RELMA
REGIONAL LAND MANAGEMENT UNIT

Third Regional GIS Training

Financed by RELMA

26-30 May, 2003

Introduction

Welcome to the third Regional GIS Training course sponsored by RELMA. The course centers around 4 exercises introducing Geographical Information Systems (GIS) and Remote Sensing (RS). The thematic focus is on Natural Resources Management (NRM).

The exercises are built on two free GIS programs; ArcExplorer (created by ESRI as the free viewer version of ArcView) and DIVA-GIS (created by the International Potato Center). The functionalities of these two freeware are limited, but together they offer a wide range of options. The interfaces of these programs are also very similar to each other, and to the interface of ArcView 3.x. The weaknesses of the freeware are that the content of the data can not be easily edited or changed. Ordinary GIS *users*, however seldom edit the data sources, but use GIS mainly for analysis and creating map layouts – for which the two programs are well suited. A set of more advance free GIS programs are also included on the GIS_RELMA1.0 CD. You find them under the **software** directory.

The course will introduce a wide range of spatial data available over Africa. Most of this data is freely available over the internet, and some is distributed on the CD (in the **DATA** directory). How to access more datasets from the internet is given in the exercise, and in a separate document (Spatial Data and Applications for Environmental Studies in Africa). This document is in the **Document** directory.

As part of the course you will also receive the MudSprings ACT (Almanac Characterization Tool) database that comes together with the GIS program Awhere. The RELMA_GIS1.0 CD contains the key code for using this software (the key code is in the **Software\Awhere** directory, and the software itself on the MudSprngs ACT CD). By participating in the course and receiving the CD you must agree to register as an Awhere user and not to distribute the key code to a third party.

Objectives:

- To make participants aware of GIS and RS technologies for data analysis and NRM,
- To brief participants on how GIS could be used effectively for decision-making and modeling purposes,
- To advocate the use of GIS technology for planning purposes and implementation strategy, and
- To demonstrate the applicability of GIS/RS technology to a variety of NRM issues, particularly within East Africa.

Schedule:

Monday, 26 May

8.30: Registration, Ms Naomi Njeri.

8.45:Welcome and Opening Remark: Dr Chin Ong, RELMA.

9.00 Lecture: Introduction to GIS, data capture and storage, vector and raster data, field and object data, geometric data and topology, attribute data. Examples from Africa, Dr. Thomas Gumbricht ICRAF.

10.30: Tea/Coffee.

10.45: Exercise: Introduction to GIS and Digital Cartography using ArcExplorer, Dr Thomas Gumbricht, ICRAF.

12.30: Lunch.

13.30: Lecture: Data Management, Querying and Analyzing Geospatial Data; Data Quality, Projections and Georeferencing, Dr. Thomas Gumbricht, ICRAF.

15.00: Tea/Coffee.

15.15-17.00: Exercise (continued): Introduction to GIS and Digital Cartography using ArcExplorer, Dr Thomas Gumbricht, ICRAF.

Tuesday, 27 May

8.30-9.30: Lecture: Introduction to Remote Sensing, Satellite Platforms and Sensors, Image Processing and Classification. Examples from Africa, Dr. Thomas Gumbricht, ICRAF.

9.30-10.30: **Exercise: Introduction to GIS and Satellite Image Data Analysis – Lake Nakuru, Kenya**, Dr Thomas Gumbricht, ICRAF.

10.30: Tea/Coffee.

10.45: Lecture: Remote sensing of Forest Cover in Kenya: Dr Christian Lambrechts, DEWA-UNEP.

1145: Lecture: Land Degradation Monitoring in Lake Victoria Basin, Dr. Keith Shepherd, ICRAF.

12.30: Lunch.

13.30: Exercise (continued): Introduction to GIS and Satellite Image Data Analysis – Lake Nakuru, Kenya, Dr Thomas Gumbricht, ICRAF.

15.00: Tea/Coffee.
15.15: Exercise: Introduction to Data Capture with GPS, Dr Thomas Gumbricht, ICRAF.
15.45: Depart for Nakuru: Ms Naomi Njeri.
18.00: Arrive at Stem Hotel, Nakuru..
19.00: Presentation by Drs Chemilil & Oyando, Egerton University.
20.00: Dinner.

Wednesday, 28 May (Field day)

07.00: Breakfast.
08.00: Exercise (continued): Introduction to Data Capture with GPS, Dr Thomas
   Gumbricht, ICRAF.
09.00: Field Work in Nakuru Catchment, including Lunch.
14.00: Exercise (continued): Introduction to Data Capture with GPS, Dr Thomas
   Gumbricht, ICRAF.
15.30-17.30: Return to Nairobi

Thursday, 29 May

08.30: Exercise: Introduction to Modeling and Decision Support in GIS – Lake Nakuru,
   Kenya, Dr. Thomas Gumbricht, ICRAF.
10.30: Tea/Coffee.
10.45: Lecture: Introduction to Modeling and Decision Support in GIS – Lake Nakuru,
   Kenya, Dr. Thomas Gumbricht, ICRAF.
12.30: Lunch.
13.30: Exercise (continued): Introduction to Modeling and Decision Support in GIS – Lake
   Nakuru, Kenya, Dr. Thomas Gumbricht, ICRAF.
15.00: Tea/Coffee.
15.15-17.00: Presentation of Problems and GIS Potentials by Participants (5 minutes per
   participant).

Friday, 30 May
Chair: Dr. Azene Bekele-Tesemma, RELMA.
8.30: Lecture: How to get Started when you get Home: Software, Database Requirements;
   Introduction to MudSgrings ACT GIS Database. Ms Eija Soini, ICRAF.
10.00: Tea/Coffee.
10.45: Tour of ICRAF Decision Support System Lab & Demonstration, Ms.Eija Soini,
   Oscar Ochieng, ICRAF.
11.30: Feedback from participants, Dr. Azene Bekele-Tesemma.
12.00: Presentation of certificates to participants by Mr. Ake Barklund, director of
   RELMA.
12,30: Conclusion of Workshop: Dr. Azene Bekele-Tesemma.
13.00: Lunch.
Departure.