Introduction

Wise land-use planning involves making knowledgeable decisions about land use and the environment. Holistic planning involves input from multiple, interrelated data sources and types. In order to accomplish this feat a great deal of information must be considered simultaneously. Physical and chemical soil information is a vital component in the planning process, reflecting directly upon land-use suitability.

Traditional land-use planning involved many different sources of printed information such as soil survey manuals, topographic maps, aerial photographs, vegetation surveys, flood maps, hydrology maps, and property surveys to name a few. Each source contributed an important characteristic to the final decision. Human decision-makers were challenged to keep track of all this information at once, to understand the interrelationships, and to correlate multiple data sources at single locations.

Today, advances have been made towards extraordinary digital systems for utilization in land-use planning. Computer programs including decision support systems (models), Geographic Information Systems (GIS) contribute to the speed and efficiency of the overall planning process.

Geographic information system (GIS) technology is used throughout the agricultural industry to manage resources, increase yields, reduce input costs, predict outcomes, improve business practices, and more.

The capability of GIS to visualize agricultural environments and workflows has proved to be very beneficial to those involved in farming. The powerful analytical capabilities of the technology is used to examine farm conditions and measure and monitor the effects of farm management practices including crop yield estimates, soil amendment analyses, and erosion identification and remediation. GIS can also be used to reduce farm input costs such as fertilizer, fuel, seed, labor, and transportation. In addition, farm managers use GIS to submit government program applications, simplifying what used to be time-consuming multistep processes.

From collecting data in the field with mobile GIS to the analysis of remote-sensing data at the farm manager’s office, GIS is playing an increasing role in agriculture production throughout the world by helping farmers expand production, reduce costs, and manage their land more efficiently.

Enabling Local actors

RAIN is committed to supporting Africa’s efforts in the advancement of technology to support the efforts in agriculture development and climate change adaptation and resilience building.

Together with the Netherlands Fellowship Programme (NFP), RAIN will carry one a 1 month long practical ‘GIS focused’ tailor-made training at the request of the West Hararghe Bureau of Agriculture and Rural Development (WHBoARD), Ethiopia. The WHBoARD is mandated to enhance agricultural and natural resource productivity.
through agricultural extension activities, technologically supported community-based agricultural and natural resource programmes for achieving food security and improved livelihood. As Ethiopia is one of the horn of Africa countries constantly harassed by the varying rainfall patterns, this GIS training is one of the timely interventions to improve the skills and capacities of the local water and agriculture bureaus.

**WHBoARD Constraints**

Limited capacity in information technology to better implement our agriculture operations and provide good advice to the local farmers on what to plant, water flows and erosion identification and remediation.

Most agricultural and natural resource management experts do not have sufficient knowledge and skills to use and apply Geo-information (GI) and Remote sensing (RS) tools. As a result RS and GI are not integral part of agricultural development and natural resource management programmes.

The lack of skill in this regard had made the zone to use conventional techniques of data collection, documentation, agricultural productivity forecasting, and monitoring and evaluation systems that are time consuming, costly, and in some occasions do not deliver products on the required time.

**GIS Training expectations**

Practical oriented trainings will provide hands on experience in using and applying fundamental RS and GI technologies in agricultural, watershed and natural resource management.

Developing geo-database at zonal level that will store and provide detailed geo-data of the zone for various applications.

Building the institutional capacity of the organization to set up the infrastructure to finance the machinery and the maintenance to keep such technology-assisted skills running.

Establish internal knowledge systems that are needed to interpret and act upon the collected data.

Building the staff capacity through trainings to introduce new applications and innovative techniques that increase the efficiency of our work.

**Topics**

- Fundamentals of RS and GI
- RS and Geo- data collection and development of geo-database including practical field based exercise
- RS and GI application for watershed analysis including practical field based exercise
- RS and GI for land use/land cover mapping including practical field based exercise
- Environmental change detection
- Application of GI and RS for land suitability analysis including practical field based exercise
- Change management with emphasis to gender mainstreaming

**Training Approach and Methodology**

The training course conceptually focuses on “learning” for participants than resource persons and takes a practical problem solving approach.

West Hararghe Agriculture office will take the lead in selecting the trainees based on their background and area of work.

We will start with preparatory reading, providing reading material and small exercises to stimulate the participants and ready themselves with questions that arise from their reading.

Plenary lecture presentations/discussions will be used to stimulate discussion and provide to the participants new information and experiences.

Small group working sessions: Participants will be divided into smaller groups for a lot of practical work, assignments and discussions.

Demonstrations and practical: Most GIS and earth observation principles and practical options will be demonstrated, unless or otherwise with internet using real time maps. In feasible cases, participants will also be expected to each try out in practical sessions.

Field Visit: Participants will undertake practical in land assessment and water flow mapping on select landscapes.

The participants will be provided with hand outs and other publications as reference materials.
Date and Location
From July 7th to July 31st
Hosted in Chiro, West Hararghe, Ethiopia
Interest in similar trainings; Contact RAIN Foundation

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