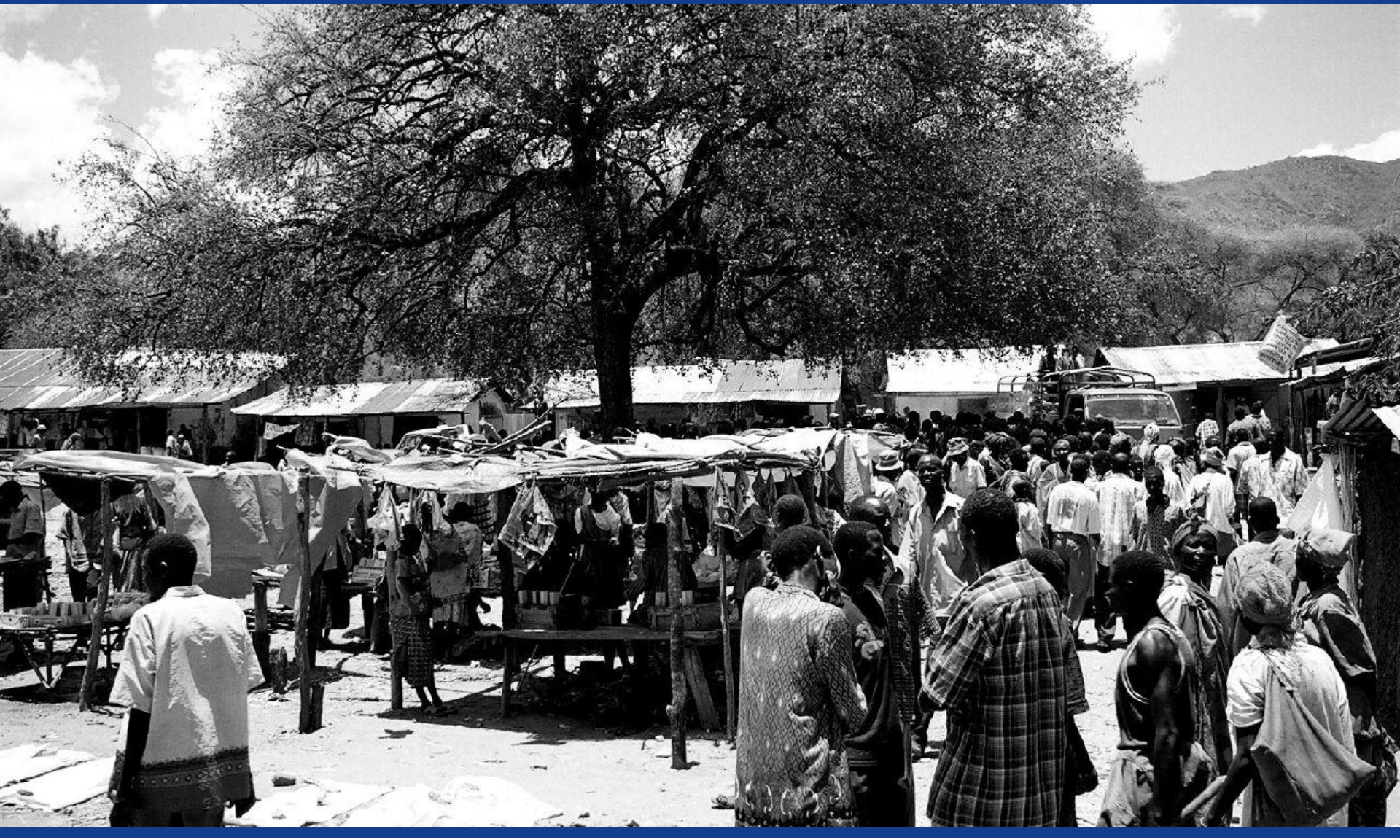
MEASURE
Evaluation

MEASURE Evaluation is funded by the U.S. Agency for International Development (USAID) through Cooperative Agreement GHA-A-00-08-00003-00 and is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership With Futures Group International, John Snow, Inc., Macro International Inc., Management Sciences for Health, and Tulane University. The views expressed in this presentation do not necessarily reflect the views of USAID or the United States government.



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MEASURE
Evaluation


PETITE


CONDOMS HERE

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Evaluation

Data

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Evaluation

Where?


UNITED STATES PRESIDENT'S EMERGENCY PLAN FOR AIDS RELIEF


UNITED STATES AGENCY INTERNATIONAL DEVELOPMENT
USAID
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Evaluation

Why?

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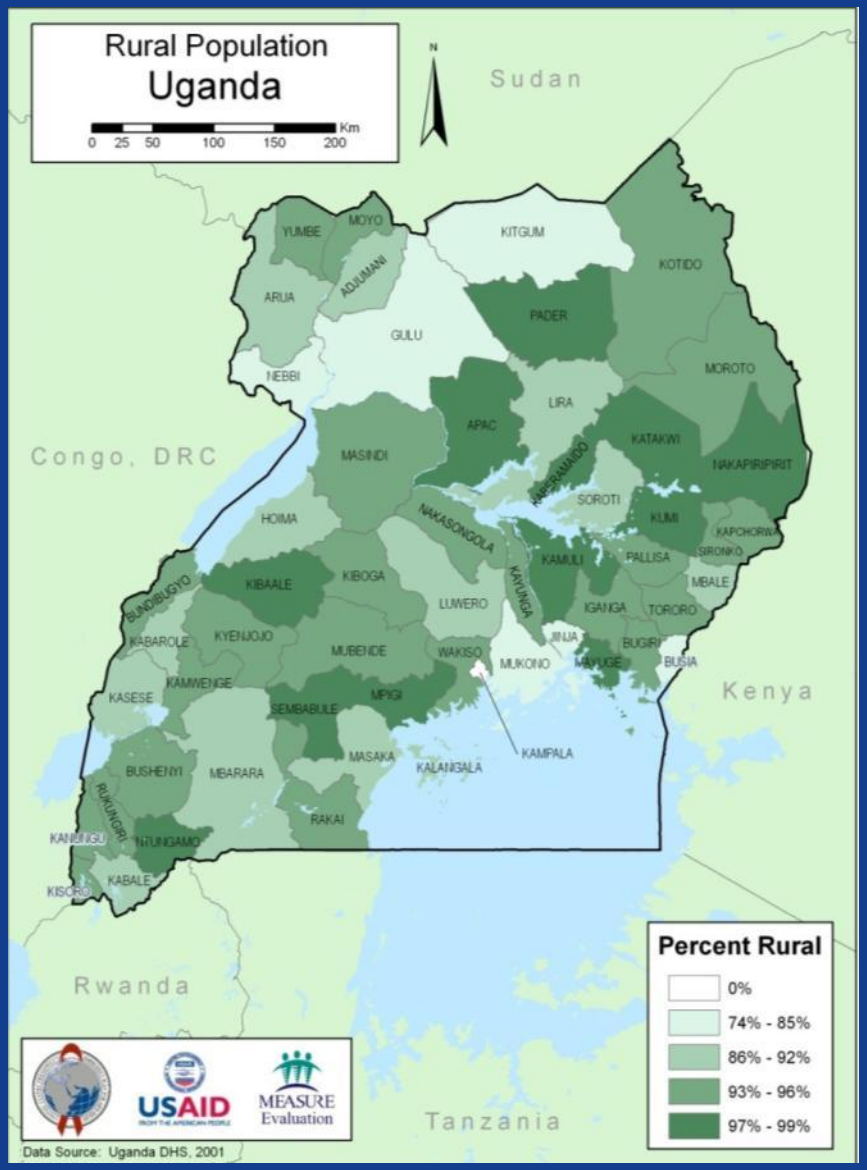
MEASURE Evaluation



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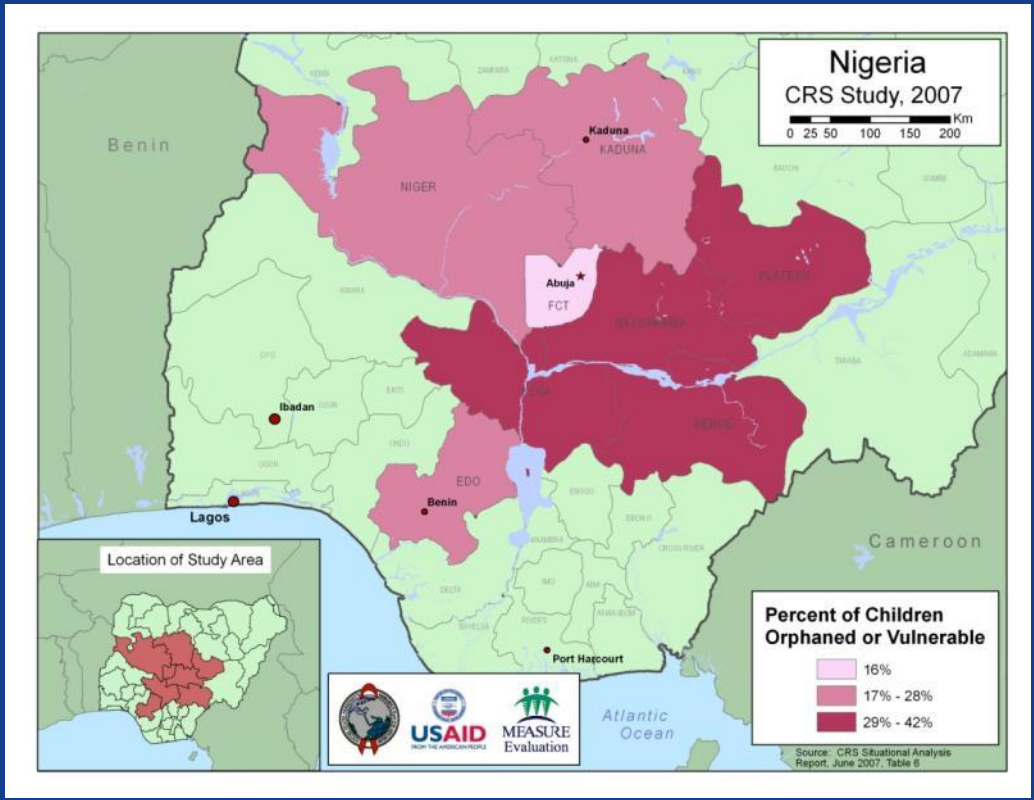
MEASURE Evaluation

Value of Mapping

- Provides insight into data
- Provides a way to link different data
- Can help improve data quality
- Picture worth 1,000 words



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MEASURE Evaluation

Barriers to using GIS and mapping for health

- **Health**
  - Resource constraints
  - Data
  - Others (to be uncovered today)
- **National Mapping Agencies**
  - Demand in areas other than health
  - Resources
  - Others

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MEASURE Evaluation

Spatial Data Infrastructure (SDI)

- Coordinated effort to develop spatial data for nation
  - GIS shapefiles
  - Human Capacity
  - Resources
- Health Sector has often been less prominent as other sectors (natural resources, utilities, other economic sectors)

Health Sector Data Can Fit into SDI

- Regular reporting of health data at different levels used for program planning and decision making
  - •Number receiving services
  - •Service Sites
  - •Variety of conditions
    - •HIV/AIDS
    - •Vaccinations
    - •Malaria
    - •Other acute conditions
    - •Routine Care
  - •Services Available
  - •People in need
  - •Supplies

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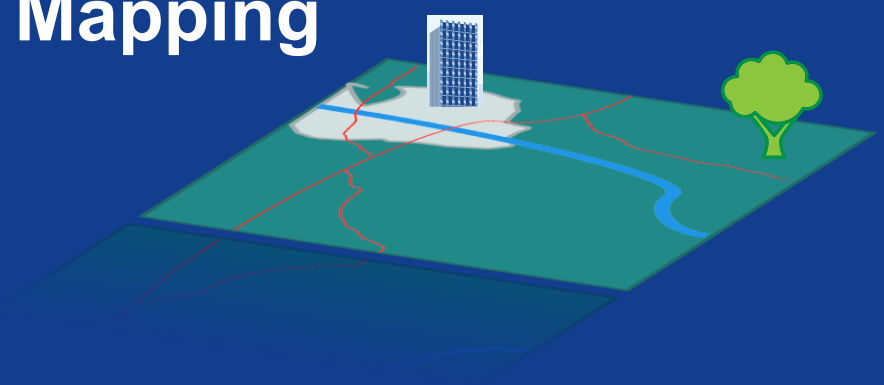
MEASURE Evaluation

Health and Mapping Sector Match

Health

- Who needs care?
- What care is being given?

Mapping



- Where infrastructure, people, natural features are

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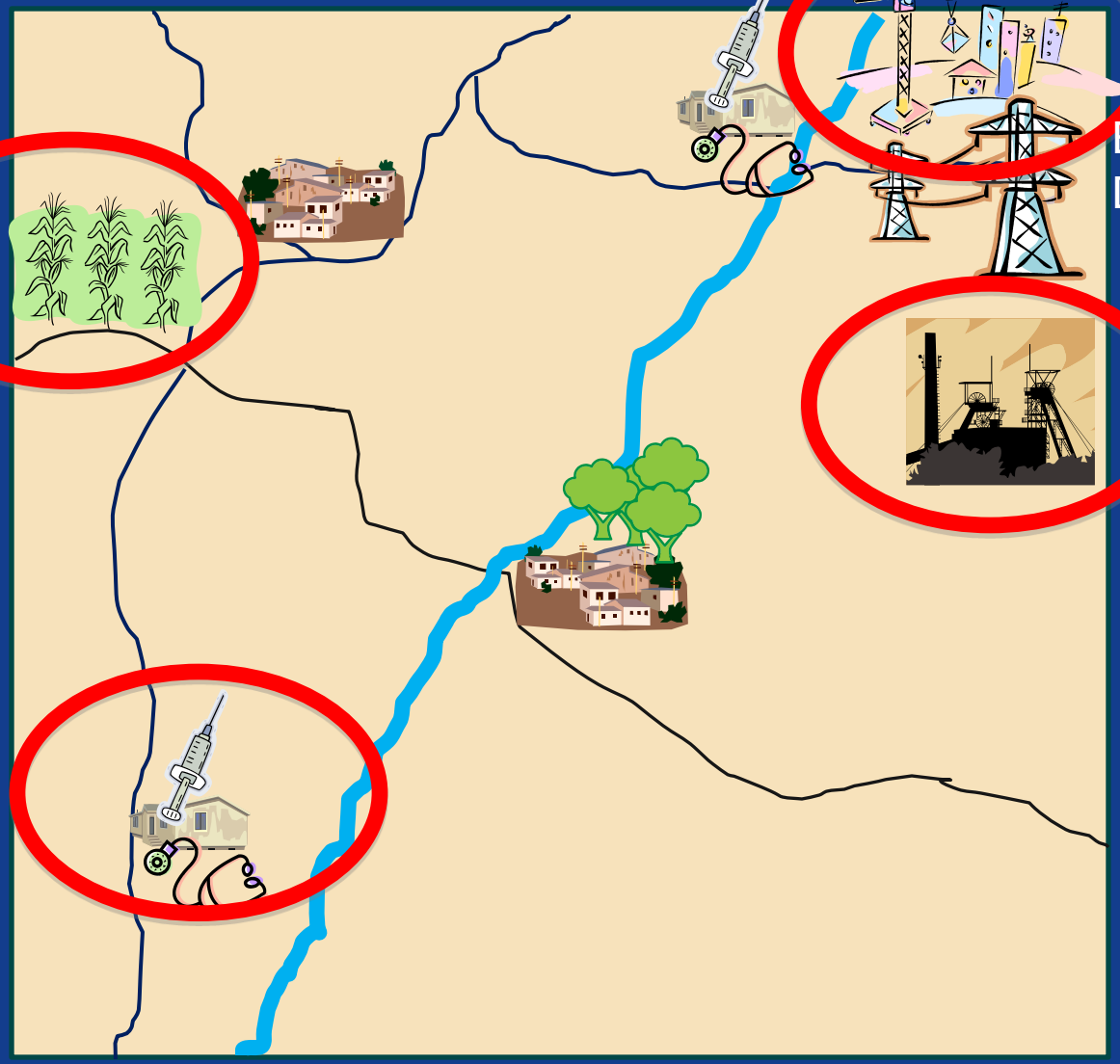
Agriculture

Economic Development

Natural Resources

Health Post



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MEASURE Evaluation

Objective of Workshop

- Are there opportunities for mapping and health sectors to work together?
- What are the challenges that keep this from happening?
- What are the resources in the country that could help with mapping in the health sector?

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Evaluation

Goal

- Build linkages between Mapping Agencies and Health Sector
- Identify challenges for effective use of data
- Start a discussion that can continue back home

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Evaluation

Appendix IV: Morning Session Presentation Slides

Analysing geographic coverage of ART clinics using GIS: example of collaboration between several institutions in Malawi

Patrick Naphini
Ministry of Health, Malawi

Pre-CODIST workshop
Addis Ababa, 27 April 2009

Co-authors

- W. Kafakalawa (National AIDS Commission, Malawi)
- O.D. Kondowe (Roads Authority; Malawi)
- I. Makwiza (Reach Trust; Malawi)
- K. Manda (National Statistical Office, Malawi)
- J. Mzembe (Survey Department and MAGIC; Malawi)
- C. Moyo and P. Naphini (Ministry of Health; Malawi)
- P. Fleming (University of Pennsylvania)
- S. Ebener (World Health Organisation)

➡ **Cross-sectoral collaborative effort**

Current HIV/AIDS situation in Malawi

Selected indicators (Estimate, [low estimate – high estimate])

- **Estimated number of Adults and children living with HIV (2007) [1]: 930,000 [860 000 - 1 000 000]**
- **Adult (15–49) prevalence percent (2007) [1]: 11.9 [11.0 - 12.9]**
- **Deaths in adults and children (2007) [1]: 68,000 [59 000 - 77 000]**
- **Orphans (0–17) currently living (2007) [1]: 550,000 [470 000 - 640 000]**
- **Number of ART sites (end 2008) [2]: 221 (170 Pub., 51 Private)**
- **Number of patients ever registered for ART (end 2008) [2]: 196, 368 (39% M , 61 % F)**
- **Number of patients alive on ART at the end 2008 [2]: 147,479**
- **Number of patients who started ART in 2008 [2]: 76,581**

[1] 2008 Report on the global AIDS epidemic, UNAIDS/WHO, July 2008.

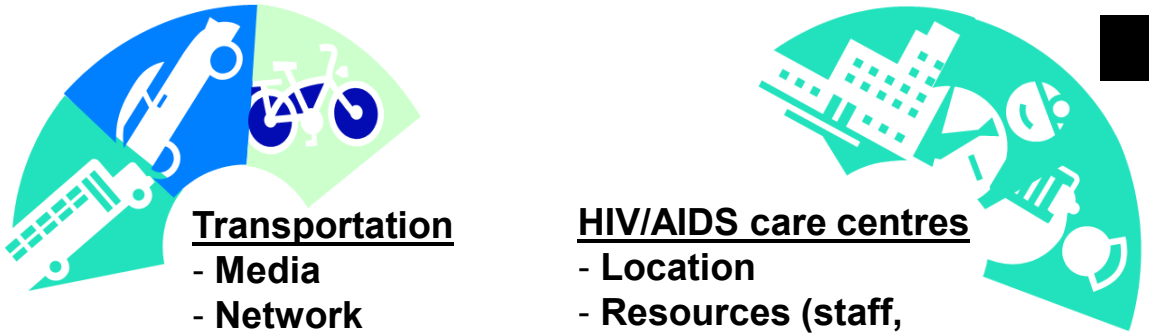
[2] Q4 report ART treatment

Importance of geography when fighting against HIV/AIDS

Making sure that peoples in needs of HIV/AIDS care are having access to it in an equitable way requires to know about:

Prevalence population
- Number
- Distribution

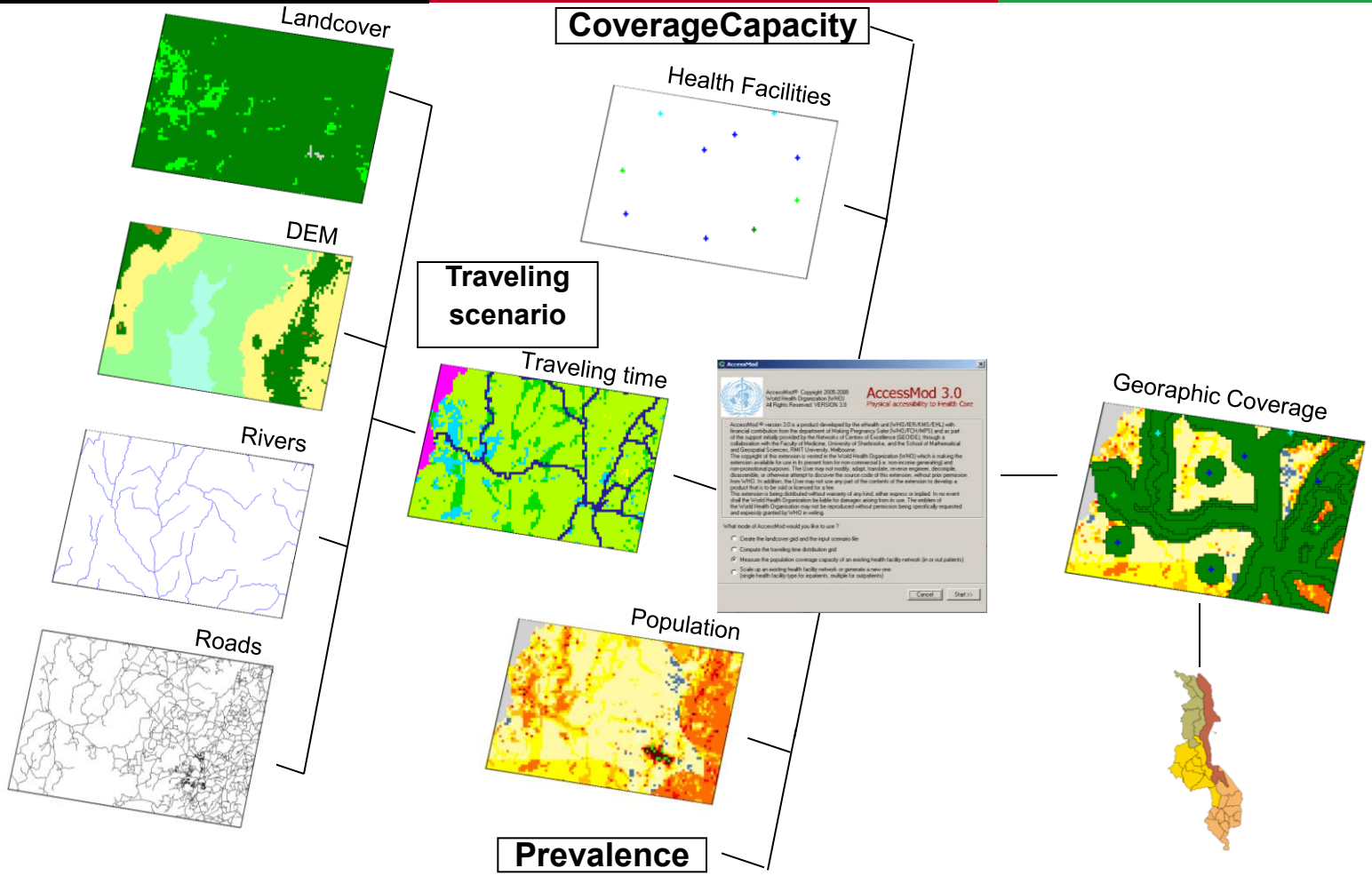
Condition
- Travel time
- Type of care



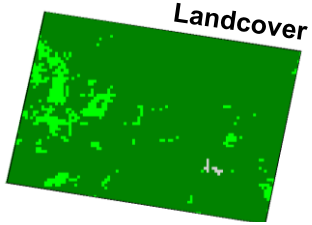
Transportation
- Media
- Network
- Environment

HIV/AIDS care centres
- Location
- Resources (staff, drugs, equipment)

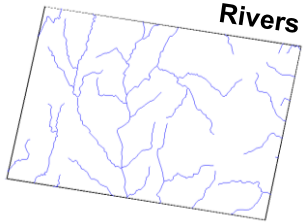
Importance of geography when fighting against HIV/AIDS



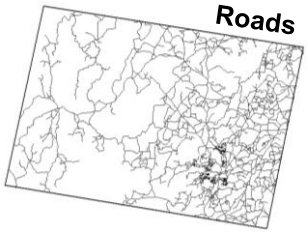
Challenges (2006)



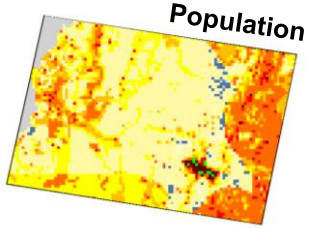
Survey Department
Forestry Department



Survey Department



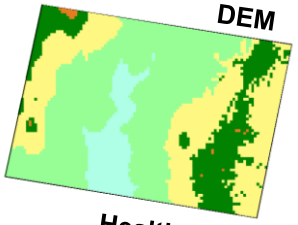
Survey Department
National Road Authority



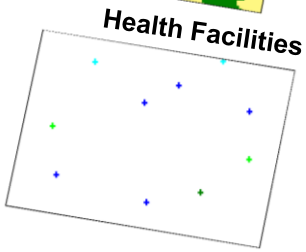
National Statistical Office

GIS capacity and technical expertise

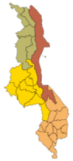
All



Survey Department



Ministry of Health
National AIDS Council
Local Government
National Statistical Office
CDC
.....



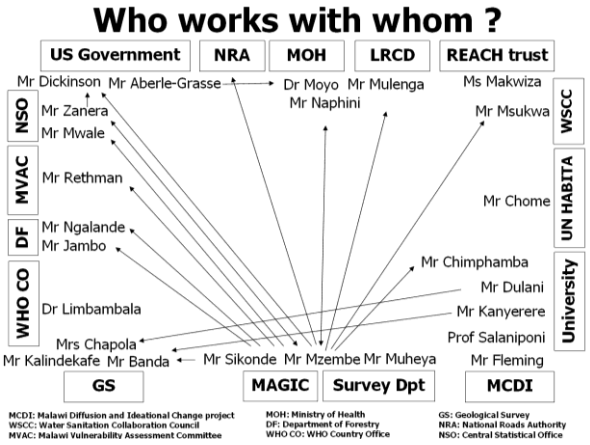
Survey Department

Prevalence

Ministry of Health
NAC
CDC
UNAIDS
...

Coverage Capacity

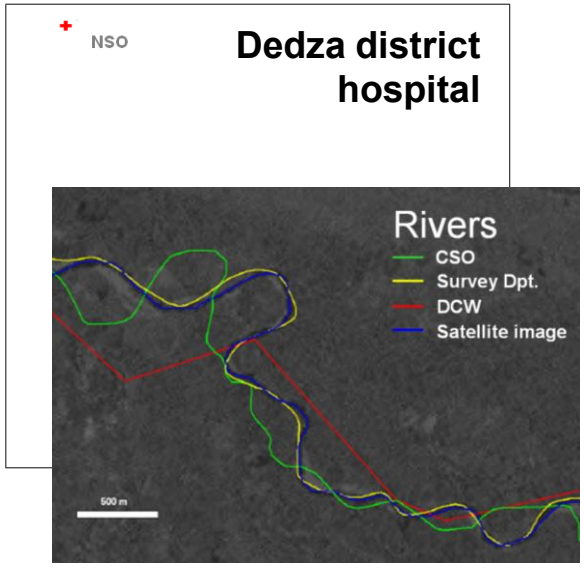
Challenges (2006)



- Mandates and capacities dispersed among several stakeholders
- limited or even a lack of communication and/or working relations between institutions producing health data and/or geographic information of interest in public health (MOH, NAC, NGOs, Survey Department, National Statistical Office (NSO),…),
- Several stakeholders not participating in the development of the National Spatial Data Infrastructure (NSDI) like for example the MOH

- lack of agreed upon data collection standards and protocols
  - existence of many different coding schemes that are not linked together,
  - very limited integration of the time dimension
- lack of awareness of the data, resources and GIS skills available in the country (e.g. from the academic sector),
- important competition for funding.

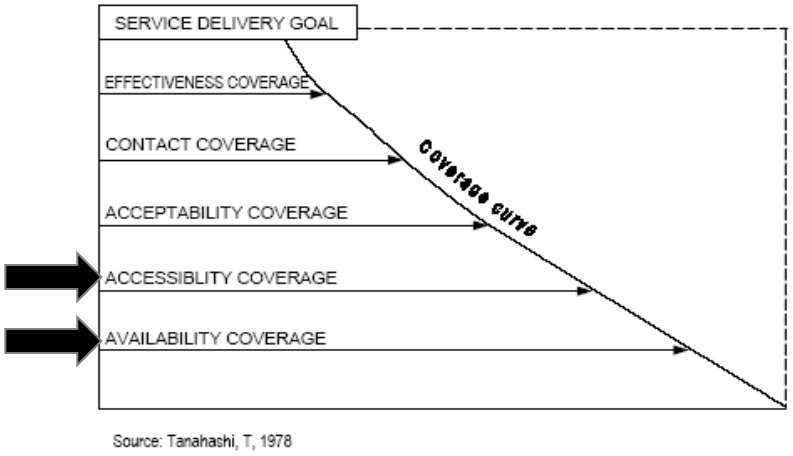
Challenges (2006)



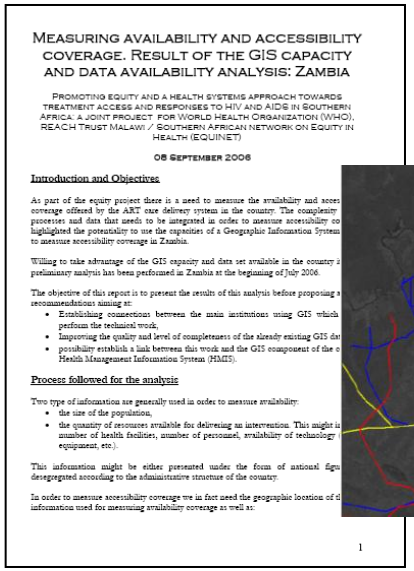
- **Duplication of efforts for the creation of datasets that are of questionable quality**
- **Important number of lost opportunities at that time:**
  - **NSO collected the location of the health facilities and schools in the context of the 2008 population census without collaborating with the Ministry of Health nor the Ministry of education**
  - **Existence of a course on medical geography at the University of Malawi unknown from the Ministry of Health**
- **Large park of specific hardware (e.g. large size printer, GPS devices) which is not frequently used**
- **Leveraging the existing capacity and data as well as improving the working connection between the stakeholders would benefit all and improve decision making**

The Equity project

"Promoting equity and a health systems approach towards treatment access and responses to HIV and AIDS in Southern Africa: a joint project for World Health Organization (WHO), REACH Trust Malawi / Southern African network on Equity in Health (EQUINET)"



Source: Tanahashi, T, 1978



MEASURING AVAILABILITY AND ACCESSIBILITY COVERAGE. RESULT OF THE GIS CAPACITY AND DATA AVAILABILITY ANALYSIS: ZAMBIA

PROMOTING EQUITY AND A HEALTH SYSTEMS APPROACH TOWARDS TREATMENT ACCESS AND RESPONSES TO HIV AND AIDS IN SOUTHERN AFRICA: A JOINT PROJECT FOR WORLD HEALTH ORGANIZATION (WHO), REACH TRUST MALAWI / SOUTHERN AFRICAN NETWORK ON EQUITY IN HEALTH (EQUINET)

08 SEPTEMBER 2006

Introduction and Objectives

As part of the equity project there is a need to measure the availability and acces coverage offered by the ART care delivery system in the country. The complexity processes and data that needs to be integrated in order to measure accessibility co highlighted the potentiality to use the capacities of a Geographic Information System to measure accessibility coverage in Zambia.

Willing to take advantage of the GIS capacity and data set available in the country preliminary analysis has been performed in Zambia at the beginning of July 2006.

The objective of this report is to present the results of this analysis before proposing recommendations aiming at:

- Establishing connections between the main institutions using GIS which perform the technical work;
- Improving the quality and level of completeness of the already existing GIS da
- possibility establish a link between this work and the GIS component of the Health Management Information System (HMIS).

Process followed for the analysis

Two type of information are generally used in order to measure availability:

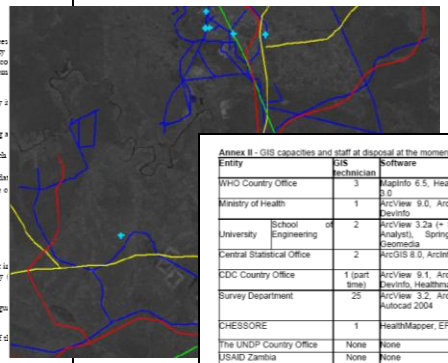
- the size of the population,
- the quantity of resources available for delivering an intervention. This might i number of health facilities, number of personnel, availability of technology equipment, etc.).

This information might be either presented under the form of national figu desegregated according to the administrative structure of the country.

In order to measure accessibility coverage we in fact need the geographic location of t information used for measuring availability coverage as well as:

1

GIS capacity and data availability assessment



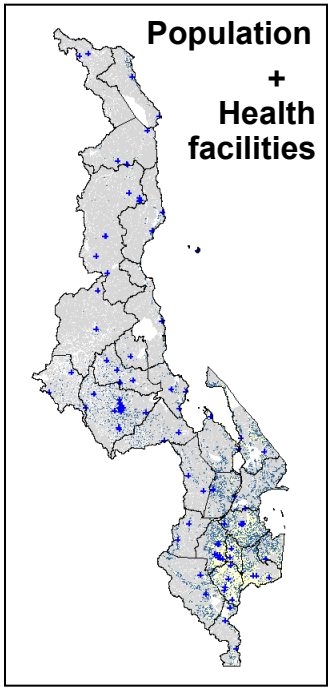
Annex II - GIS capacities and staff at disposal at the moment of the interview

Entity	GIS technician	Software	Special Hardware	Nbr of GPS
WHO Country Office	3	MapInfo 6.5, Healthmapper 4.3, EpiInfo 3.0	None	None
Ministry of Health	1	ArcView 9.0, ArcGIS 9.0, ArcInfo 9.0, DevInfo	A1 plotter	72 (one for each district)
University School of Engineering	2	ArcView 3.2a (+ Spatial, 3D and Image Analyst), Spring 4.2, ILWIS 2.2, Geomedia	2 A01 plotters, 1 A04 digitizing table, A4 scanner	(Trimbles)
Central Statistical Office	2	ArcGIS 8.0, ArcInfo 7.0, DevInfo	A1 plotter, A0 digitizing table	70 (Magellan)
CDC Country Office	1 (part time)	ArcView 9.1, ArcGIS 9.1, ArcInfo 9.1, DevInfo, Healthmapper, SIGEpi	None	None (to be purchased)
Survey Department	25	ArcView 3.2, ArcGIS 8.3, ArcInfo 8.3, Autocad 2004	A0 plotter, A0 Digitizing table	10 (6 trimbles, 6 Leica)
CHESSORE	1	HealthMapper, EPIInfo	None	None
The UNDP Country Office	None	None	None	None
USAID Zambia	None	None	None	None
Ministry of Works and Supply, Road department	2	ArcView 9, ArcGIS Desktop	None	9 (to arrive)
Total	37	12 different software	5 large size plotter, 3 large size digitizing tables, 1 small size scanner	3167

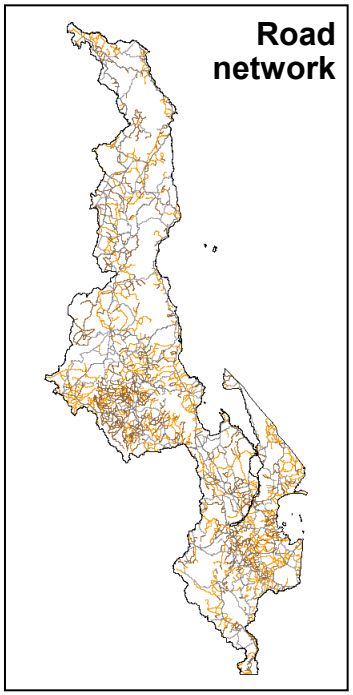
- Opportunity to go beyond the needs of the Equity project
- Propose a different collaborative approach

Collaborative work

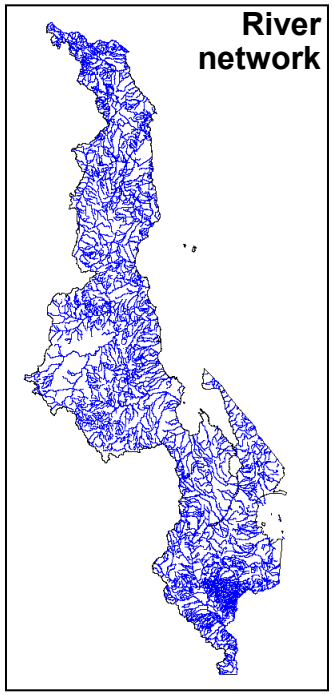
Collaborative efforts concentrated on 4 layers



NSO, MOH, NAC
CDC, U. Pennsylvania



Road Authority
Survey Department

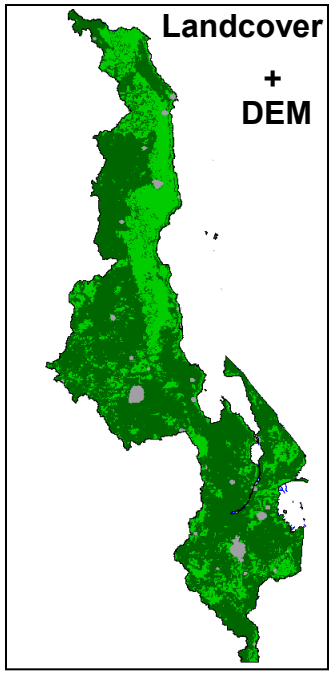


Survey Department

With WHO's support:

- compilation, cleaning, homogenization using satellite images
- resulted in an improved dataset

Results of the Equity project



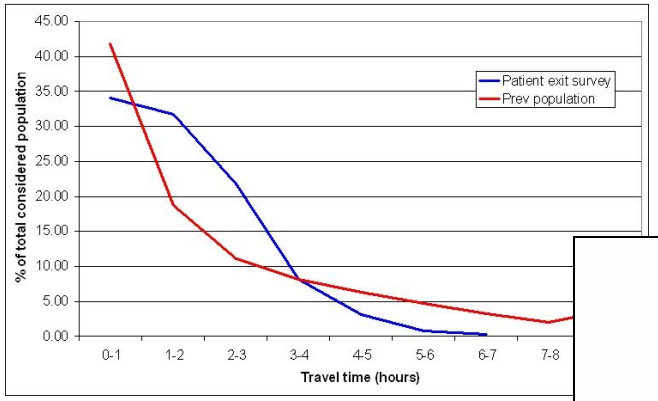
External sources

Survey data

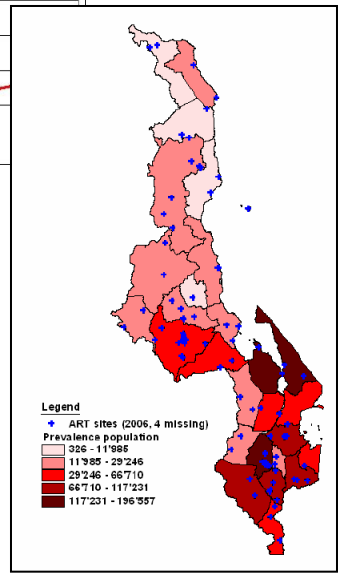
HIV prevalence

Reach Trust, DHS

Spatial distribution of the prevalence population and the ART patients compared to the location of the ART sites



Spatial distribution of the prevalence population not covered by the ART sites in 2006



Results would not have been possible without the collaboration !

Other benefits of the collaboration

- NSO used the layers to delimitate the Enumeration Areas for the 2008 population and housing census
- Better awareness of both tabular and spatial data existing in the country and provision of external data that could not be downloaded from the internet
- Better understanding of the needs for data of good quality to achieve data compatibility
- Better connection between the different institutions part of the exercise and among sectors (government, NGO, academic sector)
- Improved link with the international community
  - contribution to the development of the Malawi Spatial Data Standards document
  - connection between the group and external institutions doing work in Malawi
- Better awareness and involvement of the health sector in the development of the National Spatial Data Infrastructure (NSDI)
- Saved money !

What should/could be next ?

- organizing regular meetings of the group and include other institutions in the discussions
  - ➡ Find a local champion
  - ➡ Include donors for a more coordinated approach towards funding
  - ➡ Institutional arrangements and awareness raising at policy level
- receiving more advanced training in the management of spatial data, as well as analysis with spatial data (transfer of the methods)
- Making the data more accessible to reduce duplication of work
  - ➡ Importance of metadata
  - ➡ Establishment of a one stop information center
- establishing mechanisms ensuring a regular update these layers (still don't have the location for all the ART sites)
- improving the sharing of existing equipment (i.e. GPS devices)
- applying the approach to other services in and beyond health

Conclusion

NSDIs should actually been build to solve real problems (e.g access to HIV/AIDS care) and not necessarily technical problems:

- **Facilitate the involvement of the policy level and donors**
- **Health can be the context which support the development of an NSDI**
- **The exercise presented here illustrates the benefits that might result from a collaborative efforts driven by health**
  - **still at its early stage**
  - **facilitated by external partners**
  - **need to learn from other experiences and find resources to move forward**
- **Should nevertheless already encourage other countries to look at the same type of synergies**

http://www.who.int/whosis/database/gis/salb/countries/MWI/GIS_HIV_AIDS_MWI.htm

Committee on Development Information Science and Technology (CODIST)

NIMR

Mapping Task force Committee: Developing a health facility GIS database in Tanzania

Benjamin K.Mayala

National Institute for Medical Research (NIMR), Tanzania

27 April, 2009

Outline

- Introduction
- Existing situation
- Problem
- Objective
- Method
- Goals Achieved
- Unique Code

Introduction

- There are various organizations carrying out health facilities mapping in Tanzania
- It is complex
  - Understanding the extent of health facilities mapped
  - Equipment and tools used
  - Skills
  - Accessing the available health facility coordinates

Existing Situation

- There are Multiple Health Facility data source
  - Difficult to obtain list at one source
  - No comprehensive facility list
- Each source has its own facility list

Problem

- No clear link
  - difficult to know who is doing what
  - duplication of facility mapping activities exists.
- No standard coding system
- Naming
  - Spelling Mistakes,
    - Sources can name the same facility differently
- HF_ Type not well specified
  - Dispensary
  - Health Centre
  - Hospital

NIMR

For example

NMCP	NIMR	MEDA	HMIS
Lumbe disp	Lumbe	Lumbe dispensary	Lumbe dis
Amana Hosp	Amana	Amana Hospit	Amana Hospital
Kaliua HC	Kaliua H/C	Kaliua Health Centre	Kaliua H/Centre

Objective

- Harmonize the mapping activities carried out by various sources
  - **Specifically**
  - Establish comprehensive list and assign unique codes (ID) for each health facility

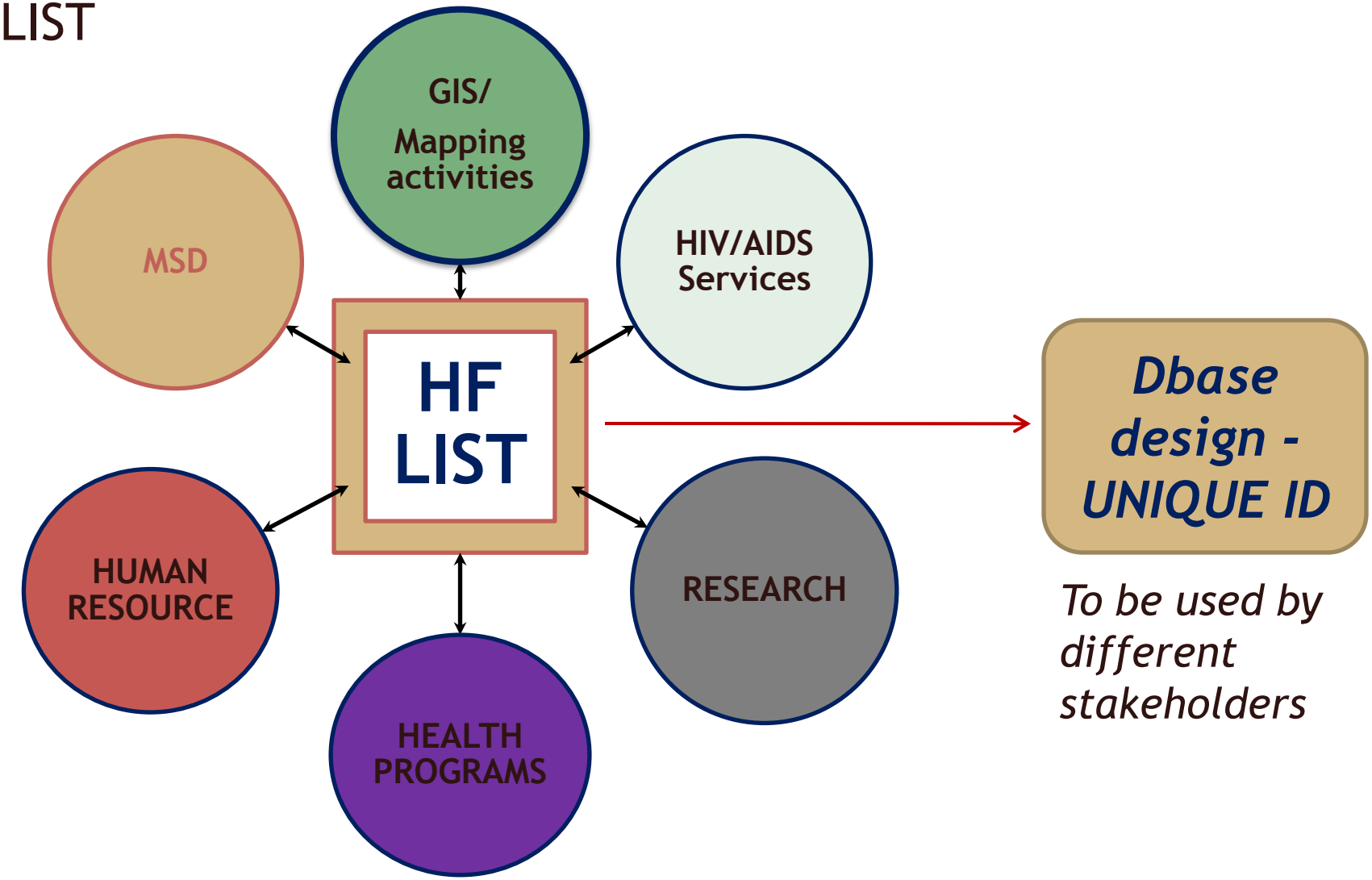
Method

- Identified stakeholders
- Compile list
- Health facility GIS database design
  - Link with HIV services.
- Test usefulness using data for two regions was used

Method Cont…

NIMR

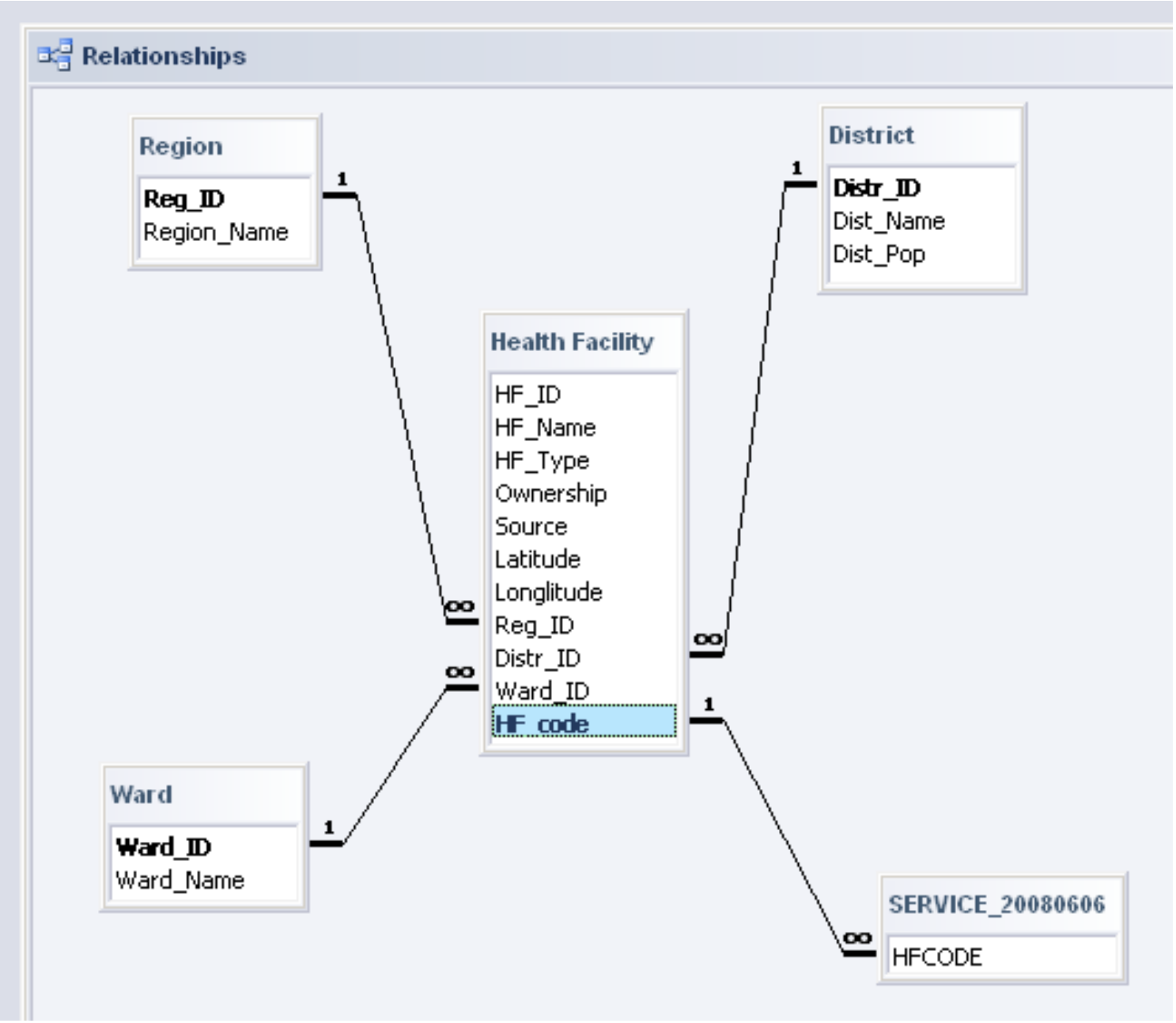
Multiple Sources - form the HF LIST



Goals Achieved

- List of all facility (public and private) established
  - Of the 5800 facilities
    - 3180 (55%) have their geographical locations
- Schema of the database

NIMR


Relationships
Region
Reg_ID
Region_Name
District
Distr_ID
Dist_Name
Dist_Pop
Health Facility
HF_ID
HF_Name
HF_Type
Ownership
Source
Latitude
Longlitude
Reg_ID
Distr_ID
Ward_ID
HF_code
Ward
Ward_ID
Ward_Name
SERVICE_20080606
HFCODE
1
∞

Unique Codes

- Why Unique

- **Eliminates duplication**

- **Integration of data**
  - Different facility-based datasets can be merged

- Create integrated National Health Database

Proposed Unique ID

- **RRDD_H*MMM*I**
  - **RR -** Region codes allocated by NBS.
  - **DD -** District codes allocated by NBS.
  - **_H -** Separator and sector, e.g. H for Health
  - ***MMM* -** MTHUHA (HMIS) number allocated by DMOs
  - **I -** Identifier for Health Facility type (
    - ***D*** for dispensary,
    - ***C*** for health centre
    - ***H*** for Hospital

- **0102_H324D**

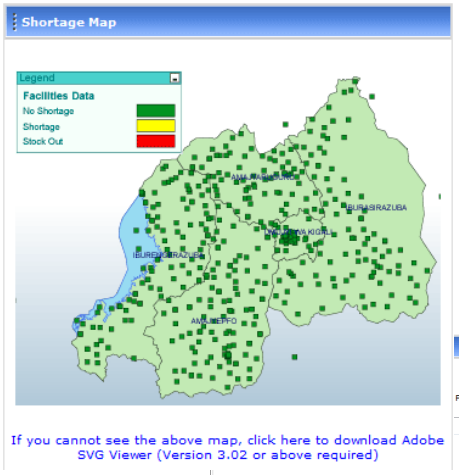
NIMR

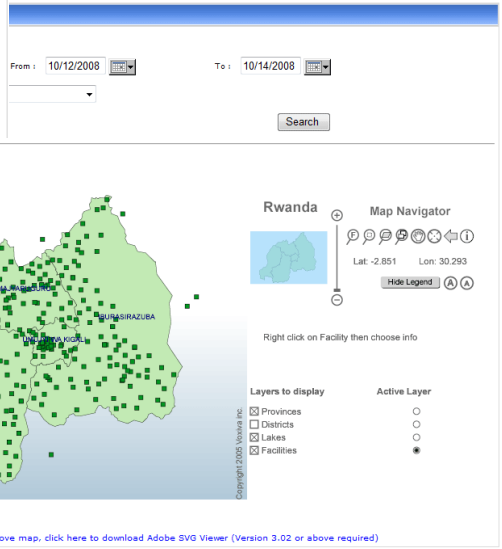
END

THANK YOU

GIS applied to HIV & AIDS program monitoring:

Case of TRACnet System





By Shabani CISHAHAYO

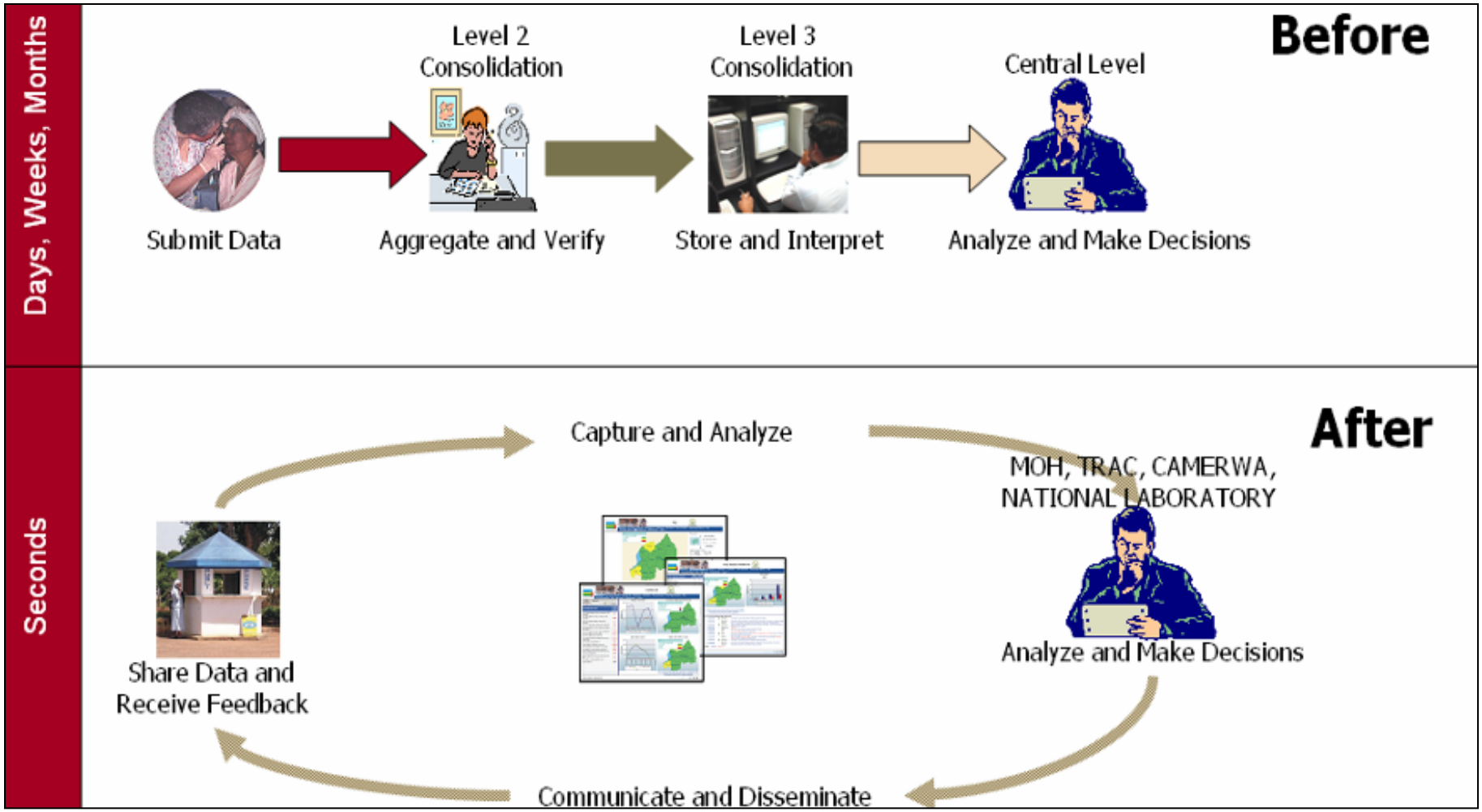
Background

- Monitoring of what is happening in health services and HIV/AIDS treatment is essential for assessing challenges and providing a targeted response to improve availability and quality of care & treatment;
- Rwanda TRACnet System is a national central database of HIV and AIDS-program information to deliver real-time HIV information for decision-making.

Logic frame

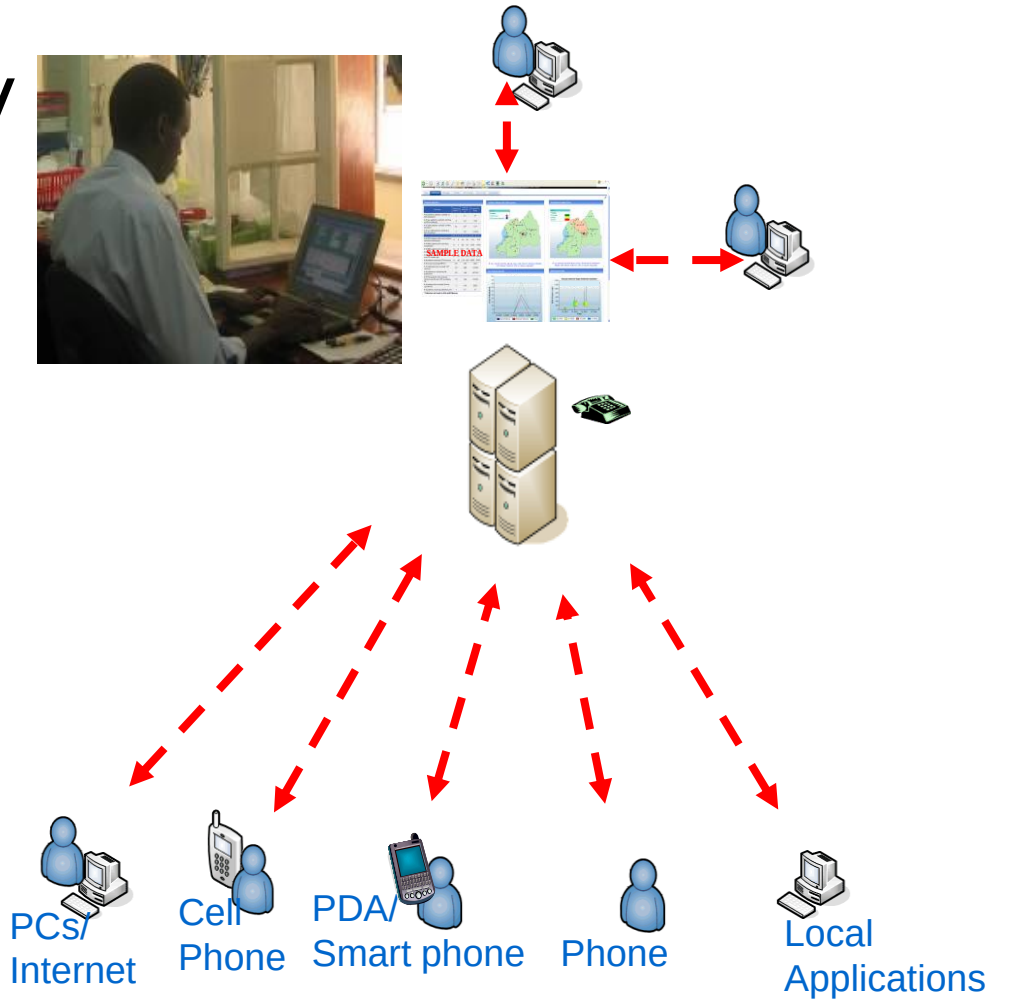
"Apply technology to process disease information which supports decision-making and guide work processes (public health actions) in order to accomplish the TRAC *Plus* mission"

TRACnet : how it works?



TRACnet: innovative solution for HIV/AIDS program monitoring

- Multi-channel dynamic Information Technology solution;
- Designed to: collect, store, retrieve, display, and disseminate critical program information, drug distribution, and patient information related to the care & treatment of HIV /AIDS.



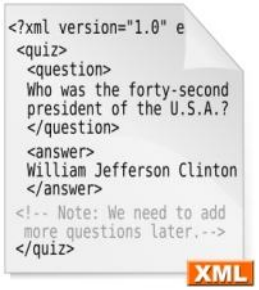
Multi-channels for data entry

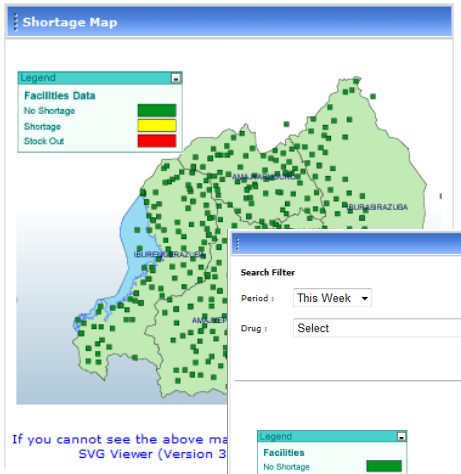
TRACnet main modules

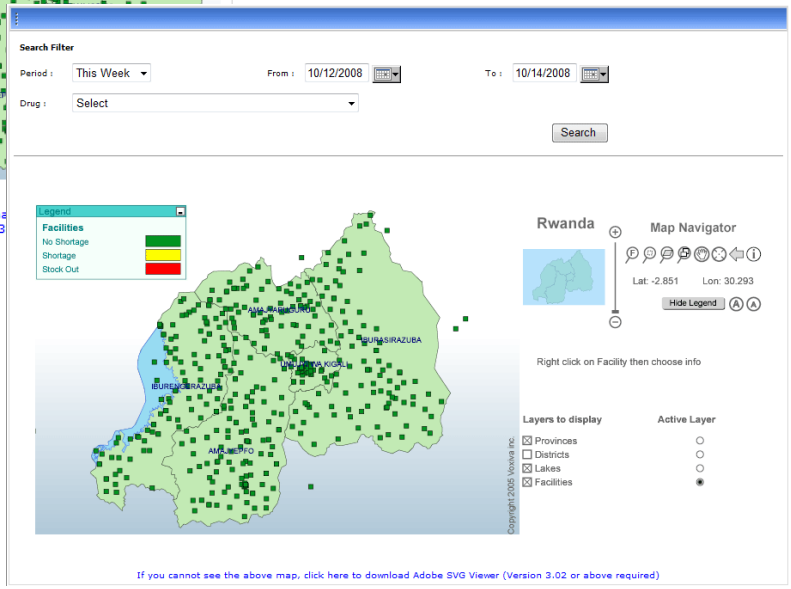
- Reporting of ART program indicators
- HIV Patient registration
- Monitoring of critical consumables and drugs
- Facilitating access to laboratory results

Maps - Technology

- Information about position (Latitude and Longitude for facilities/places)
  - Geographic areas information



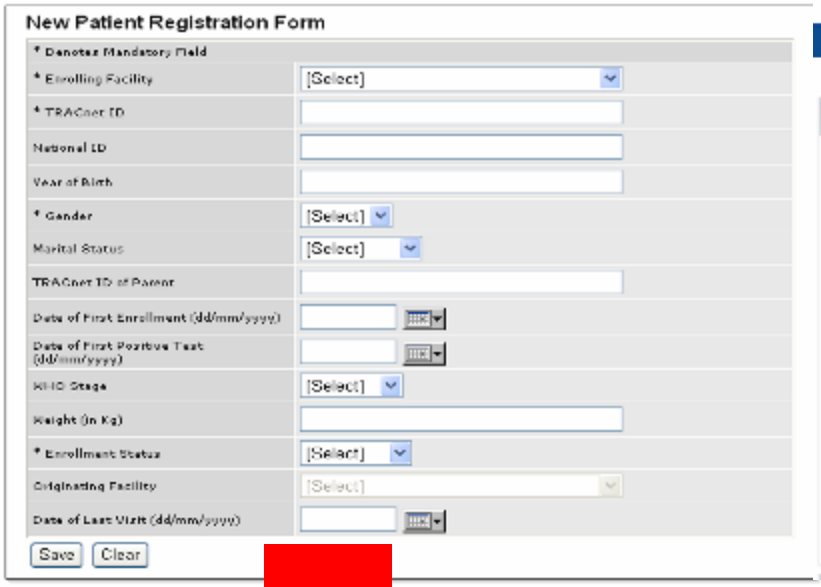


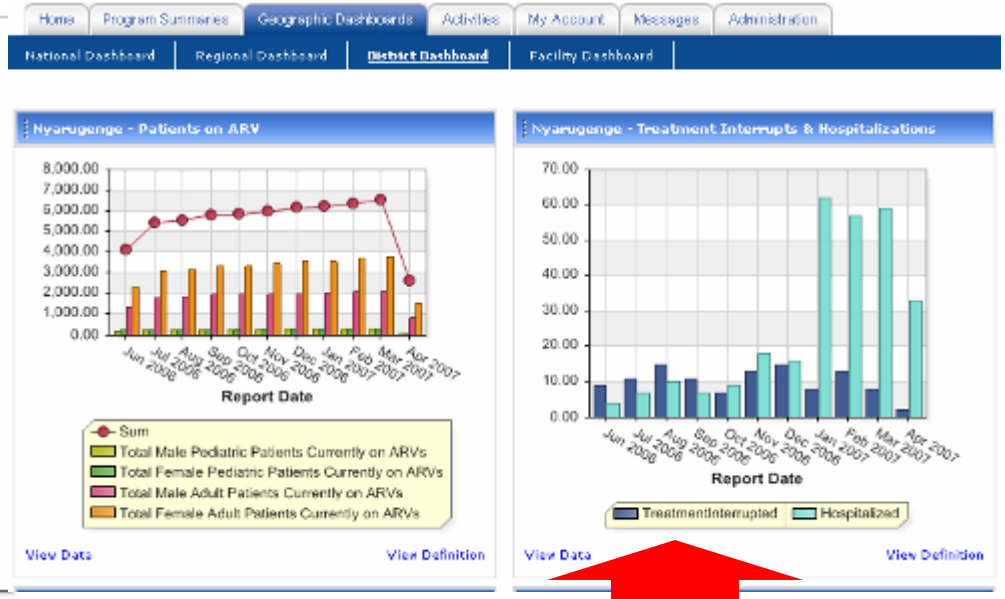


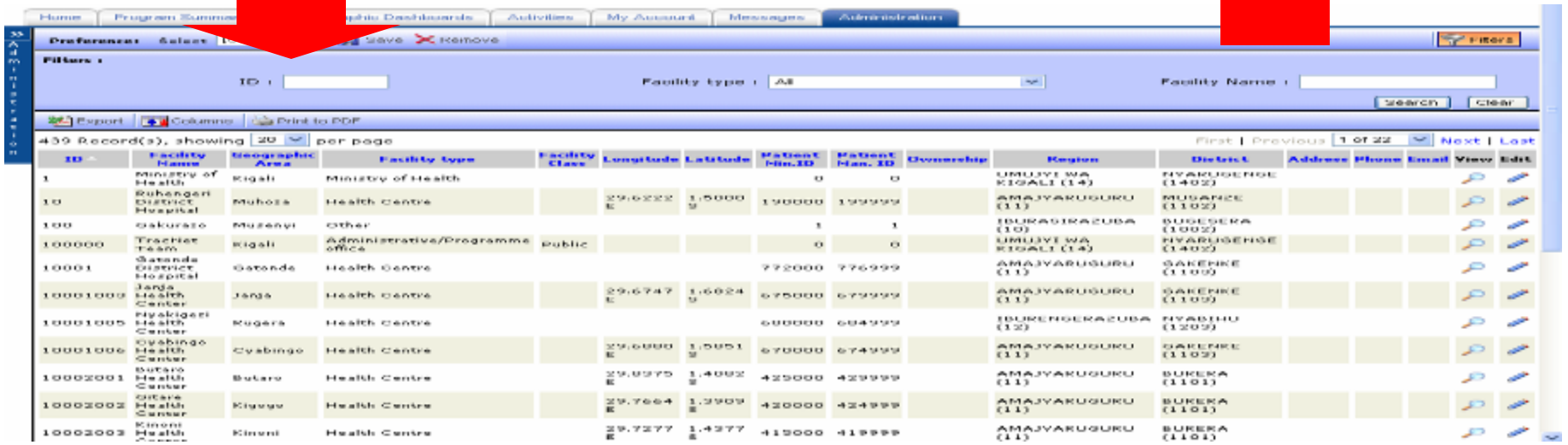
SVG

Map Engine

Forms, database, dashboards







Decision Support Dashboards

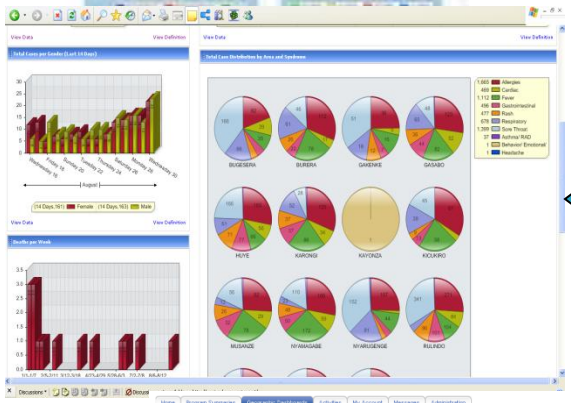
As soon as data is in the system, supervisors at multiple levels view and analyze data in real-time via a web-based dashboard.

They can:

- Review and approve reports
- Track new reports
- Map and analyze data
- Track and manage people.

They can use communication tools to send alerts and broad-cast messages out to the field.

National



District

Facility

TRACnet achievements

- Coverage: deployed in all 196 health facilities offering ART
- Trained Personnel: over 1,000 site-level users have been trained and are using the system to submit weekly and monthly reports
- The level of savings in term of costs and time realized as a result of adopting this system: the system has decreased the time required to report, compile and analyze HIV/AIDS data (a week, several weeks….→ now info is sent instantly-online system).

TRACnet evaluation and challenges

- Evaluations
  - 1st evaluation conducted in November 2006- some key findings :
    - "general under-reporting from sites for all modules"
    - "most commonly identified data error was duplicate reporting"
  - 2nd TRACnet evaluation is being to be initiated

    (process underway)
- Main challenges
  - Lack of well skilled human resources espicially at the decentralized level
  - Lack of power and poor IT& telecom infrastructure for Internet connectivity in most rural zones
  - Insufficient skills and knowledge in disease data analysis and use at health-facility level

TRACnet roadmap

- Expand TRACnet to all HIV/AIDS related services (VCT, PMTCT…) and to other infectious (and later non-communicable diseases) by implementing an Integrated Disease Surveillance System;
- Ensure data quality, provide feedback and support the data use at the decentralized level;
- To build capacity at all levels for the system sustainability.

www.tracnet.rw or

 3456 *(toll-free)*

Identifying Priorities for Improving the Quality of Routine Community HIV and AIDS Information in Kenya

CODIST Workshop, United Nation Conference Centre, Addis Ababa, Ethiopia,

April 27-May 1, 2009

Ben Mundia

M&E Specialist, National AIDS Control Council

COBPAR System Background

- Community Based Program Activity Reporting (COBPAR) was developed in September 2005 and rolled out in July 2006
- COBPAR is commissioned by NACC and is expected to be used by all organizations implementing community-based HIV/AIDS programs in Kenya
- The COBPAR web-based database houses all of the data collected and is updated on a quarterly basis

COBPAR Program Activities

1. Prevention of New Infections
   - Behavior Change Communication IEC/Condoms
   - Community Outreach
2. Improvement of Quality of Life
   - Home and Community Based Care (HCBC)
   - Protection of Legal/Human Rights of PLWHIV
   - Anti-Retroviral Therapy (ART)
3. Mitigation of Socio-economic Impact of HIV/AIDS
   - Community Empowerment (OVC)
   - Food Security
   - Livelihood and Social Security
4. Support Services
   - Capacity Building and Advocacy

Training in GIS

- M&E and MIS Officers were trained in the following skills:

  - Geo-coding
  - Template construction
  - Database linking
  - General GIS functions
  - Map creation and formatting
  - Map interpretation

Mapping and COBPAR

Maps were generated to visualize and understand the following :

- Population in need
- Availability of services
- Service utilization
- Reporting rates among service providers

Mapping: Spatial Data

- Shape maps of Africa and Kenyan administrative units at the community level
  - Provinces
  - Districts
  - Constituencies

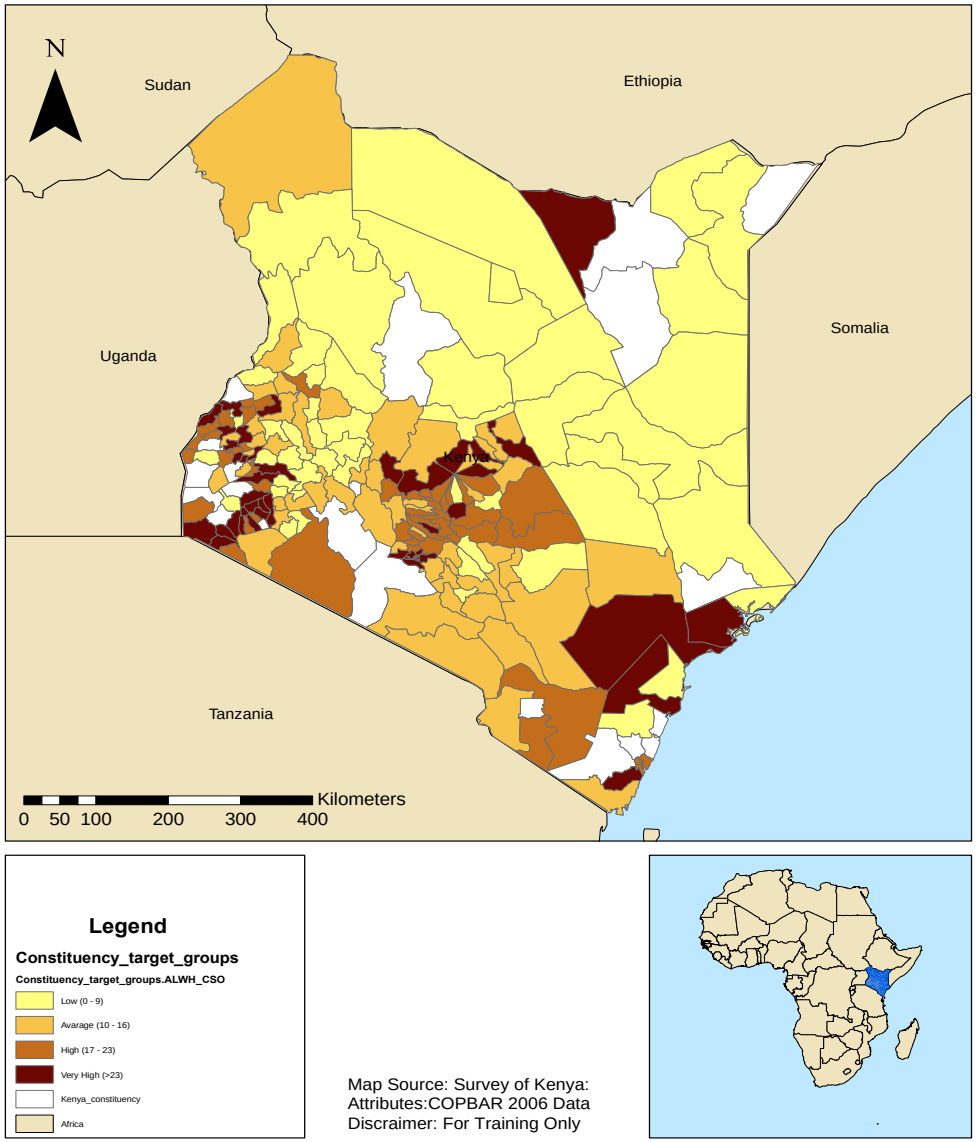
Mapping: COBPAR Database

- Attributes
  - # of CSOs
  - # of CSOs providing interventions the target PLHWA
  - # of PLHWA enrolled in home based care (HBC)
  - # of PLWHIV provided with HBC services
  - # of HBC service providers

COBPAR Data

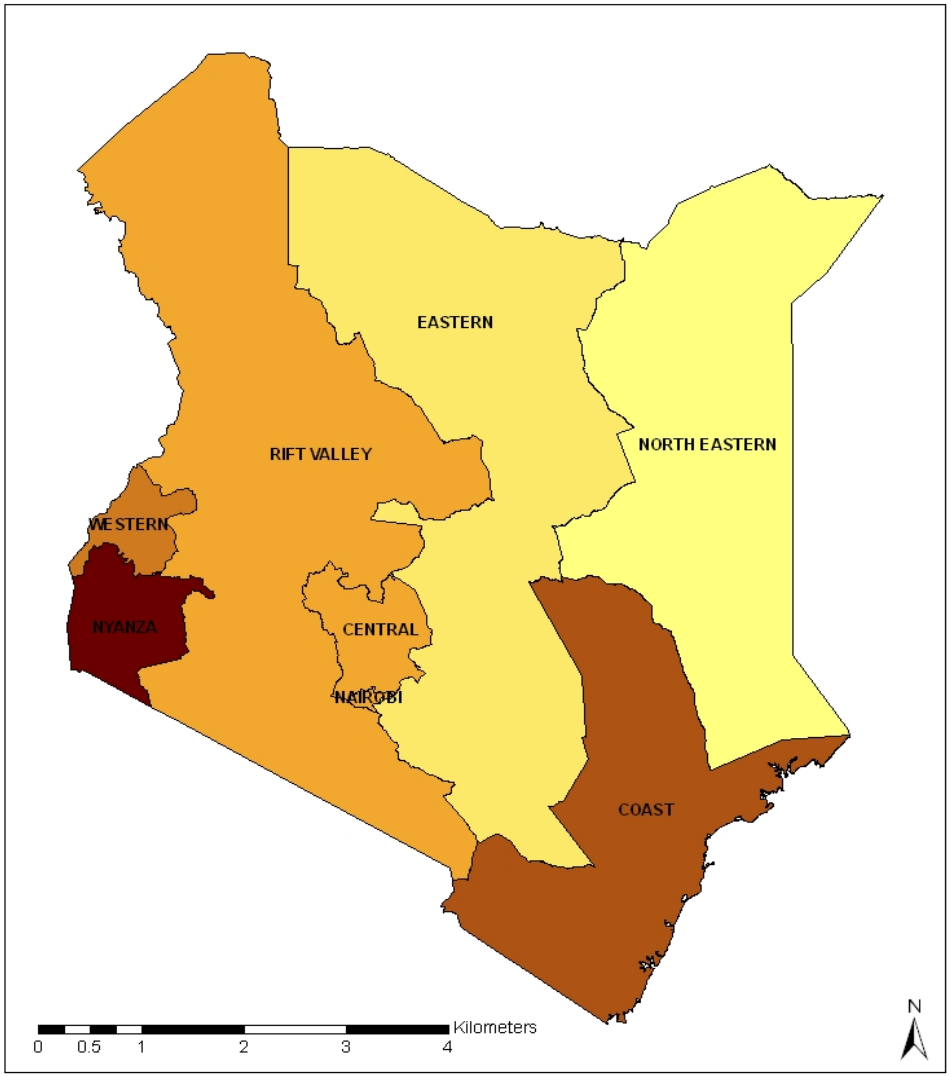
Indicator	Result
# of Constituencies (2006)	210
# CSOs expected to report (2006)	8,000
# of CSOs reporting Q3 (2008)	3394
% of CSOs reporting Q3 (2008)	42%
# of PLWHA receiving HCBC services Q3 (2008)	7145

Distribution of CSOs Targeting PLWAs By Constituency



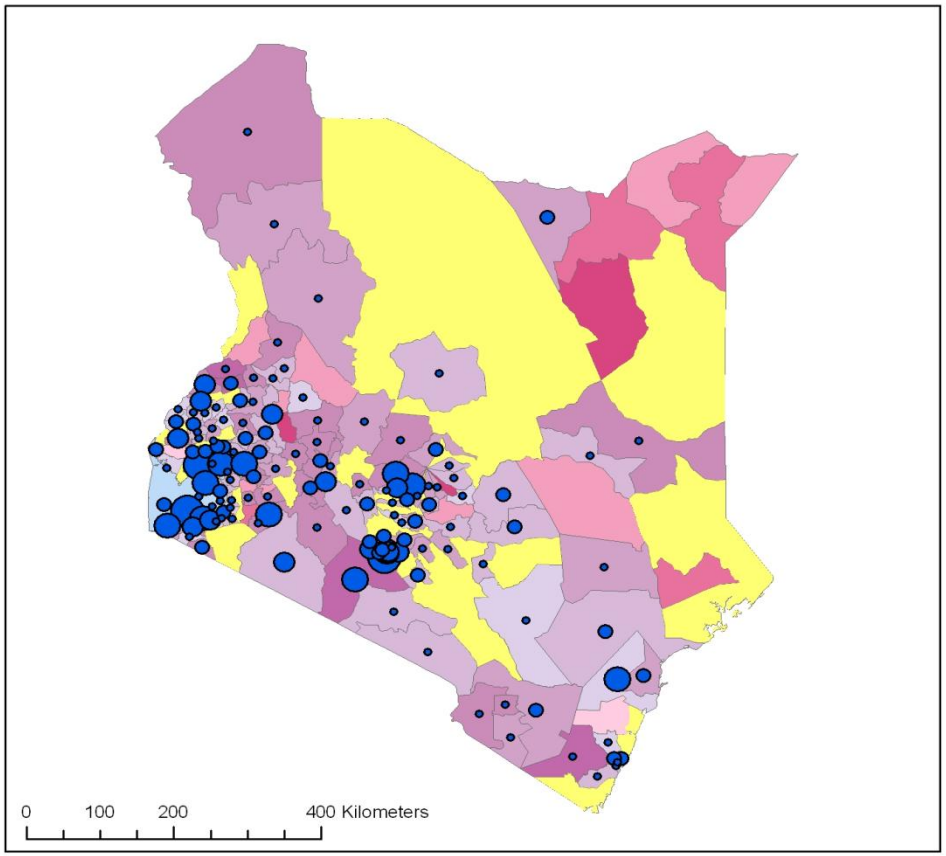
Mundia, B., Mbuthia, S., Emukule, G., Kere, J. MEASURE DHS Workshop. 2007.

NUMBER OF PLWHA PROVIDED WITH HBC SERVICES BY PROVINCE



Ooyi, G., Kiruri, L., Khasewe, J. February 2009.

Comparison of the number PLWHA and Reporting Rate in Kenya Quarter3, 2008



Legend

No. of PLWHA Q3, 2008

- 2 - 269
- 270 - 734
- 735 - 1371
- 1372 - 2964
- 2965 - 7145

Percentage Reporting Q3, 2008

- 0.9% - 5.5%
- 5.6% - 14.2%
- 14.3% - 23.1%
- 23.2% - 50%
- 50.1% - 75.9%

Percentage Reporting Q3, 2008

- 0%

Ooyi, G., Kiruri, L., Khasewe, J. February 2009.

Results

- These maps visualized the relationship between service coverage and reporting and helped the team:

1. Understand gaps in reporting
2. Identify geographical areas and specific COBPAR indicators in need of data verification and audit
3. Support evidence-based actions for strengthening the COBPAR System

Lessons Learned

- GIS is a powerful tool in assessing the quality of community-level data
- Through mapping, geographical and indicator specific gaps can be identified
- Maps provide a base of evidence in designing and targeting interventions for improving data quality

COBPAR SYSTEM TEAM

THE USE OF GIS FOR MAPPING HIV//AIDS SUSCEPTIBLE AREAS IN ADDIS ABABA,, ETHIOPIA

AHMED SEID

AHRI

Ethiopia

APRIL, 2008

Background

- Addis Ababa is the capital city of Addis Ababa and is also the political, economic, and the cultural, center of the country.
- Addis Ababa has an estimated total population of 3.2 million. Over 51% of the population is female.
- There are 24 hospitals in Addis Ababa (five of which are owned by the Addis Ababa Health Bureau). 24 health centers and 46 health posts. In addition, there are 487 clinics categorized into lower, medium, higher and special types; these include privately owned clinics and those owned by non-governmental organizations
- In Addis HIV/AIDS is the most challenging problem in terms of social, economical, political, and cultural aspects. Even nowadays it is a common thing to lose someone so close due to this disease.

CONT…..

- The groups most vulnerable to infection were identified as commercial sex workers and young people, particularly unemployed educated young adults.
- A preliminary assessment conducted by Zelalem on 105 poor women (including housewives, maids, students, unemployed youth and commercial sex workers) found that 69 were found to be carriers of the virus. Some respondents felt that women in low economic classes are victims as they are exposed to many sex partners to fulfill their need for food, clothing, and other necessities.
- In order to alleviate this major problem different strategic plans have been proposed and carried out by different governmental and non-governmental bodies; Of course, most of the strategies are good but if it was for GIS techniques manipulated to develop these strategies; then it would have been better.
- In order to ease this acute spread of the disease, an integrated and well-planned method of prevention planning, evaluation, and surveillance of the HIV/AIDS spread is necessary.

- GIS and remote sensing is one of the recent tools in identifying, classifying and mapping areas vulnerable to the problem.

Geographic Information System

- Geographic Information System (GIS) is an organized collection of computer Hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.
- GIS is a set of tools increasingly being used in the Public Health arena for analyzing, planning, decision making, problem solving, and research.

Objectives

General Objectives

- To apply GIS techniques to HIV/AIDS prevention planning, evaluation, and surveillance in the Addis Ababa city.
- To recommend the best strategy to resource allocation for prevention of the spread of HIV/AIDS, and to give care and support to those parts of the society who have fallen victim to the disease.

Specific objectives.

- To assess the spatial distribution of high HIV/AIDS susceptible areas of the Addis Ababa city.
- To maximize the number and quality of VCT centers in the city and to identify top priority areas of the city and establish such health facility centers.
- To identify those areas of the city that show high HIV/AIDS prevalence and to investigate the factor/s associated with this high incidence and to establish a strategic plan to combat the problem.
- To monitor the entire progress of the prevention and care/support activities.

Methods

- Projected population data of the year 2006 and the 1994 Census for each Woreda of the Addis Ababa city (Source: Central Statistics Authority 2005). From which the following demographic characteristics were derived:

TABULAR DATA

Young Population Data
Female Population Data
Sex Workers Population Data
Establishments with Sex Workers
Low Income Population Data

Attaching the Tabular data to the shape file Attribute of each Worda

AA Woredas Shape Data

SHAPE DATA (VECTOR)

Young Population Shape data
Female Population Shape Data
Sex Workers Population Shape Data
Establishments with Sex Workers
Low Income Population Shape Data

Interpolation (Contour Creation)

☐ **Clipping Themes**

RASTER DATA

Young Population Raster data
Female Population Raster Data
Sex Workers Population Raster Data
Establishments with Sex Workers Data
Low Income Population Raster Data

Deriving Commensurate Criteria Maps
Linear Scale Transformation

STANDARDIZED RASTER DATA

Female Population Raster Data
Sex Workers Population Raster Data
Establishments with Sex Workers Data
Low Income Population Raster Data
Young Population data

Assigning Criterion Weighting **Pair wise Comparison Method**

Young Population Raster data (Wt1)
Sex Workers Population Raster Data (Wt2)
Establishments with Sex Workers Data (Wt3)
Female Population Raster Data (Wt4)
Low Income Population Raster Data (Wt5)

Youth
Female
Sex Worker
Establishments
Low Income

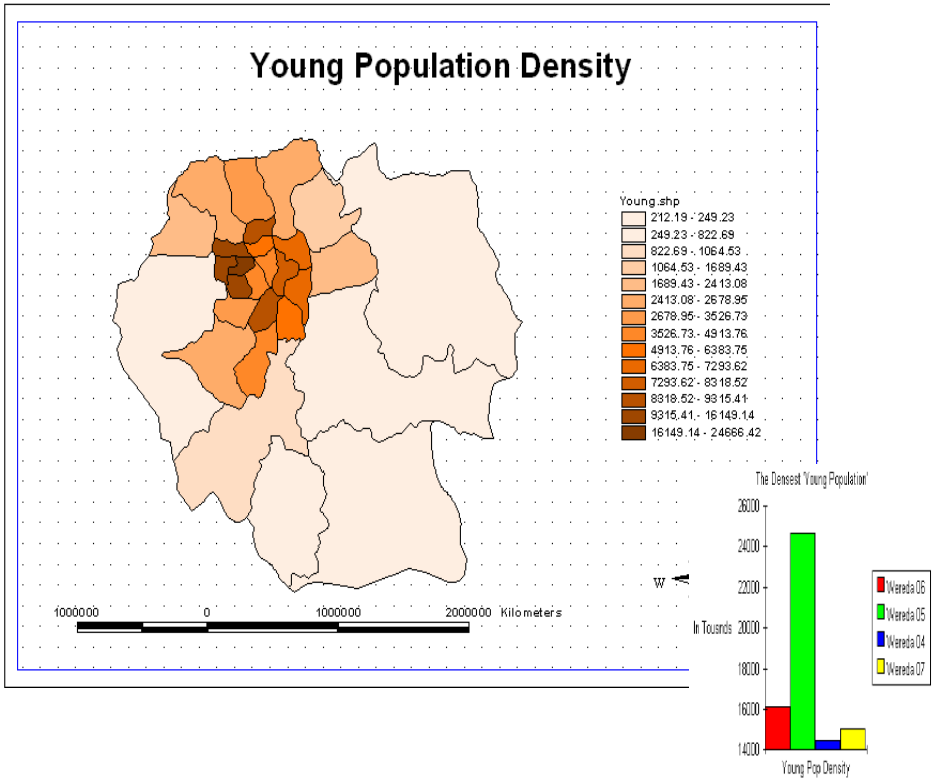
GIS
Overlay
Analysis

HIV/AIDS Susceptibility Map

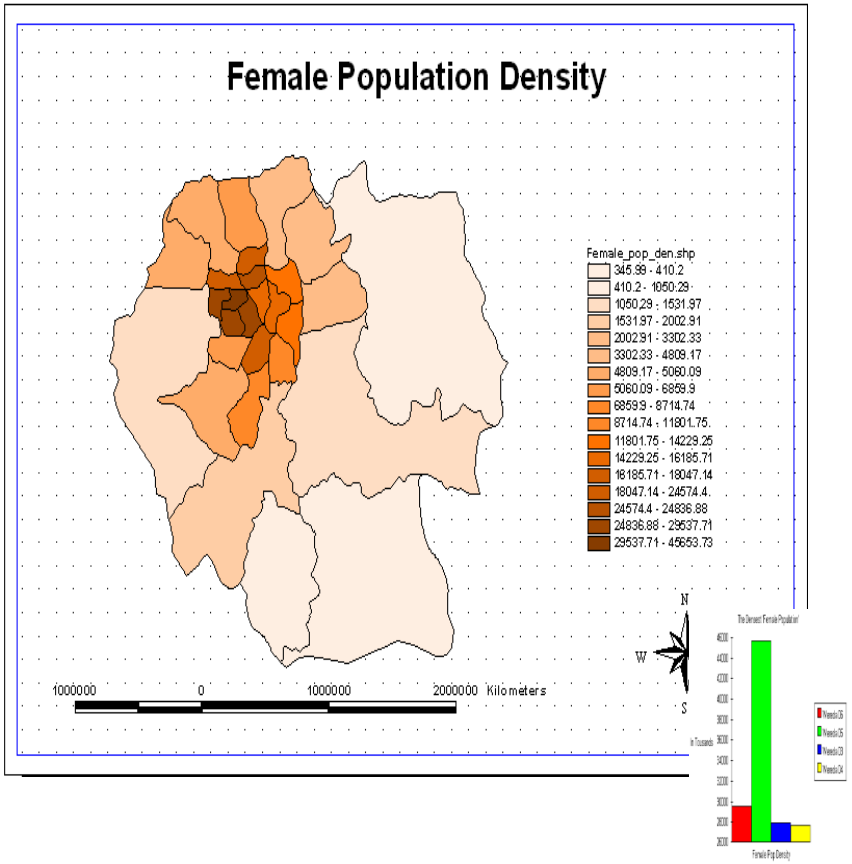
GIS-BASED DATA PROCESSING AND ANALYSIS TECHNIQUES

Processing the 'Young Population' GIS Layer:

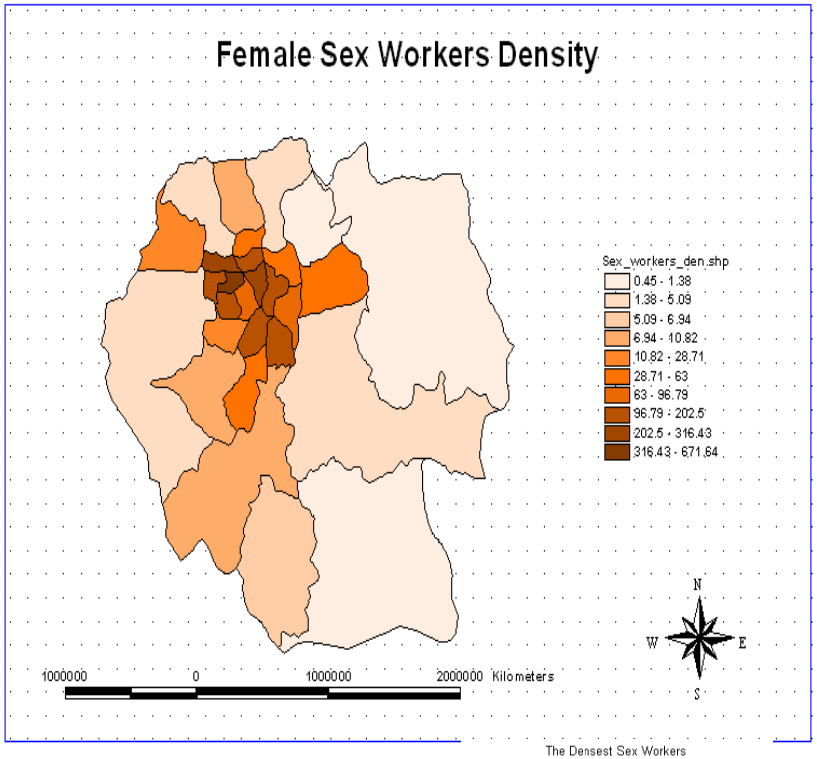
Young Population
Density=
Tot. Young Pop. in each Woreda
Area of each Woreda

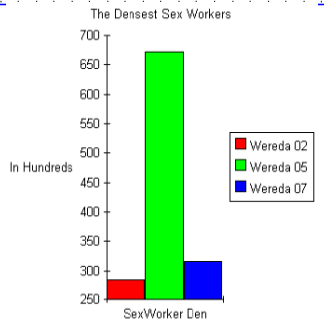


Female Population Density =
Tot. Female Pop. in each Woreda
Area of each Woreda



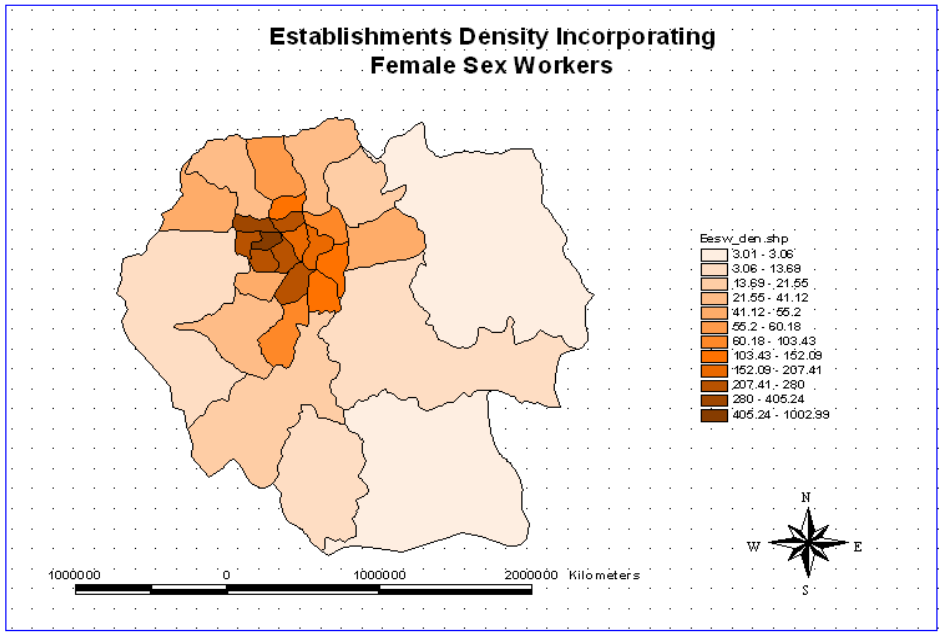
Sex Workers Population Density= Tot. Sex Workers Pop. in each Woreda
Area of each Woreda

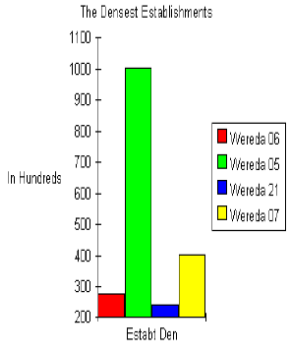




Establishments Density =

Tot. Establishments. in each Woreda
Area of each Woreda



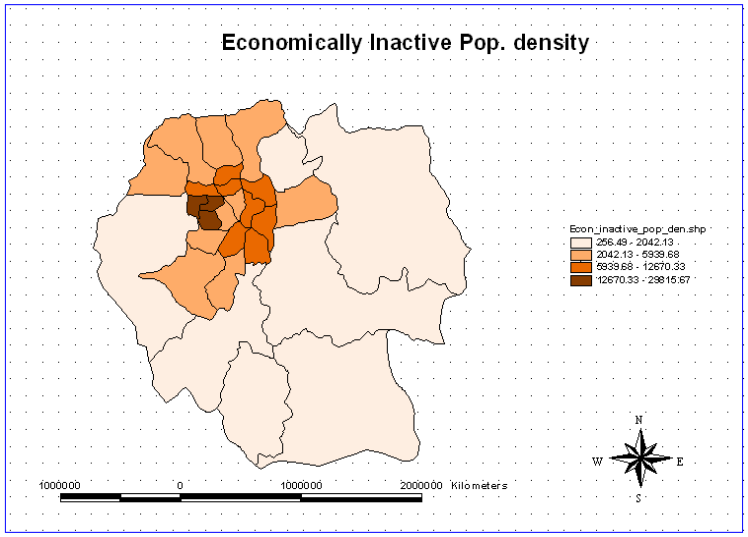


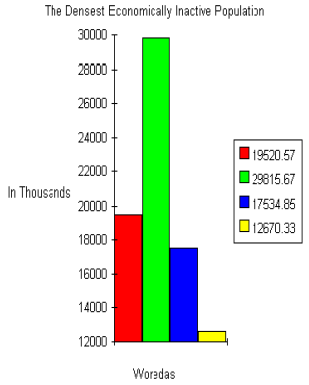
Economically Inactive Population Density

=

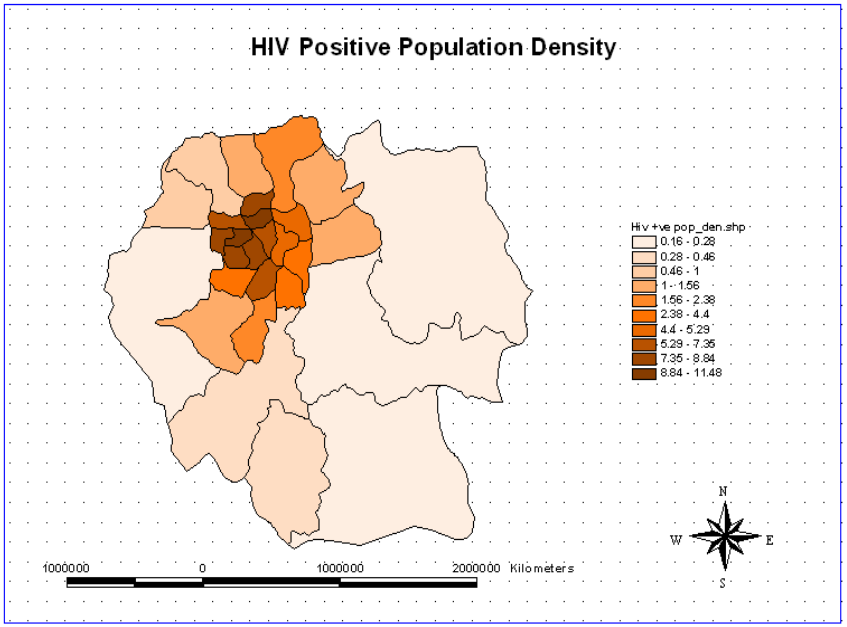
Tot. Economically Inactive Population in each Woreda

Area of each Woreda





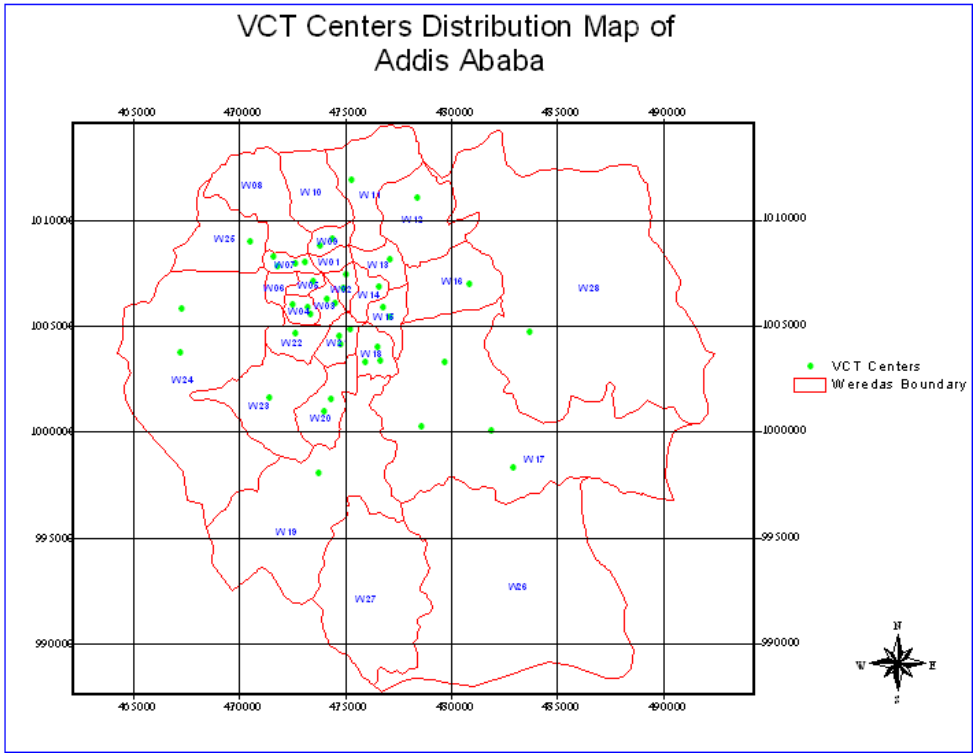
Mapping the Existing HIV Positive Population Distribution



In order to create the HIV/AIDS susceptibility map of the Addis Ababa city, the existing spatial distribution of the HIV/AIDS epidemic must be mapped, and then compared to the suggested spreading factors. The degree of correlation between each factor map and the existing HIV/AIDS spatial distribution map is calculated, so that it will be helpful when giving weights to each of the criterion map.

4.1.7. Mapping the VCT Centers Distribution

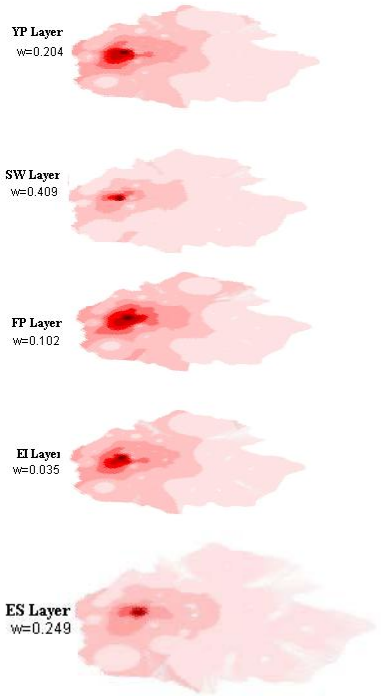
In order to see the spatial distribution of the Health Centers that work in the areas of HIV/AIDS prevention and control activities, it is important to have a separate map that shows the spatial distribution of such facilities (for example the spatial distribution of VCT center).



Criterion Weighing

The resulting weighted sum vectors are:

YP	*FP*	*SW*	*ES*	*EI*
1.113	0.521	2.245	1.447	0.182

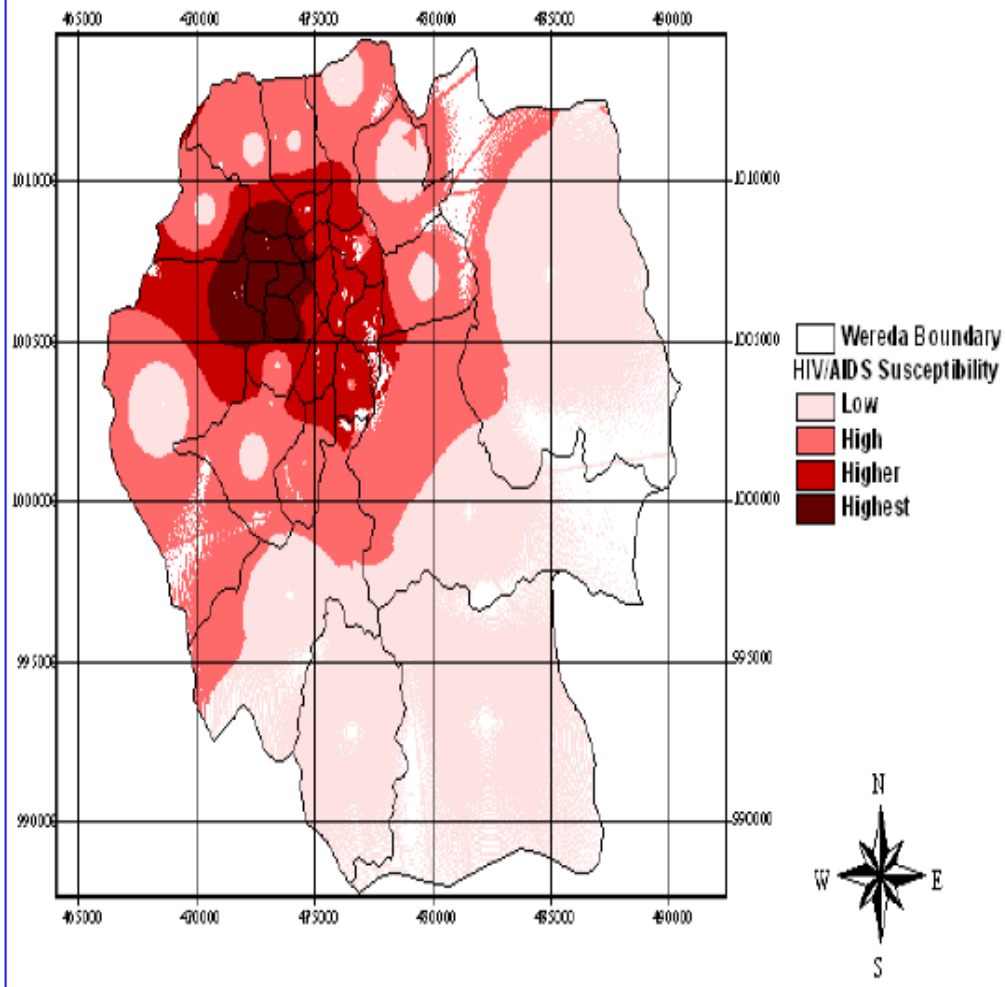


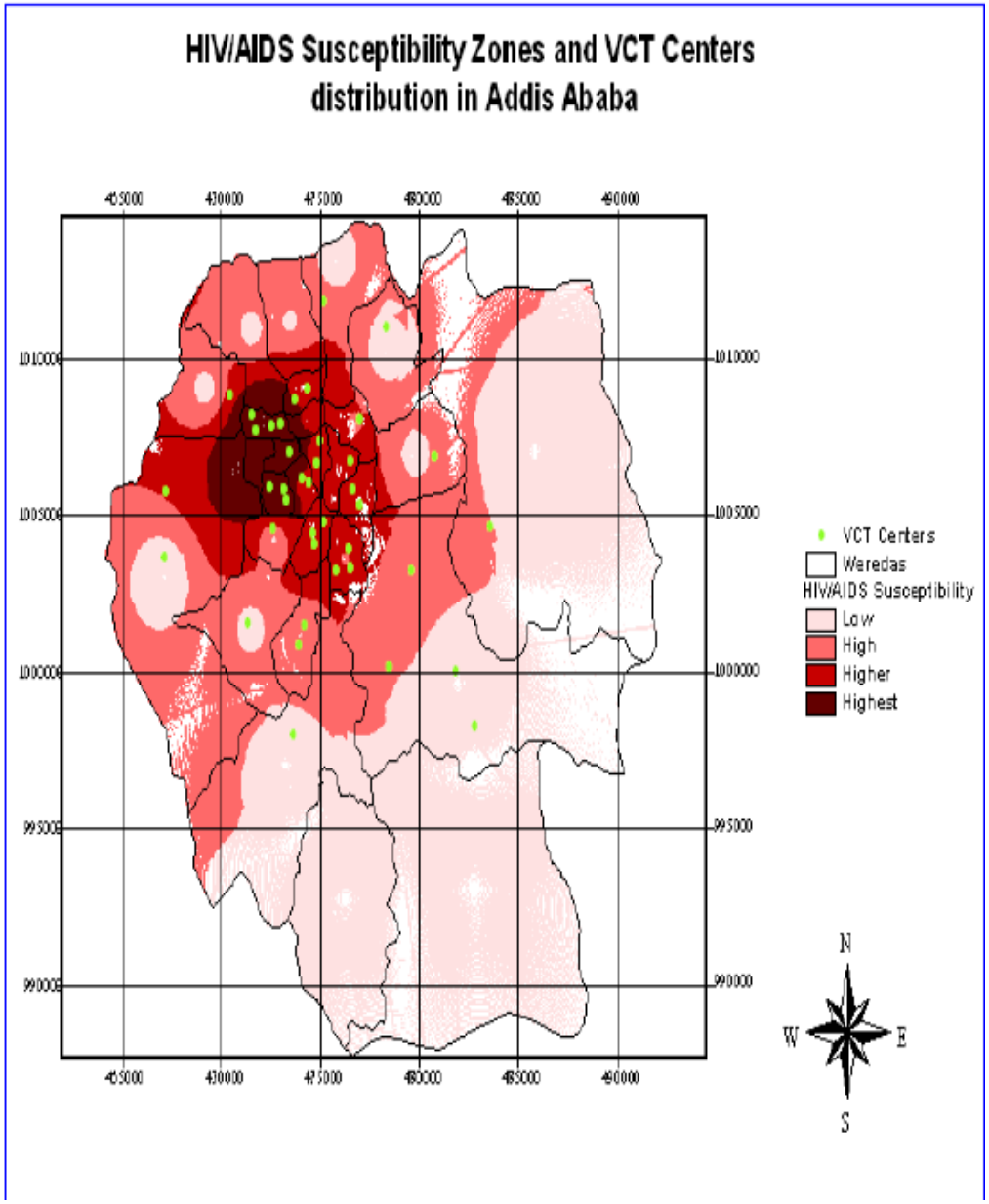
Output Layer

Reclassification and Ranking

The GIS map-overlay facility

HIV/AIDS Susceptibility Map of Addis Ababa





DISCUSSIONS

•The HIV/AIDS susceptibility map of Addis Ababa, which is developed by integrating the GIS techniques and Multicriteria Decision Support System, has four major HIV/AIDS susceptibility zones. These susceptibility zones are ranked in relative terms as: the 'Highest', the 'Higher' the 'High', and the 'Low' susceptible zones to HIV/AIDS risk.

- The Susceptibility map that the majority of Addis Ababa is found in the 'Low' susceptible zone. Generally, the central northwest part of the city is found under the 'Highest' and 'Higher' HIV/AIDS susceptible zones, whereas the eastern and southern parts of the town are found in the 'Low Susceptible' zone.

Appendix V: Group Work Instructions

Linking Health and Mapping

John Spencer
MEASURE Evaluation
Pre-CODIST Workshop
April 27, 2009


MEASURE Evaluation is funded by the U.S. Agency for International Development (USAID) through Cooperative Agreement GHA-A-00-08-00003-00 and is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership With Futures Group International, John Snow, Inc., Macro International Inc., Management Sciences for Health, and Tulane University. The views expressed in this presentation do not necessarily reflect the views of USAID or the United States government.


Group Work Instructions

- Purpose of Group Work:
  - 1) Identify resources within the country or region for GIS and mapping
  - 2) Identify data and technical capacity needs for Ministries of Health (MOH) and/or NACs
  - 3) Identify challenges and limitations that hinder making linkages with NMA and spatial data infrastructure efforts
  - 4) Identify opportunities for connections between the MOH/NACs and the National Mapping Agencies (NMA)


Data Infrastructure

- Data has a journey

Board

Capacity/mandate | Data production chain | Needs/issues

- Documenting the data (metadata)
- Updating the data
- Distributing/Using the data
- Validating the data
- Cleaning the data
- Collecting or extracting the data
- Defining the data set specifications
- Defining the ground reference
- Defining the vocabulary
- Defining the needs/gaps

Challenges

- What are the challenges that you face:
  - Using geographic data
  - Linkages across sectors
  - Ways to overcome challenges

Resources

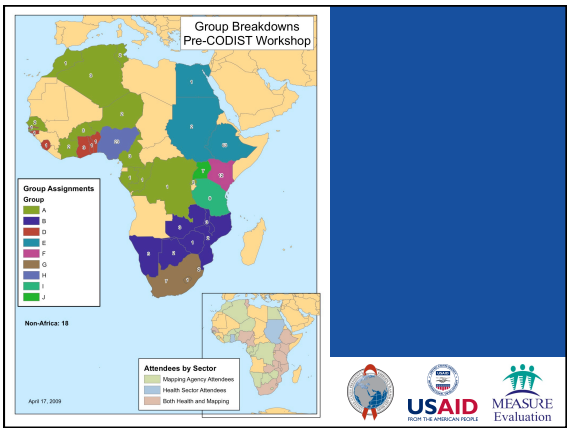
- What mapping resources exist in country or region?

Group Work Details

- Group Work: 14:45 – 16:00
- Facilitator will lead group
  - Rapporteur will be Chosen
- During the break key findings will be aggregated
- Reported out

Group Details

- 9 Groups based on country
- If you are from a country outside of Africa and not assigned a group, pick a country to participate in.


Group Breakdowns
Pre-CODIST Workshop
Group Assignments
Group
A
B
D
E
F
G
H
I
J
Non-Africa: 18
Attendees by Sector
Mapping Agency Attendees
Health Sector Attendees
Both Health and Mapping
April 17, 2009
USAID
FROM THE AMERICAN PEOPLE
MEASURE
Evaluation

Appendix VI:
Group Assignments by Country

Country	Group
Ethiopia	1
Sudan	
Algeria	2
Burkina Faso	
Cameroon	
Chad	
Côte d'Ivoire	
DRC	
Madagascar	
Mali	
Morocco	
Niger	
Rwanda	
Senegal	
Tunisia	
Malawi	3
Mozambique	
Namibia	
Zambia	
Zimbabwe	
Kenya	4
Tanzania	
Uganda	
Gambia	5
Ghana	
Nigeria	
Lesotho	6
South Africa	
Swaziland	

Appendix VII: Group Worksheet

Group Work Objectives

1) Identify resources within the country or region for GIS and mapping

2) Identify data and technical capacity needs for Ministries of Health (MOH) and/or NACs

3) Identify challenges and limitations that hinder making linkages with NMA and spatial data infrastructure efforts

4) Identify opportunities for connections between the MOH/NACs and the National Mapping Agencies (NMA)

Instructions:

Each group will have a facilitator which will lead the work. The facilitator will help each group address the following questions:

1) **Group member introductions: Name, organization and duties.** (10 minutes)

2) **What capacity for GIS and mapping exists in each country and what are the main institutional challenges and needs ?** (20 minutes)

Fill out the GIS Institutional Capacity, Connections and Challenges/Needs Form (next 3 pages)

3) **What opportunity for linkages between National Mapping Agencies and Ministries of Health and NACs** (45 Minutes)

- Guided discussion about technical capacity and data needs for Ministries of Health and opportunities for linkages with National Mapping Agencies based on the example presented during the morning sessions
- Challenges and limitations that hinder linkages
- What are the ways to overcome these challenges?

Institutional capacity and connections **Country**

Name of the institution:	
Postal address:	
General phone number	
Fax Number	
Contact person (please indicate name, phone number and email address):	
Web site (URL)	
Major current GIS projects (short description)	
Is your institution involved in the NSDI process (yes/no)?	

GIS Staff

Number		
Degree	**Licence**	
	master	
	PhD	
	Other	

GIS/RS software at disposal (please indicate the version and number of licenses)	

Hardware at disposal	**nbr of computers**	
	nbr of plotter(s) (with size)	
	digitizing table	
	GPS devices (please indicate the model, i.e. Garmin eTrex)	

Connections with other institutions in the country regarding GIS activities

Name of the institution	**Name and email address of the GIS person you are in contact with in this institution**	**Name and email address of the GIS person you are working with in this institution**

(FORM CONTINUES ON NEXT PAGE)

What are the 5 most important mapping issues your organization faces?

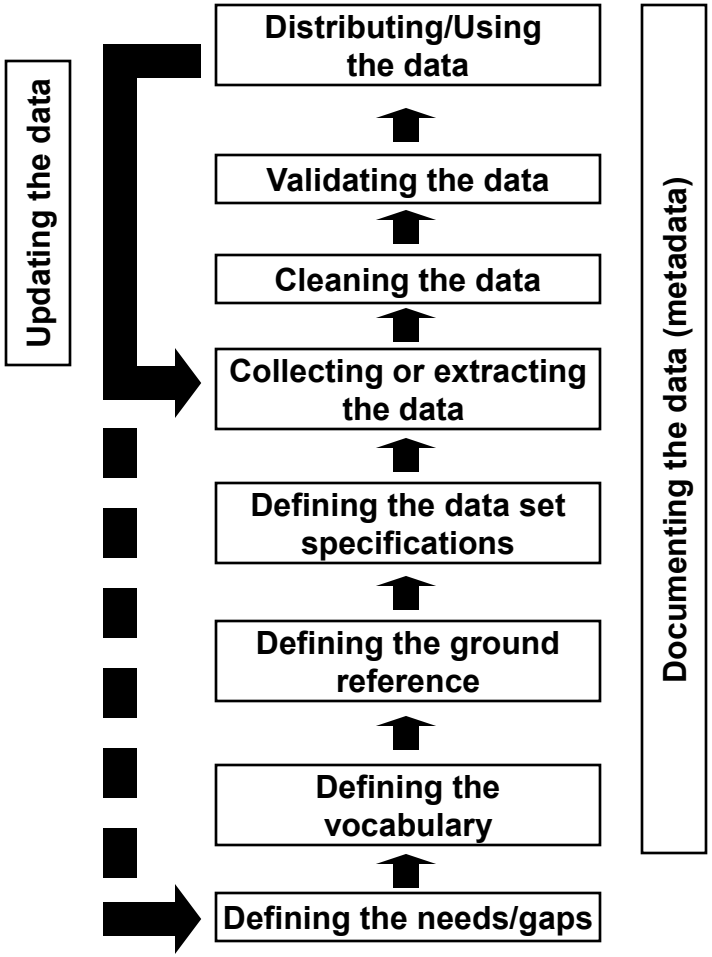
Using the following list, identify the top 5 issues related to mapping

1 = The top issue

Note: Only provide a rank for 5 issues.

		Rank
Spatial Data	Use/Analysis of Spatial data	
	Collection Spatial data	
	Availability of Spatial data	
	Acquiring/Sharing Spatial Data	
	Maintaining Spatial data	
	Timeliness of data availability	
HIV Data	Use/Analysis of HIV data	
	Collection HIV data	
	Availability of HIV data	
	Acquiring/Sharing HIV Data	
	Linkage to Spatial data	
	Maintaining HIV data	
	Timeliness of data availability	
Resources	Overall	
	Personnel	
	Training	
	Equipment	
	Financial	
Awareness/Collaboration	Awareness raising	
	Collaboration	
	Coordination	
	Planning	
Standards	Spatial data compatibility	
	HIV data compatibility	
	System interoperability	
	Metadata	

Appendix VIII: Data Production Chain

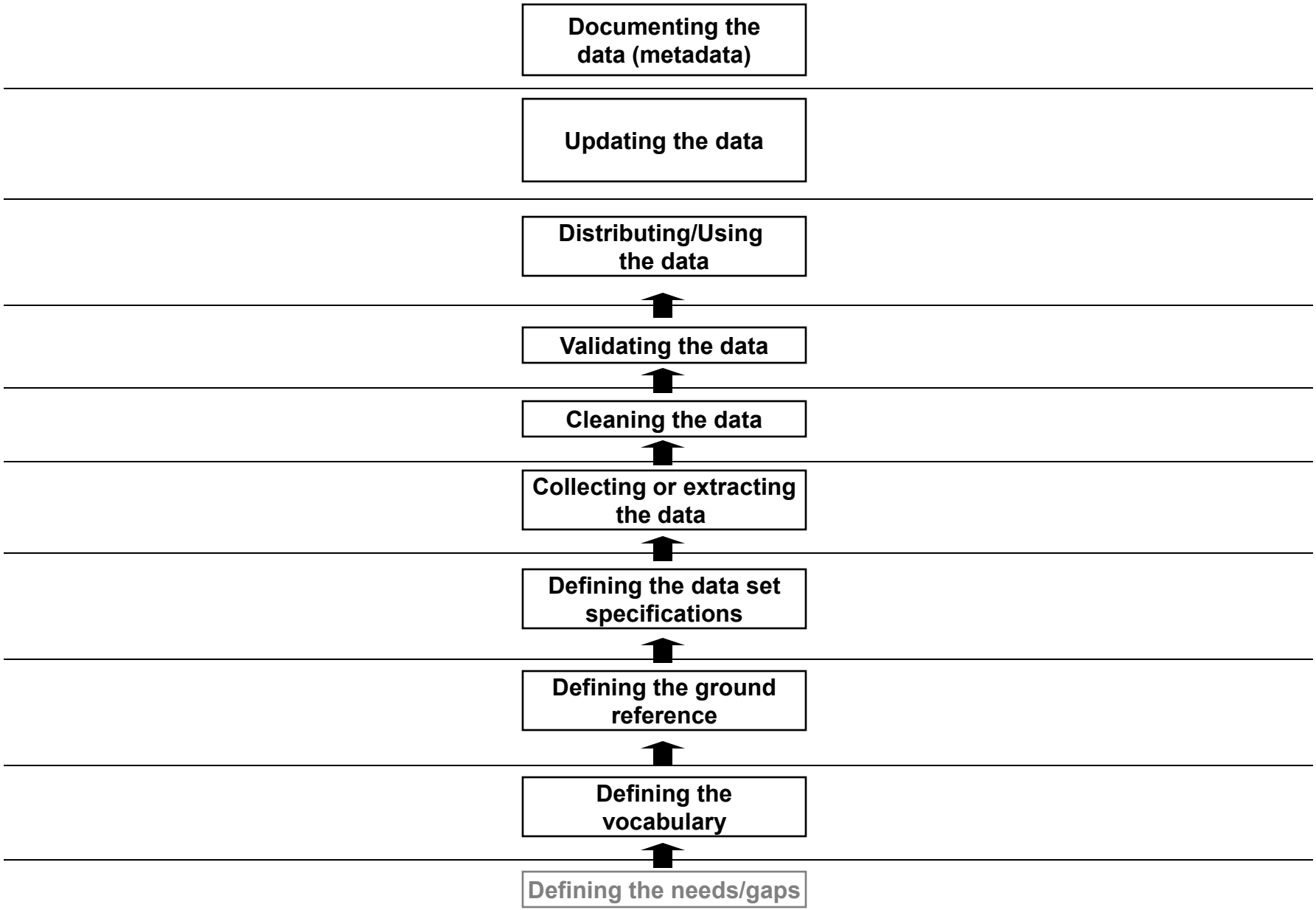


Board

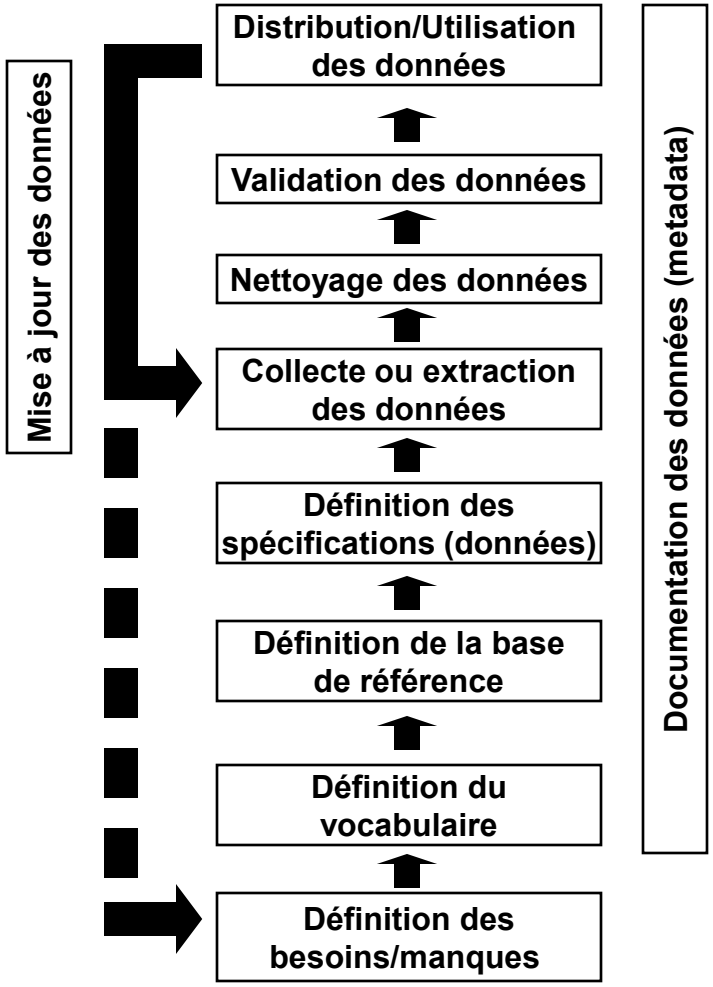
Capacity/mandate

Data production chain

Needs/issues



Chaine de production des données

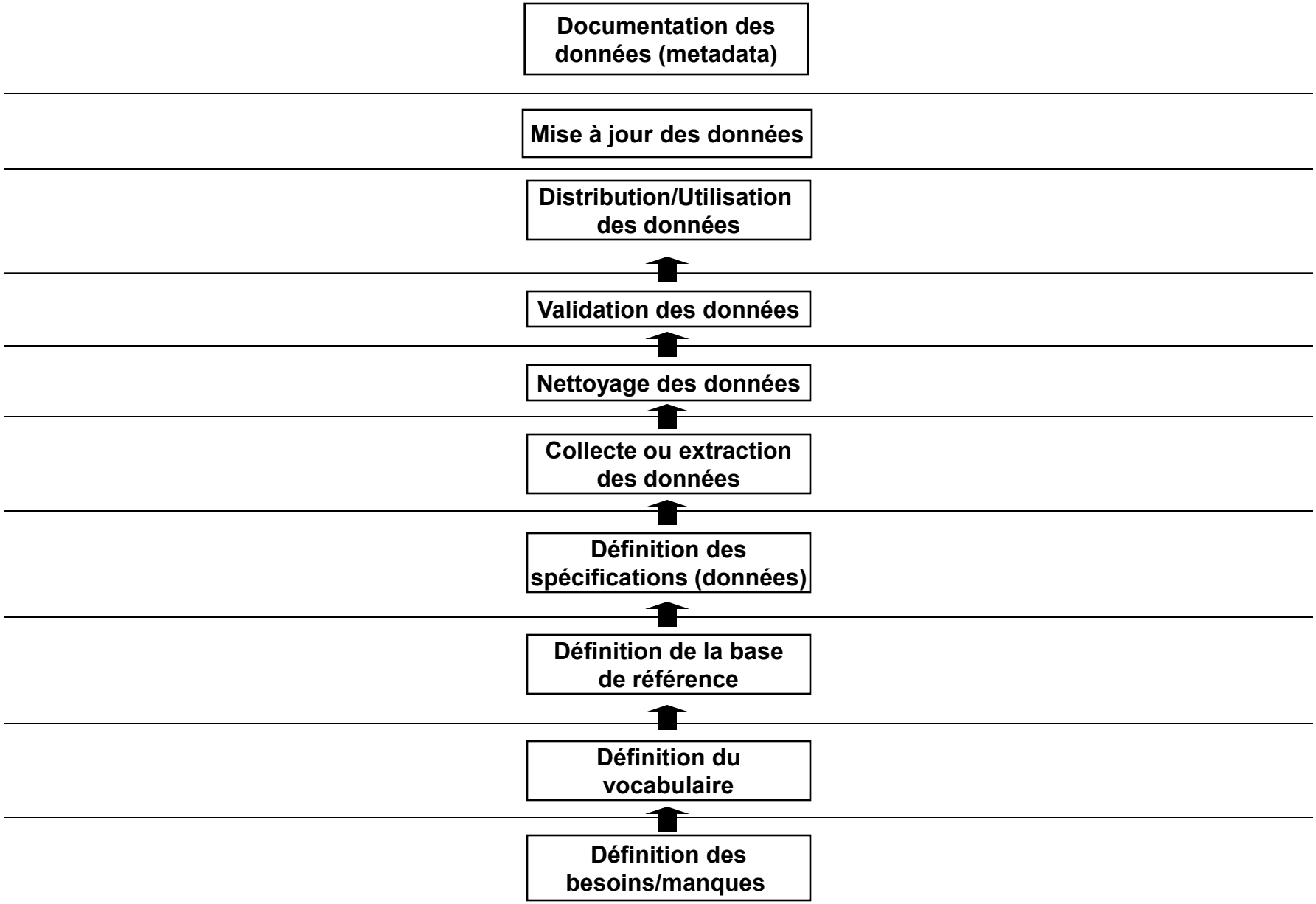


Board

Capacités/mandat

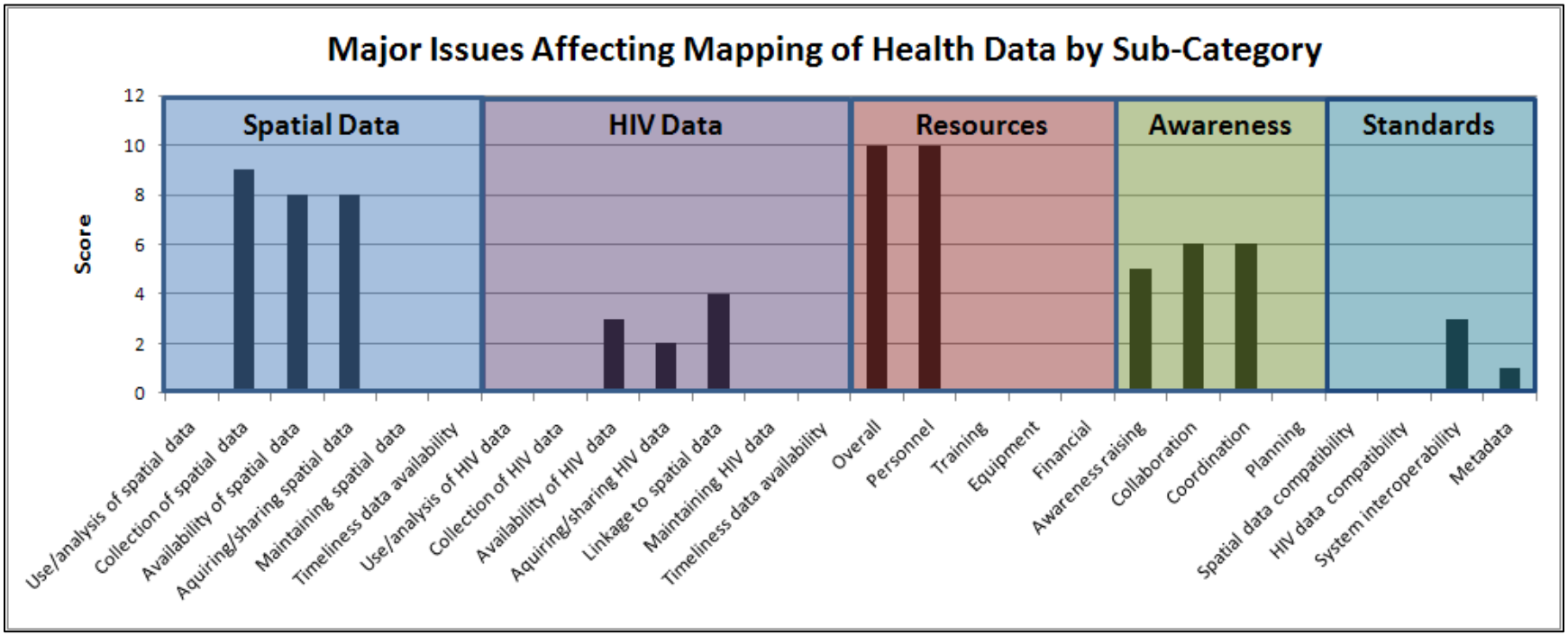
Chaine de production des données

Besoins/Problèmes



Appendix IX

Major Issues by Sub-Category



Appendix X: Group Two Results

Tunisia: 12 years that the health sector has worked in the domain of geomatics, but that was very fragmented. Since 2004, through personal initiatives to resolve problems, have decided to work via Internet networks also in partnership with other sectors (military, agriculture, education). A strategic plan has thus been developed in collaboration with the Health Metrics Network (HMN) to strengthen the health information system.

Democratic Republic of the Congo: At the start, the different agencies worked separately. The PNUD [United Nations Program for Development], through a work group, allowed the bringing together of these agencies, including the health sector, in order to normalize the information by beginning with the categorization and codification of the different layers of information. Are now in the process of extending that to the entire Congo basin.

Senegal: Collaboration is part of the health policy which has allowed to put in place an institutional framework which is now supported by the technological infrastructure going down to the level of the treatment centers. Are in the process of working on a national spatial data infrastructure plan with an eye toward development planning in the long term. In doing that, they are trying to ensure that projects do not stop at the end of each project, that they are not directed only by donor needs but by the needs of the country. One of the future pilot projects concerns AIDS.

Examples of collaboration already existing between the national mapping agencies and the health sector

Cameroon: Very little demand on the part of the health sector, only when there is a need for a map. The National Geography Institute is now in the process of trying to put into place their own spatial data infrastructure including the health sector. At this moment the institute is working on updating cartographic data.

Burkina Faso: The opportunity to work with the health sector did not come from the national level but from certain health districts. The National Mapping Agency makes data that they have at their disposal freely accessible to all the ministries and tries to strengthen the technical capacities of persons in the health sector gathering the data. Are in the process of establishing their spatial data infrastructure, a process in which the health sector has participated.

Rwanda: Trac plus works with the academic sector to work, for example, on the question of malaria. For AIDS, works with the University of Loma Linda. A national plan facilitated by UNECA. At the infrastructure level, something is in place but there is still work to do at the level of technical personnel.

Chad: The health sector was not prepared for the arrival of geographic information systems. They went back to the minister of telecommunications who put into place a system of communication with the villages, which led to the mapping of these villages => start of collaboration.

Challenges

- define collaborations where everyone wins
- make the distinction between geographic information and thematic cartography
- ensure a return on investment
- make sure the message can be understood by persons not having a technical background

Recommendations/Resolutions

1. Identification of needs at the national level so that the health sector can work with the national mapping agencies and [engage in] good planning, including the question of communication, in order to permit development in the long term

2. Develop and put into action a strategy for communication and advocacy at the continental, regional, and national levels for the contribution of geographic information to the realization of universal access to HIV/AIDS prevention and treatment services

3. Build the capacities of both sides (health sector and national mapping agencies)

4. Ensure that the health sector is at the discussion table during the creation and maintenance of the spatial data infrastructure in each country

5. Transfer of knowledge and experience between countries advanced in the development of NSDIs toward those that are at the beginning of the process

Resolutions

- Ensure Availability of Spatial Data in a standard format through Adequate funding and Budgetry support
- Prioritize National Geospatial Data Infrastructure
- Allocate Resources for Capacity and Training for Key Data

Exemples de collaboration déjà existantes entre les agences nationales de cartographie et le secteur de la santé

Tunisie: 12 ans que le secteur sanitaire travaille dans le domaine de la géomatique, mais cela était très fragmenté. Depuis 2004, au travers d'initiatives personnelles pour résoudre des problèmes, ont décidés de travailler en réseau via internet aussi en partenariat avec d'autre secteurs (militaire, agriculture, éducation). Un plan stratégique à alors été développé en collaboration avec le Health Metrics Network (HMN) pour renforcer le système d'information sanitaire.

République Démocratique du Congo: Au départ, les différentes agences travaillaient séparément. Le PNUD, au travers d'un groupe de travail a permit de regrouper ces agences, y compris le secteur sanitaire, afin de normaliser l'information en commençant par la catégorisation et la codification des différent couches d'information. Sont maintenant en train de travailler à étendre cela à tous le bassin du Congo.

Sénégal: La collaboration est partie de la politique sanitaire qui a permit de mettre en place un cadre institutionnel qui est maintenant appuyé par une infrastructure technologique descendant jusqu'au niveau des centres de soins. Sont en train de travailler sur un plan national d'infrastructure spatiales des données dans un soucis de planification du développement sur le long terme. En faisant cela ils essayent d'assurer que les projets ne s'arrêtent pas à la fin de chaque projet, qu'ils ne soient pas seulement diriger par les besoins des donateur mais par les besoins du pays. Un des projets pilotes à venir concerne le SIDA

Exemples de collaboration déjà existantes entre les agences nationales de cartographie et le secteur de la santé

Cameroun: Très peut de demande de la part du secteur sanitaire, seulement lorsqu'il y avait besoin d'une carte. L'institut National Géographique est maintenant en train d'essayer de mettre en place leur propre infrastructure des données spatiales incluant le secteur sanitaire. En ce moment l'Institut travaille sur la mise à jour des données cartographiques.

Burkina Faso: L'opportunité de travailler avec le secteur de la santé n'est pas venus du niveau national mais de certains districts sanitaires. L'agence National de Cartographie offre les données qu'ils ont à leur disposition est librement accessible à tous les Ministères et essaye de renforcer les capacités techniques des personnes récoltants les données dans le secteur de la santé. Sont dans le processus d'établir leur infrastructure de données spatiales auquel le secteur sanitaire à participé.

Rwanda: Trac plus travaille avec le secteur académique pour travailler par exemple sur la question de la Malaria. Pour le SIDA, travaille avec L'université de Loma Linda. Un plan national (NIC) facilité par l'UNECA. Au niveau infrastructure, quelque chose est en place mais il y a encore du travail à faire au niveau des du personnel technique

Tchad: Le secteur de la santé n'était pas préparé à l'arrivée des systèmes d'information géographique. Ils sont donc revenu vers le ministère de la télécommunication qui a mis un système de communication en place avec les villages ce qui a amené à la cartographie de ces villages => début de la collaboration

Challenges

- définir des collaborations où tout le monde est gagnant

- faire la différence entre l'information géographique et la cartographie thématique

- assurer un retour sur investissement

- faire en sorte que le message puisse être compris par des personnes n'ayant pas un background technique

Recommandations/Résolutions

1. Identification des besoins au niveau national afin que le secteur de la santé puisse travailler avec les agences nationales de cartographie et une bonne planification, incluant la question de la communication, afin de permettre le développement sur le long terme

2. Développer et mettre en œuvre une stratégie de communication et de plaidoyer au niveau continental, régional et national sur la contribution de l'information géographique à la réalisation de l'accès universel aux services de préventions et de traitement du VIH et du SIDA

3. Renforcement des capacités des deux côtés (secteur de la santé et agences nationales de cartographie)

4. Assurer que le secteur de la santé soit à la table des discussions lors de la création et du maintient de l'infrastructure de données spatiales dans les pays

5. Transfer des connaissances et des expériences entres les pays en avance dans le développement des NSDI vers ceux qui sont au début du processus

Resolutions

- Ensure Availability of Spatial Data in a standard format through Adequate funding and Budgetry support
- Prioritize National Geospatial Data Infrastructure
- Allocate Resources for Capacity and Training for Key Data

Appendix XI:
Group Six Results
Proposed Resolutions

Proposed resolution 1:
All delegates from national mapping agencies and national departments of health agreed to meet with one another before the end of May 2009 to plan their collaborative efforts for mapping data related to HIV/AIDS at the level of second administrative areas.

Proposed resolution 2:
Noting that mapping data about HIV/AIDS is a multi-disciplinary field and noting the different frames of reference of the participants and hence the difficulty of reaching a common understanding of the mapping of data about HIV/AIDS, CODIST-Geo resolves to establish a new Working Group to draft a common terminology (ontology) for the shared understanding of professionals from the different fields of geo-information and health, to be completed by 31 December 2009.

Appendix XII: UNECA Report
Pre-CODIST Workshop Report
on *Enlisting NMAs in the Fight Against HIV/AIDS*

Monday, April 27th, 2009, 09:00 – 18:00, UNCC CR2

Objectives

This workshop represents the first-ever pan-African event bridging health sector leadership and national mapping agencies to initiate a community of practice to support planning, implementation, and monitoring and evaluation of HIV/AIDS prevention, care and treatment programs.

Attendance

The workshop was attended by at least 170 CODIST delegates and observers drawn from 35 African member States and 13 countries from Europe, North America, and Asia. Gender representation was approximately 20% female.

Summary

Following opening remarks by the Chair, representatives of the workshop sponsors—UNAIDS, USAID/PEPFAR, and ECA—offered introductory remarks. The workshop facilitator from MEASURE Evaluation outlined the purpose of the workshop and a conceptual overview of spatial data infrastructures and how GIS can inform HIV/AIDS programs.

Five (5) formal presentations comprised the two morning sessions organized around the themes of National Service Provision and Community-Based Reporting. The five (5) presentations were as follows:

National Service Provision

Analysing geographic coverage of ART clinics using GIS: example of collaboration between several institutions in Malawi delivered and detailed some of the characteristics and challenges of Malawi's successful deployment of GIS to assist in the assessment of antiretroviral therapy coverage.

Mapping Task Force Committee: developing a health facility GIS database in Tanzania focused on Tanzania's experiences towards harmonizing the mapping activities carried out by various stakeholders in the health sector. The presenter further elaborated on some of the technical issues (such as uniquely identifying health facilities) in designing the database.

GIS applied to HIV/AIDS interventions monitoring: the case of Rwanda TRACnet System documented how GIS is used in Rwanda to monitor HIV/AIDS services and program information. The system allows for the real-time population of the database through various channels (PDA, Smartphone, Web, cell phone, etc.) and facilitates near real-time decision support through forms and dashboards providing national-, district-, and facility-level summary data.

Community-Based Reporting

Identifying priorities for improving the quality of routine community HIV and AIDS information in Kenya described how routine community-level health data are uploaded to the national monitoring and evaluation HIV database in Kenya. The speaker shared

how GIS was valuable for identifying data quality issues and how challenges of data quality and gaps in reporting were bridged.

The use of GIS for mapping HIV/AIDS susceptible areas in Addis Ababa, Ethiopia showcased how GIS can be leveraged to plan, prioritize, and allocates resources to attenuate HIV/AIDS transmission. Using GIS and spatial analytics, it was possible to identify areas of discord between HIV/AIDS susceptibility and the spatial distribution of existing VCT centres.

The afternoon session was comprised of group breakout sessions in which participants were divided into six (6) geographic and linguistic groups. Each group was charged with enumerating data and technical capacity requirements, assessing current capacities, and then identifying linkages between the health sector and national mapping agencies and the challenges to the formation of these linkages.

This exercise also allowed participants to

- Share and discuss their experiences with linkages between the health sector and national mapping agencies;
- Identify potential areas of collaboration including the development of expertise directories, metadata catalogues and data standards;
- Identify other potential limitations or challenges not part of the original group exercise.

It is expected that further knoweldge and information will be gleaned from a subsequent analysis of the institutional capacity form circulated during the group work.

Major Outcomes

The workshop

- Confirmed the importance of forging robust networks between the health sector and the other key players, starting with the national mapping agencies, when it comes to the use of geographic information in support of HIV/AIDS programs;
- Found that overcoming the challenges in establishing and maintaining these linkages requires national-level leadership to ensure sustainability;
- Illustrated that National Spatial Data Infrastructures (NSDIs) are better built around addressing real problems instead of as an end in itself. In this context, the exigency of public health, beyond just HIV/AIDS, can be seen as an effective driver of NSDI implementations;
- Underlined the importance of several technical issues including understanding of the data flow.

A short survey conducted during the afternoon session also identified the following top three (3) constraints to health geoinformatics (in order of priority):

a. resources (overall, personnel, and financing);
b. spatial data (collection, availability, acquiring, and sharing);
c. awareness (collaboration and cooperation).

These results highlighted the importance of synergistic activities by those institutions involved in public health and NSDI activities in countries such as donor agencies and other partners including industry leaders, civil society and academia.

Notably, national mapping agencies and health sector representatives initiated new contacts during the workshop itself and committed to pursue them upon return.

Resolutions

On Enlisting National Mapping Agencies in the Fight Against HIV/AIDS

Recognizing

That HIV/AIDS is a major concern on the African continent that affects all aspects of society;

That there is a strong geographic dimension to the planning, implementation, and monitoring and evaluation of HIV/AIDS prevention, care and treatment programs;

That very often health is not taken into account when developing the National Spatial Data Infrastructure (NSDI);

Recommends

The strengthening of the linkage between the key players in the heath sector (Ministries of Health, Social Services and National AIDS Commissions) and the institution(s) driving the NSDI in country.

Welcomes

The organization of the Pre-CODIST workshop "Enlisting National Mapping Agencies in the Fight Against HIV/AIDS: Building Partnerships with Ministries of Health & Social Services and National AIDS Commissions" which took place in Addis Ababa, 27 April 2009.

Urges

1. Member States to ensure that the key players in the heath sector (Ministries of Health and / or Social Services as well as National AIDS Commissions) actively participate in the NSDI process to ensure that public health issues such as HIV/AIDS are addressed;

2. UNECA, with the help of partners, to establish a community of practice allowing for the transfer of knowledge and experiences integrating health into the NSDI process among countries on the African continent and discuss issues such as developing a common terminology (ontology);

3. Institutions acting in the effort to realize universal access to HIV/AIDS prevention and treatment to develop and implement a communication and advocacy strategy for the use of geographic information at the continental, regional and national levels;

4. Institutions involved in public health and NSDI activities in member States, including donor agencies, industry leaders, civil society and academia, to support all of the above, for example through public-private partnerships.

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