

Report of the WORKSHOP on Principles of Remote Sensing and Geographic Information System held from November 2 – 6, 2009 at the African Regional Centre for Space Science and Technology Education-English, Obafemi Awolowo University, Ile-Ife, Nigeria

1.0 Introduction

The need to understand the environment we live in and its dynamics is crucial in managing and solving environmental problems. There is therefore the need for capacity building which is an essential step, not only for understanding the nature and intensity of environmental problems at hand, but also to acquire the ability to assess, monitor and analyze these problems with the major aim of proffering solutions amidst the several options. It is in line with this that a training workshop was organized by the African Regional Centre for Space Science and Technology Education-English (ARCSSTE-E) in collaboration with the Space Applications and Environmental Science Laboratory (SPAEL), Institute of Ecology and Environmental Studies, Obafemi Awolowo University, Ile-Ife and the Regional Centre for Training in Aerospace Surveys (RECTAS).

2.0 Attendance

A total of eleven (11) participants from four Institutions attended the training workshop. Two of which are from National Population Commission (NPC), seven from National Space Research and Development Agency (NASRDA), and two from Ahmedu Bello University (ABU), Zaria.

3.0 Lectures

The workshop was divided into three major sessions: Presentations, Practical Sessions

and Field Visits. The workshop took off with a presentation on Introduction to Remote Sensing / Geographic Information System. There was a presentation before every practical session took off. The major software used was ArcGIS 9.1; however, the participants were also introduced to ILWIS 3.1 for a day.

Presentations

A total of eight (8) power point presentations were delivered during the period of the workshop viz:

1. Satellite products application areas and marketing
2. Basic Concepts of Remote Sensing and GIS
3. Creating and Editing Shapefiles
4. Vector analysis and attribute data handling
5. Working with Raster Data
6. Visualization, display of satellite imageries and Image enhancement techniques
7. Multispectral Image Classification
8. Introduction to AFREF

4.0 Practical Sessions

The practical sessions in which more time was allotted gave participants the opportunity to handle the software themselves. A brief presentation was given before every practical session. The practical sessions included exercises and pilot project. Resource persons guided the participants through every practical session.

Field Visit

Participants went on a field visit to RECTAS where the African Reference Frame

(AFREF) is located and were adequately informed about the concept and rationale behind establishing AFREF. Field visits were also made to various places in OAU and in the town where they were taught how to handle a GPS and take readings. These points were identified on the Landsat image of Ile-Ife while AFREF was identified on the map of Nigeria.

Pilot Project

The Training Workshop was wrapped up with a pilot project presentation. The participants presented a pilot project.

5.0 Conclusion

The workshop ended with a closing address by the Director of ARCSSTE-E, Dr. Akinyede. He appreciated all the participants and encouraged them to come back for additional and in-depth knowledge of the environmental problems in Nigeria and how they can use remote sensing/geographic information system softwares in proffering solutions. Dr. W.B. Malgwi from ABU, on behalf of the participants appreciated the organizers of the workshop for a job well done. He also recommended that more workshops of this nature should be organized and the duration extended.

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November, 2009.

Table 1: List of Participants

S/N	NAME	ADDRESS
1.	MR AYENI EMMANUEL	NATIONAL POPULATION COMMISSION, ABUJA
2.	MR HABILA MAGAJI	NATIONAL POPULATION COMMISSION, ABUJA
3.	MR OMWUBUARIRI E. IKECHUKWU	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
4.	MR EGURE DANIEL ASISHANA	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
5.	MR USMAN ALALU	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
6.	MS PATIENCE O. NGAJI	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
7.	MRS JOY U. OLAYIWOLA	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
8.	MR AMUJO SUNDAY	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
9.	MR DANLADI Y. YARO	NATIONAL AGENCY FOR SPACE RESEARCH AND DEVELOPMENT AGENCY, ABUJA
10.	DR. ABU SUNDAY THEMAN	AHMEDU BELLO UNIVERSITY, ZARIA
11.	DR. W.B. MALGWI	AHMEDU BELLO UNIVERSITY, ZARIA



Opening address and participants with the some resource persons



Lectures and practical sessions



Field Visit

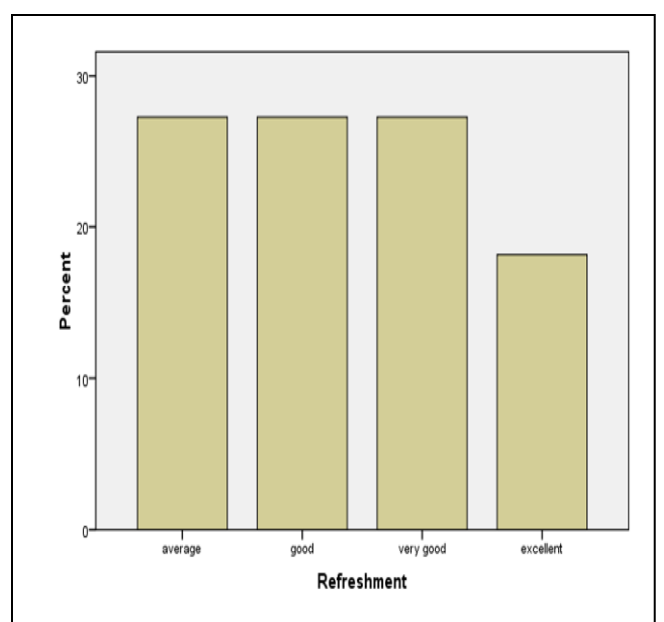
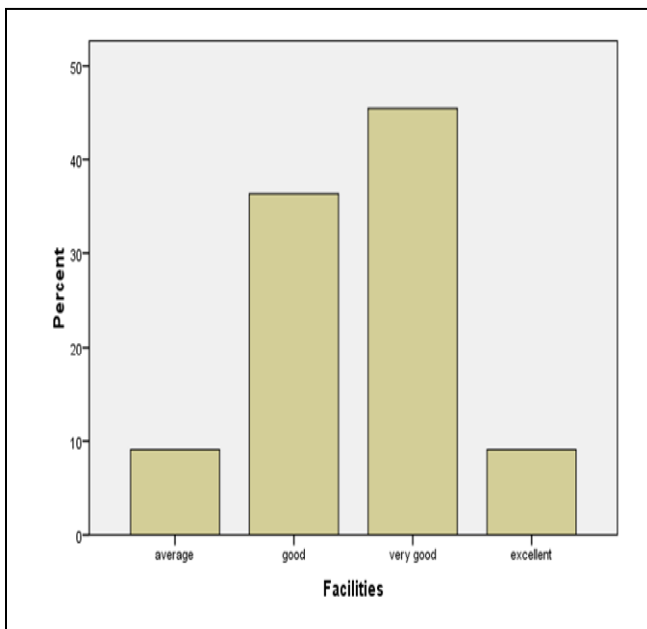
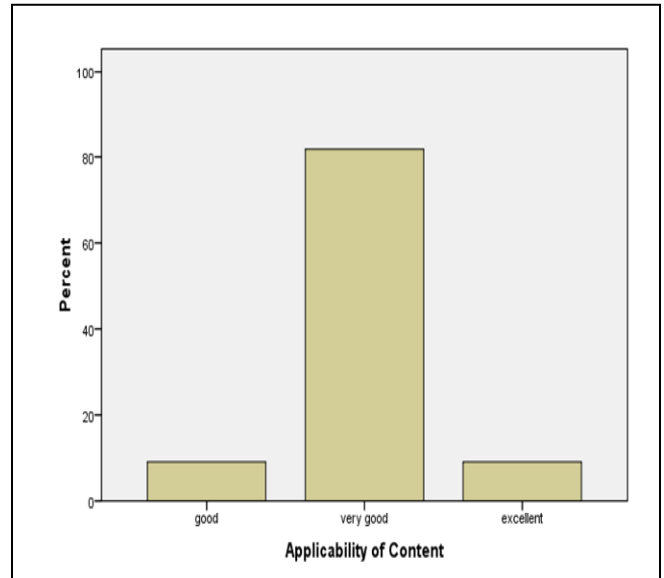
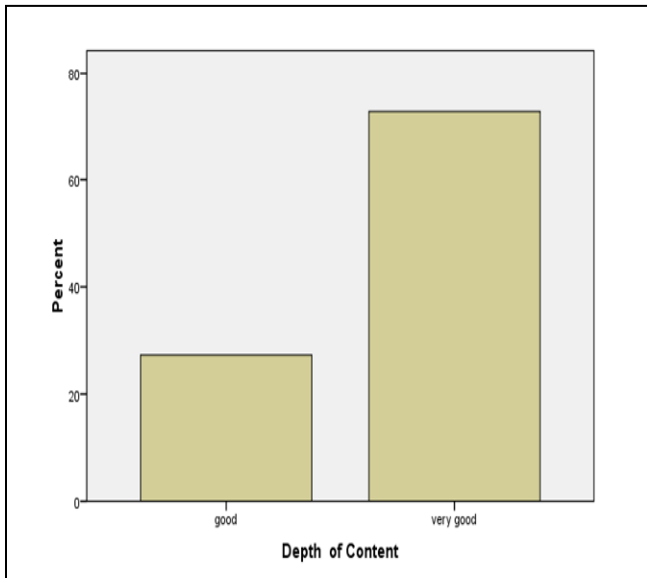
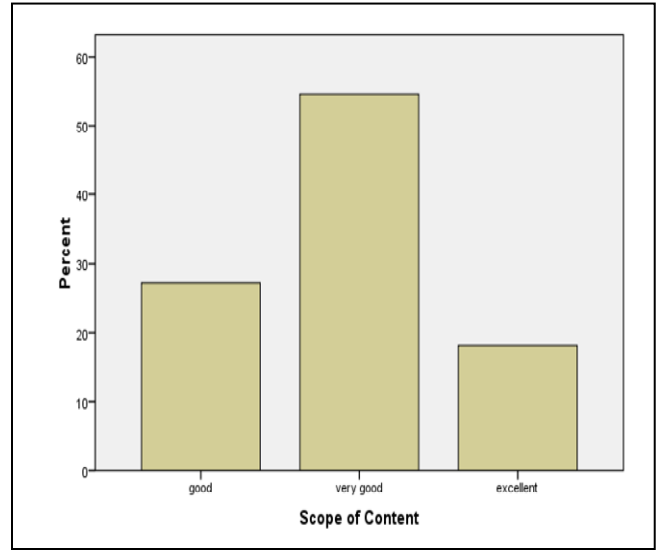
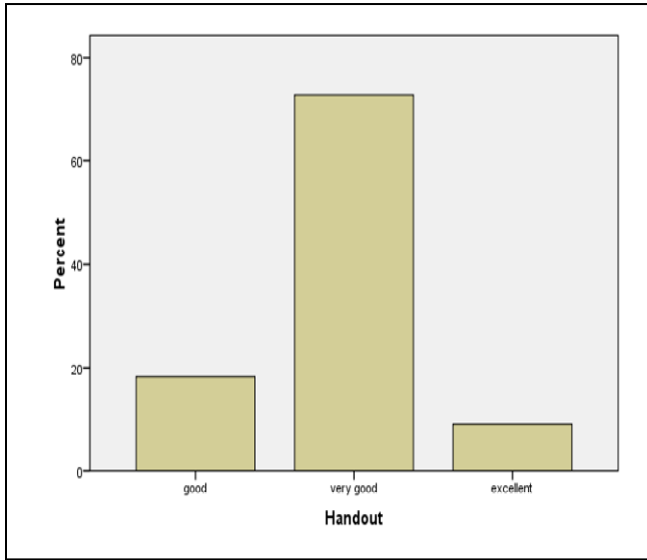
EVALUATION REPORT

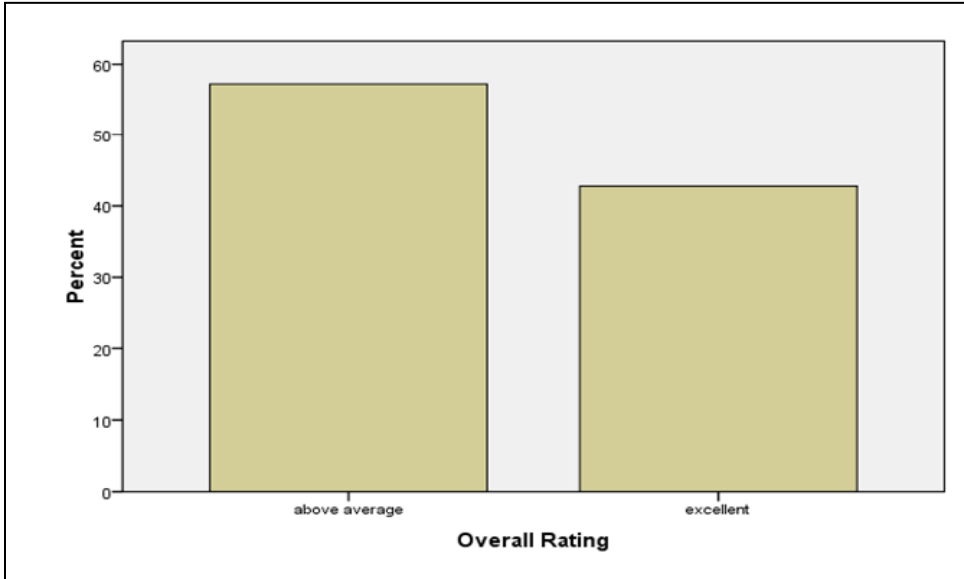
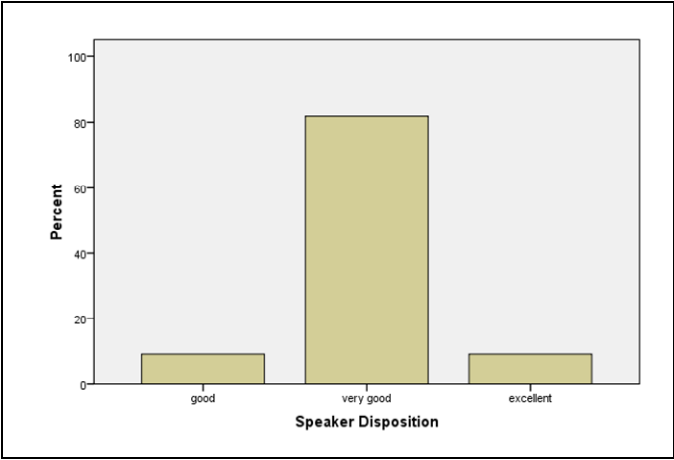
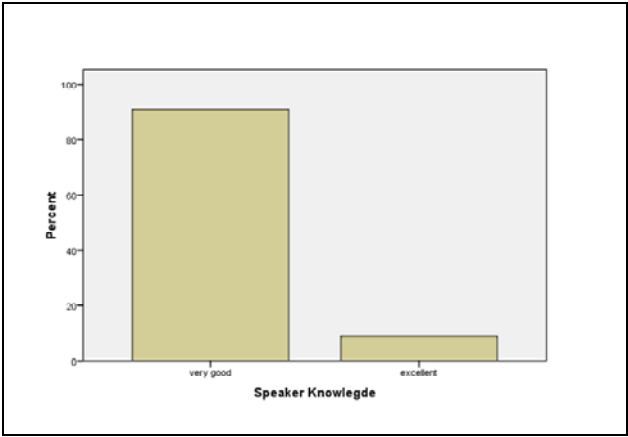
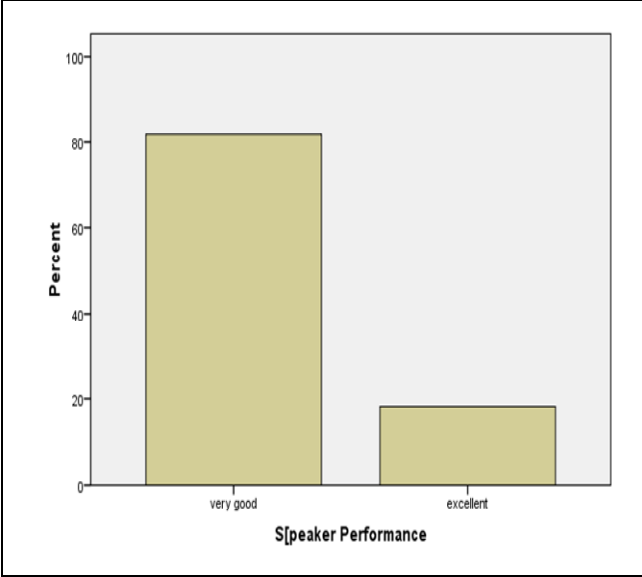
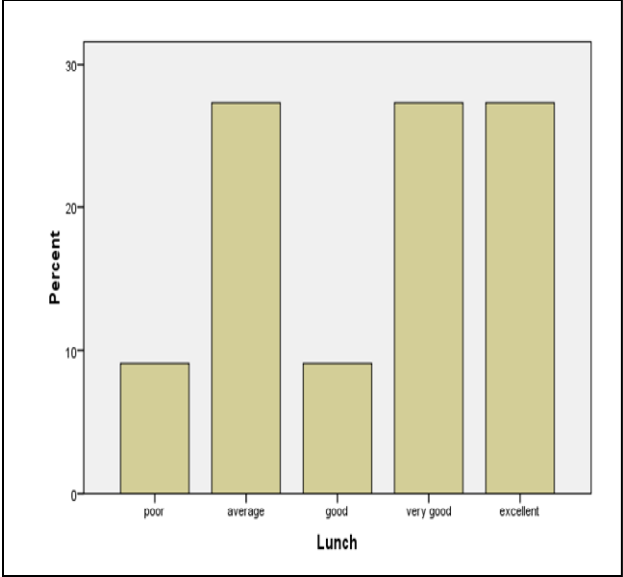
Evaluation form as shown below was issued to every participant.

Table 2: Assessment of the workshop by the participants using ten indices.

Indices	Marks Scored (Percentage)
Handout	
Scope of Content	
Depth of Content	
Applicability of Content	
Facilities	
Refreshment	
Lunch	
Speaker Performance	
Speaker Knowledge	
Speaker Disposition	
Overall Rating	

Analysis of Evaluation Form of the Workshop on principles of remote sensing and geographic information systems is shown below.





PROGRAMME

Day 1: Monday, November 2, 2009

9:30am–10:00am	Registration/Sign-in: pick up course materials and name badge
10:00am–11:30am	Opening Ceremony <ul style="list-style-type: none"> • Welcome Address • Satellite products application areas and marketing • Introduction to AFREF
11:30am–11:45am	Tea Break
11:45am–1:00pm	Basic Concepts of Remote Sensing and GIS <ul style="list-style-type: none"> • Introduction to GIS • Introduction to remote sensing
1:00pm–2:00pm	Lunch break
2:00pm–3:30pm	Introduction to ArcCatalog and ArcMap <ul style="list-style-type: none"> • Introduction to ArcCatalog • Introduction to ArcMap • Exercise
3:30pm–3:45pm	Break
3:45pm–5:00pm	File Formats and Map Documents <ul style="list-style-type: none"> • Moving around a map • Measuring distances • Examining the attribute table

Day 2: Tuesday, November 3, 2009

9:00am–10:30am	Creating and Editing Shapefiles <ul style="list-style-type: none"> • Creating a point theme • Creating a line theme • Creating a polygon theme • Exercise
10:30am–10:45am	Tea Break
10:45am–12:00pm	Vector analysis and attribute data handling <ul style="list-style-type: none"> • Spatial Queries • Search by attribute • Search by location • Exercise
12:00pm–1:00pm	Lunch Break
1:00pm–3:30pm	Working with Raster Data <ul style="list-style-type: none"> • Raster file formats • Interpolation of raster data
3:30pm–3:45pm	Break
3:45pm–5:00pm	Raster Analysis <ul style="list-style-type: none"> • Data conversion • Raster calculations and areas estimation

Day 3: Wednesday, November 4, 2009

9:00am–10:30am	Visualisation and display of satellite imageries <ul style="list-style-type: none"> • Visualizing single band images • Displaying multiple band images • Image enhancement
10:30am–10:45am	Tea Break

10:45am–12:00pm	Image enhancement techniques <ul style="list-style-type: none"> • Contrast enhancement • Histogram equalisation • Spatial enhancement • Colour composite
12:00pm–1:00pm	Lunch Break
1:00pm–3:30pm	Multispectral Image Classification <ul style="list-style-type: none"> • Sampling • Classification methods and algorithm • Unsupervised Classification
3:30pm–3:45pm	Break
3:45pm–5:00pm	Classification exercise

Day 4: Thursday, November 5, 2009

9:00am–10:30am	Visualization <ul style="list-style-type: none"> • Creating layouts • Adding a scale, north arrow, grid and legend • Making a more detailed map over a region • Locating point of interest in a regional map • Data export formats
10:30am–10:45am	Tea Break
10:45am–12:00pm	Field work <ul style="list-style-type: none"> • GPS field survey • Data input and analysis • Exercise
12:00pm–1:00pm	Lunch Break
1:00pm–3:30pm	Pilot Project and Report Writing
3:30pm–3:45pm	Break
3:45pm–5:00pm	Case Studies of Application areas of Geospatial Technologies <ul style="list-style-type: none"> • Environmental management • Risk management • Interpolation • Water resources management • Planning, transportation and logistics

Day 5: Friday, November 6, 2009

9:00am–10:30am	Evaluation and Presentation of pilot projects
10:30am–10:45am	Presentation of Certificates and Closing Ceremony
10:45am–12:00pm	Departure