

Motivating Mankon Farmers: Shining a Light on GIS in Cameroon

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Abstract

Farmers in Cameroon are stuck in a cycle of subsistence farming due to a lack of education, information, and resources. Climate change has made the farmer's predicament only worse. As they toil to grow enough food for their family, there rarely is excess to sell into the market for a profit. Information about modern farming techniques and practices has largely not reached the farmers of Cameroon. Farmers cultivate on small plots of land that are being devastated by poor management of soil nutrients, misuse of fertilizers, and indiscriminate selection of crop locations. Geographic Information Systems (GIS) have already proven their utility in other developing countries. By implementing GIS, farmers in Cameroon will be empowered with vital information to better manage their crops, resulting in greater yields and decreased operating costs. GIS's integrated satellite maps and locational information capability can provide the Cameroon farmer with easy-to-read and highly visual geographic information. The overlaid maps will bring together critical information to make informed decisions on where to plant, fertilize, and irrigate crops. Instructed by our sponsor, Nju Divine Nde (founder of the Village Light Fund in Cameroon), our project focuses on producing a promotional video and an informational poster that will motivate farmers to implement GIS into their farming practices and will also provide a foundation for future educational initiatives. The video and poster will teach farmers about the benefits of implementing GIS and the resulting long term financial rewards.

Background

- Almost 75% of the Cameroonian population is involved in agriculture
- Close to 50% of Cameroon's total exports (which accounts for almost 43% of the country's GDP) are agriculturally based
- Less than 5% of Cameroon's farmers employ modern farming techniques (many practice destructive slash and burn land clearing)
- Approximately 48% of Cameroonians live in a state of poverty; living on less than one dollar per day
- Only 15% of the land is arable with private farming being limited to one hectare of land

Project Goals

Under the guidance of our sponsor, the focus of our project was on the Northwest region of Cameroon called Mankon. The main objective of our project was to motivate the farmers of Mankon to become interested in applying GIS technologies to their farming. In order to do this, our team produced video materials that demonstrated the advantages of GIS to Cameroon farmers. In addition we developed printed materials that would accompany the video. Once farmers are motivated about GIS use, future research groups either inside or outside of Cameroon can utilize these materials to further popularize GIS and spread GIS use in Cameroon.

Farming in Cameroon

Farmers in Cameroon are caught in a cycle of subsistence farming. They cannot afford the risks and costs involved with planting larger crops in order to turn a profit. This is mostly due in part to poor land management practices. For generations farmers have worked the same plot of land, not allowing the soil to rest which, leads to soil degradation. In addition, climate change is also having disastrous effects on growing conditions. The end result is crop loss, which is wasteful and costly. Most farmers still rely on manual labor and do not have the means to fertilize their crops.



Many farmers in Cameroon use slash and burn agriculture techniques in order to expand their farmlands so they can get the nutrients they need for their crops. However, this practice leads to deforestation and environmental problems such as landslides and soil erosion. While this practice may have short term benefits, it is not sustainable and will ultimately degrade the soil even further.



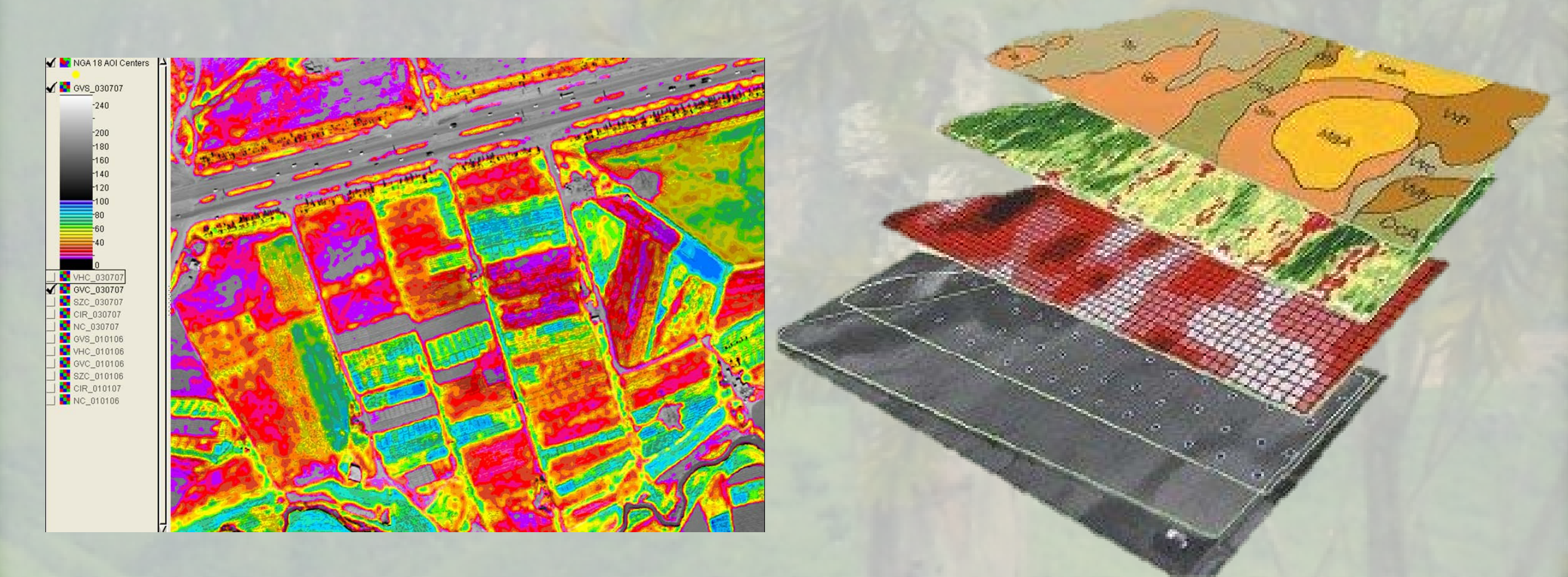
Use of GIS

GIS (Geographic Information System) is a technology that allows for visual representations of data to be overlaid on easy-to-read satellite maps. Geographic information can be plotted and displayed in fine detail. By studying and analyzing these maps farmers can make precise and informed farming decisions. GIS helps identify:

Soil Nutrient Location	Optimum Irrigation Schemes
Prominent Land Features	Fertilizer Utilization
Field Layout	Crop Rotation

This gives farmers the ability to make informed decisions about how to plant and care for crops. Lastly, GIS can also be used for precise yield tracking which will give farmers a vital link to their success.

This means that GIS decreases the overall costs and risks involved in farming which represents a significant achievement for local agriculture.



Future Goals

- Involvement of the sponsor together with graduate students to host workshops on how to use the GIS
- Test run GIS with Mankon farmers to measure increases in crop yields
- Help stop current farming techniques that are depleting the land
- Gather and collect soil sample data

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