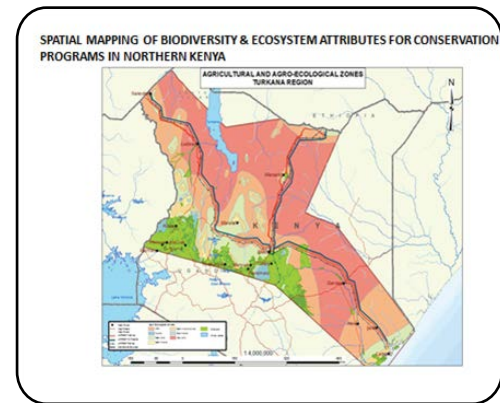
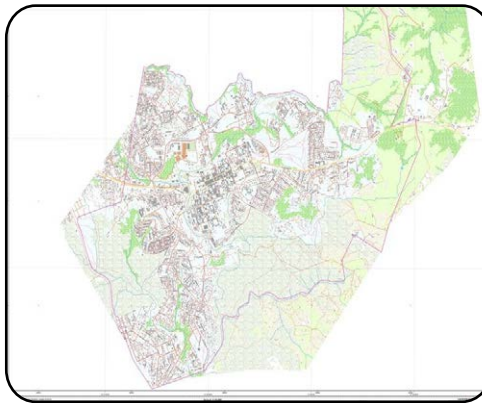
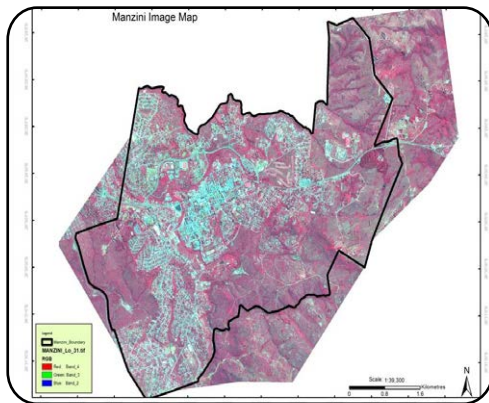




**RCMRD**

**Regional Centre for Mapping  
of Resources for Development**

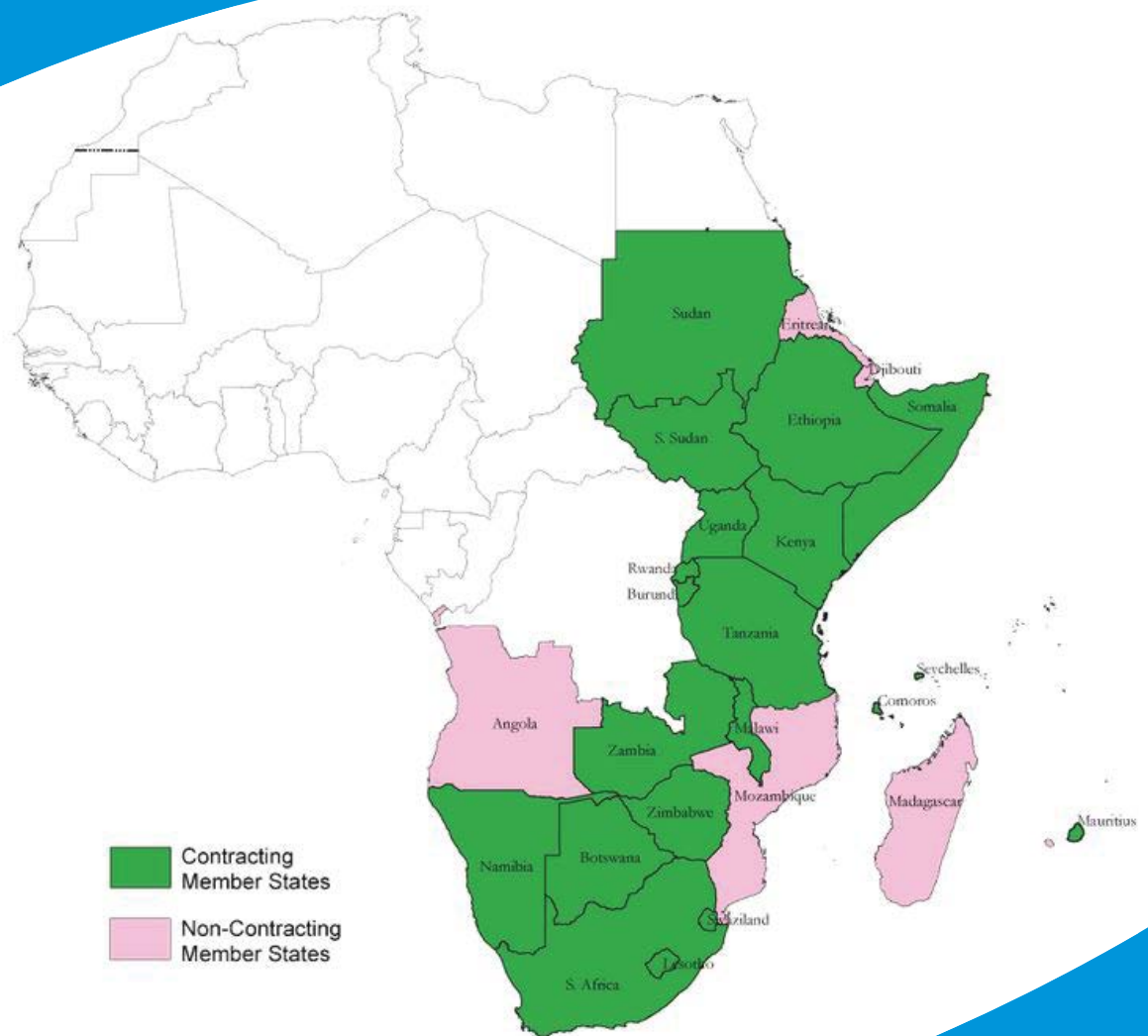


**Annual Report 2014**



# Our Vision

To be the premier Centre of Excellence in provision of Geo-information services



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*Dr. Hussein Farah  
Director General*

development through the use of geo-information and allied ICT products and services.

In 2014, we implemented the last annual Work Plan in our 2011-2014 Strategic Plan. The plan was intended to guide RCMRD staff to systematically implement the necessary broad-based activities that deliver various intervention strategies outlined in the plans. The activities focused on capacity development, project implementation, advisory services and research and development.

Our capacity development programme continued to expand in terms of application areas and number of persons trained. In 2014, we trained more than 1,600 nationals of member States, the highest ever in one year. The major part of this number came from an ambitious training program in Ethiopia to provide skills in the area of Cadastral Surveying, Urban Planning Land Registration, Property Valuation and Land Information System to support Urban Land Development and Reform programs. Other new training programs undertaken are Water Quality Analysis of Lakes, Innovations in Land Administration, Disaster Risk Reduction and Land Cover Mapping.

In project implementation, we undertook twenty projects and advisory services. Among these are Hazard and Vulnerability Mapping in Malawi and Kenya, Topographic Map Updating in Namibia, Land Slide Risk Mapping in Rwanda and Forest Monitoring in nine member States. We continued to provide advisory services in the establishment of National Spatial Data Infrastructure. We provided support to Mauritius, Rwanda, Ethiopia, South

It's with great pleasure that I present the 2014 RCMRD Annual Report. I am pleased to report that with the support of the members States and partners, we made significant progress and achieved major milestones in fulfilling our mission of promoting sustainable

Sudan, Zambia and Swaziland. In 2014 Three Hundred and Fifty five pieces of survey instruments were serviced for member States.

In research and development, we explored the extension of flood forecasting tools in Namibia, Zambia and Malawi. This will contribute to efforts to establish early warning systems for Disaster Risk Reduction (DRR). Other research topics undertaken with partners were crop yield modeling, land suitability modeling and water quality mapping.

In 2014, we reached three major milestones. First is the successful installation of a new direct satellite receiving station. This will enable us to provide better services in vegetation and crop monitoring, floods and forest fires early warning and other application such as water resources and biodiversity. Secondly, we were awarded ISO Quality Management System certification. This will make our internal work flows comply with international standards and ensure customers are satisfied with our services. Thirdly, for the first time in our region, together with our partners we provided grants to fourteen institutions in eight member States. The grants are expected to demonstrate the usefulness of geo-information in national development.

The 48th Governing Council and 9th Conference of Ministers meetings were held in Addis Ababa, Ethiopia from 10th to 18th November 2014. Seventeen member States and the United Nations Economic Commission for Africa attended the meetings. The Governing Council approved the 2015 Annual Work Plan and Budget. It also approved changes in the terms of services for staff. The Conference of Minister reviewed the implementation of the RCMRD 2011-2014 Strategic Plan and approved the new 2015-2018 Strategic Plan.

In conclusion, I wish to most sincerely thank RCMRD staff, our member States, development partners and clients for their support and cooperation that significantly contributed to our achievements in 2014. I also take this opportunity to appeal to them for their continued support as we tackle the challenges in the coming years and achieve our aspirations to be a premier centre of excellence in the provision of quality geoinformation services.



# REMOTE SENSING, GIS AND MAPPING DEPARTMENT

In the year 2014, the Department of Remote Sensing, GIS and Mapping successfully implemented activities that were included and approved in the 2014 work plan. The Annual Work plan itself was derived from the 2011-2014 Strategic Plan. The Department implemented various activities, and also provided services to member States and other stakeholders during the reporting year. The services that were provided are grouped into the following categories; project implementation, training and workshops, advisory service, research and development and Data dissemination services.

## Project Implementation Service

During the reporting year 2014 the Department implemented over fourteen major Remote Sensing, GIS and Mapping projects at regional and national level. The major ones are the following:

### SERVIR-Eastern and Southern Africa

The following activities were implemented under SERVIR-ESA Project:

- Flood Forecasting Modeling (CREST) was further expanded to other member States during the year in order to include countries with flooding problems. Training on CREST Model was provided to staff of the Ministry of Water and Environment, Uganda. Calibration of the model for Manafwa basin in Uganda was undertaken. Nzoia basin forecast model was set to run on real time mode. Data for Sebeya basin in Rwanda was also received and integrated into the model calibration system.



CREST Stream Flow Viewer

- The Green House Gas Emission (GHG) inventory Land use and Land cover mapping project has been ongoing since 2012 in six member States namely: Malawi, Rwanda, Zambia, Namibia, Botswana and Tanzania. Implementation of project activities was completed during the reporting year. Up-to-date land use / land cover maps, methodology manual, report and other auxiliary data set were handed over to contact Ministries in the member States. Product dissemination workshops and training on products usage were also conducted in three of the countries as closing part of the project. Three additional member States namely: Ethiopia, Mauritius and Uganda were also selected for similar mapping under SERVIR-Africa 2014/15 funding programme.

- Initial awareness creation and stakeholders identification workshop was conducted in Ethiopia with the support from Ethiopian Mapping Agency and Ministry of Environment. The mapping will be done for three time series. Auxiliary data collection was completed in June 2014, initial satellite data processing and interpretation was undertaken. Training for two remote sensing technicians on data processing and interpretation was also conducted. Currently field verification is being undertaken. Planning and preparations for land use land cover mapping for Mauritius is at advanced stage. High resolution image such as SPOT 5 data is proposed for use due to relatively small surface area of the country.



Rwanda Land Cover Data Dissemination Workshop



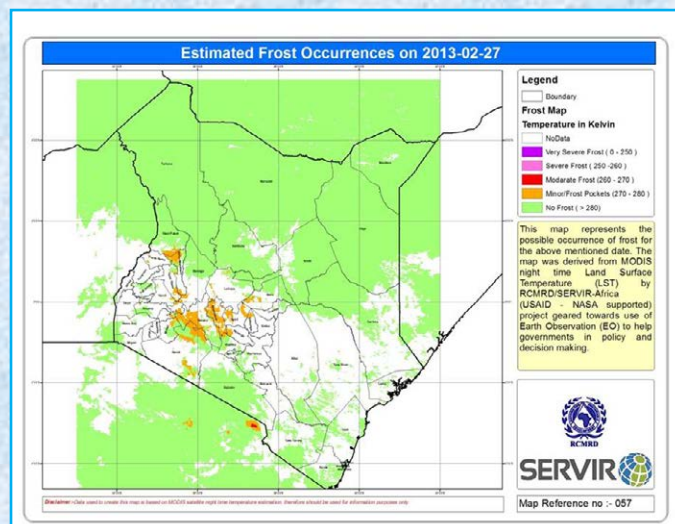


Zambia Land Cover Data Dissemination Workshop

- Data and products dissemination service under SERVIR-ESA project continued to disseminate data and products (satellite data, maps, reports and processing tools) to online users. Proper data archiving hardware and search tool was developed and is being used intensively.
- SERVIR-ESA has also been supporting NASA Applied Science Research activities that are being implemented on various thematic topics in the region by research institution from USA and Africa. The following areas of research were covered under SERVIR Applied Science Research:

◇ The Crop yield modeling RHEAS (Regional Hydrologic Extremes Assessment System) framework which includes assimilation software was completed and historical crop yield data for Kenya was collected data has been ingested in order to undertake crop yield estimation for Kenya.

◇ On Frost Mapping, historical Frost events data (2000-present) was downloaded and analyzed in order to quantify affected areas and compare the result with recorded events. Raster data catalogs were also prepared for frost datasets. frost is a major problem that damages cash crops like Tea and Coffee grown in highlands in Ethiopia and Kenya.



Frost Monitoring and forecasting

- USAID continued to fund activities related to demand development for SERVIR products and services in RCMRD member States. The activities were implemented by RCMRD in collaboration with called Development Alternatives Incorporated (DAI), a USA company that was contracted by USAID. The main tasks under this demand development programme include: users engagement, product catalogue development, monitoring and evaluation, outreach and communication, small Grants programme, sustainability and national Geoinformation Committee activities.



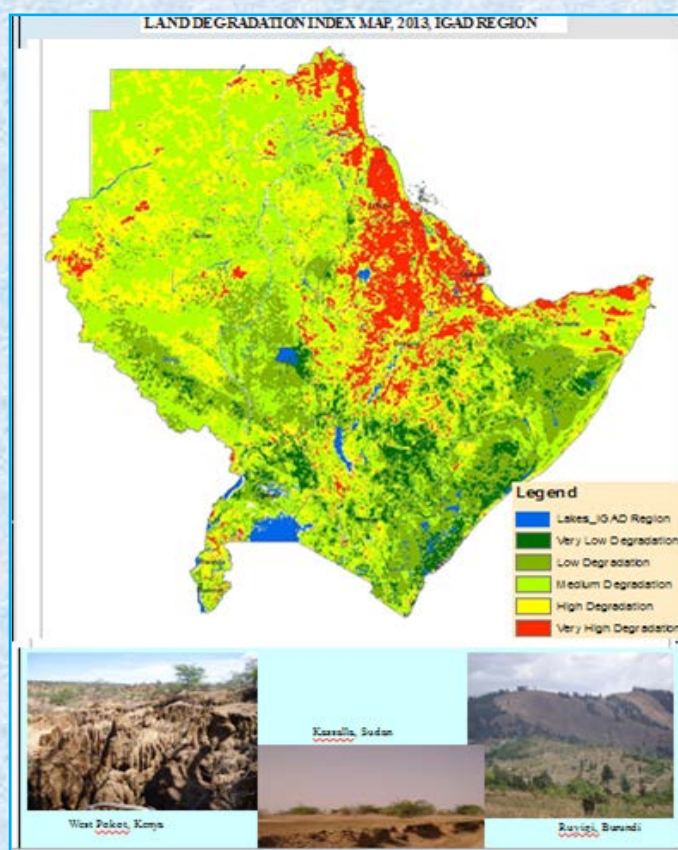
Awarding of Grants Ceremony



## MESA Land Degradation Assessment and Forest Monitoring Services Project

The Department started implementation of three years project on Monitoring of Environment and Security for Africa (MESA) that is funded by European Union in collaboration with the African Union. The project has two services namely: Land degradation assessment and Forest Monitoring services that will be implemented in Ethiopia, Uganda, Burundi, Rwanda, South Sudan, Sudan, Kenya, Djibouti and Eritrea.

The land degradation service is consolidation of what was achieved under the First Phase of the Project and hence products that were developed under are being enhanced and disseminated. However, the Forest Monitoring service is a new component hence all product development cycle is being followed. The product development cycle starts with user need identification, definition of products and services, development of processing chain, validation and calibration and finally products dissemination. The need assessment exercise has been done connection with a kick of workshop bringing together technical officers from all the project countries. Product and service definition and specification was also undertaken during the reporting year.



## Namibia Topographic Map updating Project

This project was implemented in collaboration with two organizations namely ADCC from India and WETU GIT, a local Namibian company. The Project was funded by the Government of Namibia. RCMRD role was to prepare implementation guidelines and assure quality of products and procedures. The objective of the project was to provide an updated Namibia 1:1,000,000 topographic dataset covering the entire country (Namibia). The existing maps at this scale were last revised in 1994 and in 2005. This project focused on the revision of the dataset revised in 2005 and the production and printing of cartographic database of the same maps. The Government of the Republic of Namibia, through the Delimitation Commission is reviewing the administrative boundaries; this map is therefore prepared to cater for the new established boundaries. The activities of the project were completed during the reporting period, and the final report is under preparation.

## National Assessment of Degraded Lands (LADA) Project

The Department was awarded consultancy service on National Assessment of Degraded Lands (LADA) and Development of Recommendations on Reclamation by the Ministry of Water and Irrigation, Kenya. The main objective of the consultancy service was to assess levels of land degradation and propose recommendations on national land reclamation. Multi-temporal land degradation status maps were produced at national level using a high resolution land degradation assessment model. The project activities were successfully completed and the products were submitted to the client in June 2014.



*Land degradation hot spots*



## Capacity Building Project for Ministry of Urban Development, Housing and Construction, Ethiopia

The Department worked jointly with the Department of Land Surveys and Management in implementation of a capacity building project “Assessment and training in land and land related fields” for the Ministry of Urban Development, Housing and Construction in Ethiopia. The project is one of the largest and unique projects that the Centre has been implementing. The training and assessment activities are going to be implemented in five training and assessment centers in Ethiopia. The training will cover twelve occupational standards that are subdivided into three professional levels. The aim of the project is to train and certify 4,800 professionals working in the land sector in the country during nine months.

The competences to be acquired are cadaster Survey, Urban Planning, land registration, real estate management and valuation. The implementation of the project is being undertaken in collaboration with Land Equity International (LEI) from Australia, PanAfric Plc. And GeoSAS Plc., from Ethiopia. The national competency centers and technical and vocational colleges are also involved in the training syllabus development and certification of the candidates. During the reporting year over 1,500 professionals were trained, assessed and certified.



Training and assessment activities, Ethiopia

## Kilimo Trust Project

The main objective of this project was to use existing geospatial datasets to develop a geo-relationship between the production and consumption of Rice in the East Africa region (Kenya, Uganda, Tanzania, Burundi and Rwanda). The project deliverables were: Agro-ecological suitability map for rice production in East Africa, map showing the current centres/areas of actual production of rice, identification of current rice consumption centres, and infrastructure maps in the region. The project goal is to use the outcome of the analysis to promote more intensive regional trade in food commodities. The project activities were completed and the deliverables were handed over to the client during the reporting year.

## Kenyan Ministry of Environment Project

The Kenyan Ministry of Environment Project involved integrated ecosystem studies on five selected environmental and biodiversity hotspots. The project started in 2012, and was implemented in collaboration with the Department of Resource Surveys and Remote Sensing (DRSRS). During the reporting year, the project activities were completed and the reports and other deliverables such as maps presented to the Ministry. Five comprehensive reports were prepared for the five ecosystems hotspots. The reports have been peer-reviewed and the final publications are in the process of being prepared.

## AGRICAB Project

AGRICAB is European Commission funded three year project that was started in October 2011.

The project is dealing with sustained data provision, development of predictive models translating data into information, and knowledge application to the real-world circumstances in the area of crop and livestock management. The Department is involved in the capacity building and knowledge dissemination for better management of agriculture. In this regard, three regional workshops were organized at different location; Johannesburg, Lusaka and Addis Ababa during the last three years. The workshop in Addis Ababa was organized under umbrella of Information for Meeting Africa’s Agricultural Transformation and Food Security



Goals (IMAAFS), and five participants from member States were sponsored with funding from AGRICAB.

## Simulating Innovation for Global Monitoring of Agriculture (SIGMA)

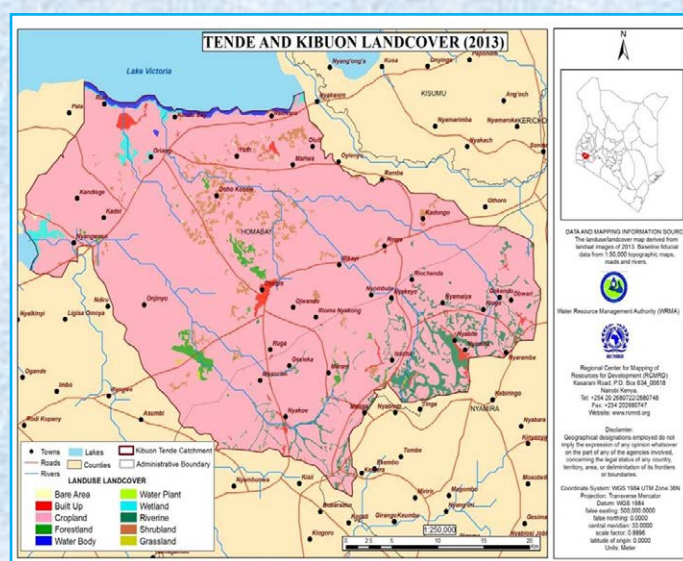
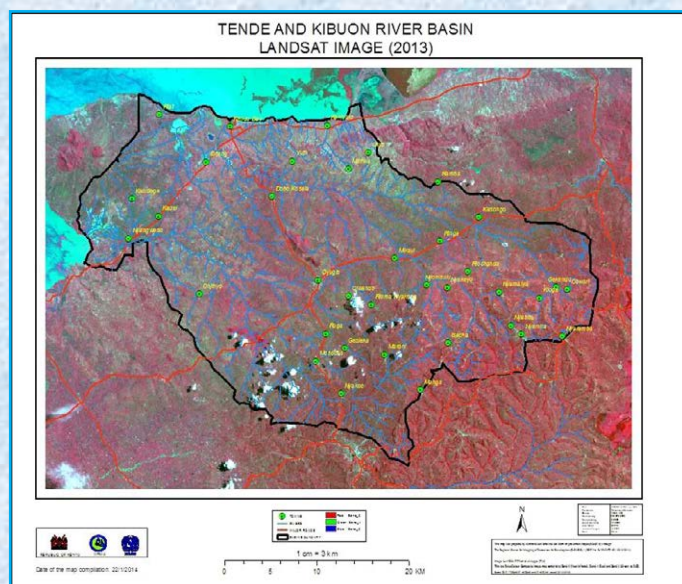
This is a project similar to AGRICAB and supported by the European Commission. The project is being implemented by 22 partners that are lead by VITO from Belgium. The focus of SIGMA project is the development of innovative methods to monitor and assess agriculture. The role of RCMRD/ Department in the project is capacity development and knowledge dissemination. The project kick-off was done in December 2013 and it focuses on dissemination of data and knowledge produced from Global Monitoring of Agriculture and its Impact on the Environment (GEOGLAM) and JECAM Agricultural monitoring sites globally distributed.

## Global Monitoring of Food Security (GMFS)

This is a European Space Agency funded project that preceded AGRICAB and whose focus is Agricultural mapping. As final submission of the project and charting way forward, strengths, weaknesses, opportunities and threats (SWOT) analysis was conducted for the project and submitted to European Space Agency. The SWOT analysis indicated that member States of RCMRD are at different levels of Earth Observation (EO) use in agricultural monitoring and there is more demand for capacity building.

## Kibuon/TENDE Land use/ land cover mapping Project

This is a land use land cover change mapping project for Kibuon/TENDE sub-catchment of Lake Victoria catchment in Kenya. The multi-temporal land use land cover maps were developed and change analysis was conducted using land satellite images. Additional geospatial database was also developed for the same project area. The project was completed in three months and maps and reports were delivered to the client during the reporting year.



## Lamu Port, South Sudan and Ethiopia Transportation Corridor Project

Lamu Port, South Sudan and Ethiopia Transportation (LAPSSET) Corridor is a flagship project of the Kenya Vision 2030 Strategy. Major industrial infrastructures including ports, oil extraction installation and industrial zones are planned or under development within the transport corridor connecting the three countries. The Nature Conservancy (TNC) requested the Centre to undertake comprehensive study and mapping of biodiversity, ecosystem and social amenities in the Corridor, to analyse the impacts of the project on the integrity of ecosystems, populations and economies of the focus regions. The objectives of the study therefore included:

- Identification of biologically and socially significant areas (lands and waters)

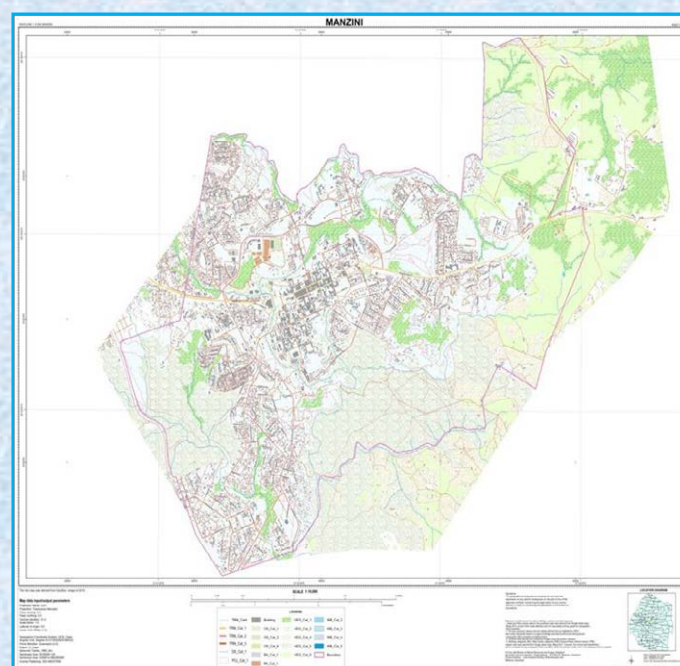
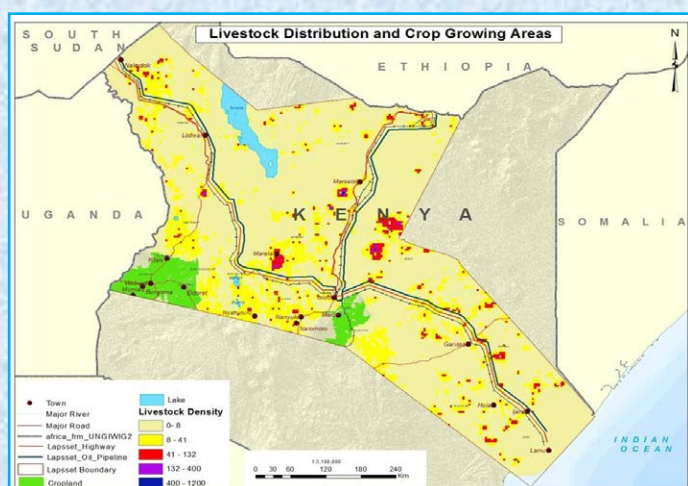
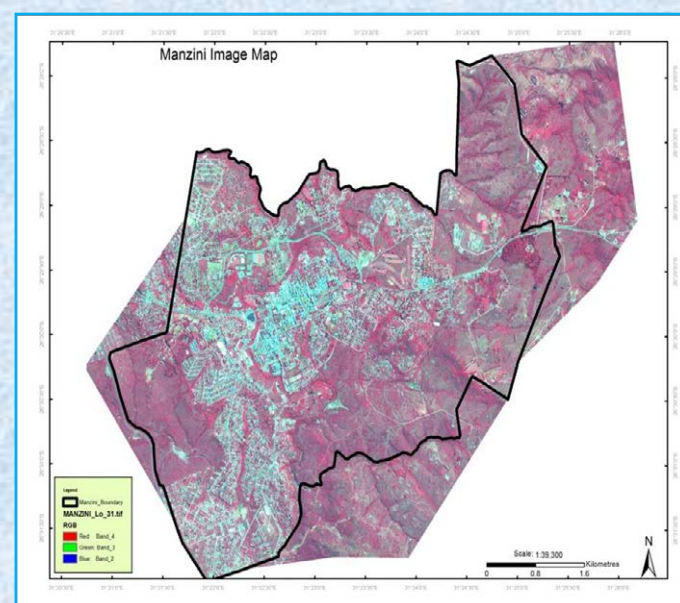
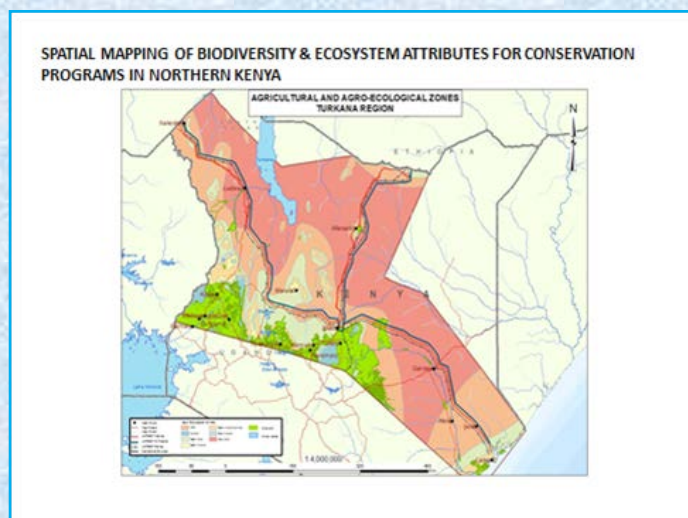


- ii. Overlying these areas with proposed development investments in order to increase informed decision making
- iii. Use the data for creation and analysis of buffer zones for the proposed infrastructure.

The tasks undertaken in the project included: defining biodiversity, ecosystems, geological and socio-economic datasets, defining land use and land cover systems including settlements, livestock routes, grazing systems, floodplain agriculture and fisheries and collating broad demographic information including growth and densities. Several spatial information layers were also developed at larger scale and integrated in to a geodatabase for further utilization and decision making. The project activities were successfully completed and deliverables were handed over to TNC during the reporting year.

## Swaziland Urban Mapping

The project involved updating of urban base maps for major towns and cities in Swaziland. The project implementation was based on the on-the-job-training of staff from the Department of Surveys in Swaziland. Mapping of the capital city Mbabane was completed successfully and the base map for Manzini was also being finalized. The issues related to map projection and cartographic designing and layout were also solved during the reporting time. On the job training was also undertaken in Mbabane in collaboration with staff members from the Department of Surveys. RCMRD will provide support to mapping of other urban centers in the Kingdom of Swaziland.





## MODIS Ground Receiving Station Installed

During the reporting year, the Centre was able to successfully install a 2.4m X and L- Bands ground receiving station. The ground receiving station was funded by Google Foundation. We also got very critical advisory support from Council for Scientific and Industrial Research (CSIR), South Africa. The station has started receiving data from MODIS Aqua and Terra, NPP, METOP, Fengyoung3, NOAA18 and 19, etc in real-time. The data are being used for various applications in the member States. The ground coverage includes from the West up to Nigeria (Atlantic Coast), to the East it reaches up to Yemen, Seychelles and Mauritius (Indian Ocean), to the North up to Egypt and to the South up to Johannesburg - South Africa.

Data covering member States at 250m resolution is received twice a day. The data can be processed into applications such as flood mapping, crop monitoring, fire assessment, water quality assessment, frost mapping, and hailstorm prediction and disaster early warning among others. It also helps in forest fires monitoring especially in areas where human surveillance cannot reach without performing aerial observation. With the receiving station, RCMRD will play vital role in the development of validated, global, interactive Earth system models able to predict global change accurately enough to assist policy makers in making sound decisions concerning the protection of our environment.

## Training and workshop services provided during the reporting year:

The Department undertook short-term professional training and organizing regional workshops as one of the key activities during the reporting year. The Department trained more than 1,800 professionals at different levels from its member States and other stakeholders during the reporting year. This number is exceptional high due to big capacity building project we are implementing in Ethiopia.

The main trainings events that were conducted during the reporting year are listed below:

- Land use and Land cover mapping product usage and data management training were conducted in Rwanda, Zambia and Namibia

- Land use and Land cover mapping and data collection methodology training in Ethiopia.
- One week GIS training course for 25 students from Kenyatta University and University of Nairobi, April, 2014
- One week training on Geospatial Technologies and Data Sharing for Disaster Risk Reduction for 30 participants from member States took place from 5th to 9th May, 2014.
- GIS and RS Training: at least two sessions in a month totaling up to 24 sessions, were conducted during the reporting year
- Two weeks training on AUTOCAD Maps was held for 6 RCMRD members of staff in March, 2014.
- GIS training for seven professionals from UNHCR 10th to 14th March, 2014.
- Advanced GIS training for a group of 15 participants from Mozambique, March to April, 2014
- The Department is providing training in 12 geoinformation courses for over 1,500 professionals from the Ministry of Urban Development Housing and Construction, Ethiopia at different Centers in Ethiopia
- GIS and Remote Sensing training for participants from South Sudan.
- One week training for trainers in water resources management for 25 participants from Kenya, Uganda and Tanzania.
- 15 students from University of Nairobi were trained in GIS
- 16 participants from Mavoko Water and Sewerage Company Limited, Mombasa County, Kenya and Ministry of Natural Resources, Rwanda, Mozambique were trained in GIS and RS application



GIS and Remote Sensing Training at RCMRD





*Training Participants from Rwanda, Mozambique and Kenya during their training at RCMRD*

geoinformation platforms or committee.

## Establishment of Web based Disaster Information systems

The Department continued to advise the government of Rwanda on establishment of disaster information system (Spatial Information and Data portal for Disaster Risk Reduction in Rwanda - SpIDERR).

## Hazard Risk Identification and Mapping

The Department is advising Malawi Government on disaster risk and vulnerability mapping.

## Health Risk Management

The Department is working with Zambian Government on Zambia health risk management system establishment. Inception meetings and data collection were undertaken in July 2014

## Advisory Services

The Department provided advisory services to some of our member States based on demand. Some of the advisory services that were provided to the member States are as follows:

### Advise to Government of Kenya on the GHG emission inventory mapping project

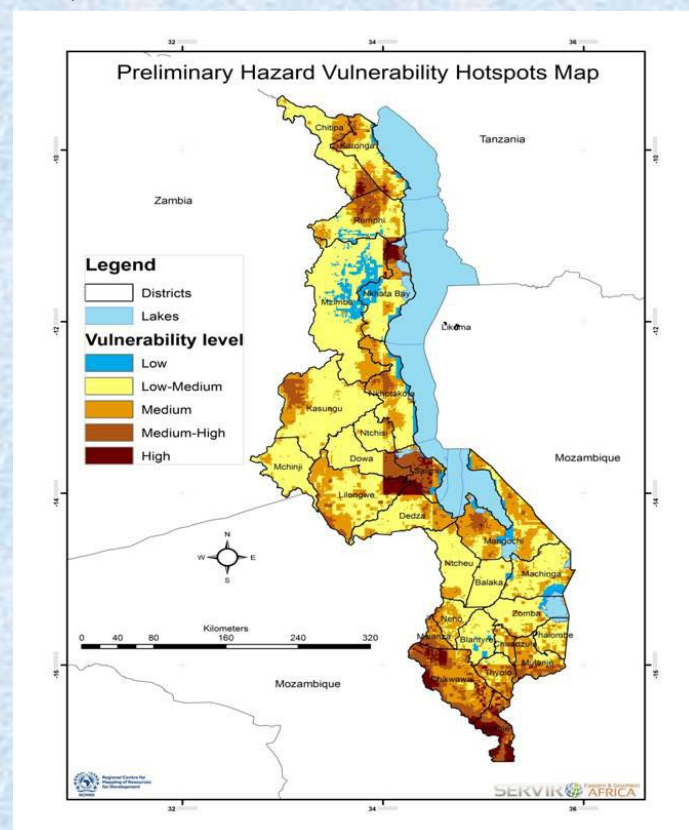
In collaboration with the Department of Resource surveying and Remote Sensing (DRSRS), the Department had continued advising the Government of Kenya in implementation of System for Land-based Emissions Estimation in Kenya (SLEEK) Project.

## PREPARED Project

The Department also continued to advise Planning for Resilience in East Africa through Policy, Adaptation, Research, and Economic Development (PREPARED) project and the beneficiary member states namely the East African Community Countries and Lake Victoria Basin Commission.

## Establishment of National Geoinformation Committee (NGIC)

The Department provided advisory services to the governments of Rwanda, Ethiopia, Mauritius, and Malawi Government on establishment/enhancement of national





## Research and Development

During the reporting year several research activities undertaken in the framework of the projects being implemented.

- Under SERVIR Eastern and Southern Africa, new water resource management product that shows amount of water in streams was developed.
- A research paper was presented at Sentinel Science workshop in Italy in June 2014. The paper was focusing on the different methods of crop acreage mapping and its applications in RCMRD member States.
- Land Potential Knowledge System (LandPKS) programme, research on land suitability modeling is being undertaken for Namibia and Kenya.
- In collaboration with NASA Applied Science Team, we undertook research on Earth Observation application in health such as malaria control and rift valley fever early warning. Crop modeling work is also being implemented in collaboration with NASA Jet Propulsion Laboratory.



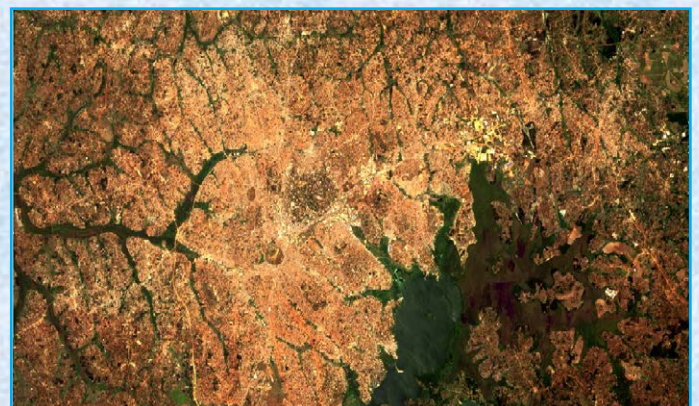
*High Resolution Satellite image for Urban Planning*

- Printed maps for Ministry of Lands, Kenya for 8 towns at 1:2500 were delivered
- Data was sold to Soliton Ltd; Makupa Ltd, and Maseno University, Kenya
- East Africa Tree Zone Platform ordered a large volume of satellite data
- Images and image maps were supplied to different clients worth approximately 38,000 USD in the last month of the December 2014
- Landsat Satellite data was acquired for Land Cover Mapping Project in Ethiopia and Uganda
- Acquisition of Very High Resolution Satellite images of Maanzini in Swaziland for urban planning

## Data Services

During the reporting year, the Department had undertaken data archiving, data retrieval and dissemination through sales and free data supply. Most researchers, university students and government institutions in the Region were receiving Landsat and MODIS and Meteosat Second Generation for free from the Centre. Some of the data dissemination and supply services undertaken during the reporting year are summarized as follow:

- Very High Resolution data for Nyamara County; Machakos and Ministry of Energy in Kenya was supplied.
- Landsat data was supplied to Nairobi County and provided to JKUAT and Masinde Muliro University students in Kenya.
- Kenya Wildlife Service bought Landsat imagery for Marsabit forest.
- Very High Resolution data archive and new acquisition data was delivered to FAO – 20 Area of Interest.



*Landsat image of Kampala, Uganda*



# LAND SURVEYS AND MANAGEMENT

## Projects implemented

During the year under review, the Department undertook the following projects:

### African Reference Frame (AFREF)

RCMRD continued to provide Secretariat services to AFREF project to coordinate the activities of AFREF at the continental level. The secretariat produced two AFREF newsletters in May and October 2014. During the year, the Centre continued to submit GNSS data to the International community through RCMN Continuous Operating Reference Station (CORS) in Nairobi station located at the Centre for both the standard 24hr, 30Secs sampling interval data and 1 second Real-Time Ntrip Caster GNSS data via IGS real time project.

The Centre also continued providing a free RTK and DGPS service in Nairobi. RTK is a centimetre accuracy service for up to 30km radius while DGPS is a sub metre accuracy service for up to 150km. The Station and its services are also used in our training programmes.

### Implementation of Continuous Operating Reference Station (CORS) Project in Botswana

The Department continued supporting the implementation of Real Time Geodetic Network in Botswana by procuring the necessary hardware and software and training on the use of the system. GNSS receivers with geodetic antenna have been procured and installed. Further 15 receivers are currently in the process of procurement.

The CORS management software, Trimble Pivot Platform (TPP) was procured, installed and pilot tested including the use of rover receivers. Training on CORS network management and the use and maintenance of TPP software and use of RTK corrections using rover network receivers was provided to Department of Survey and Mapping and some Land Board surveyors. The CORS Network in Botswana is active and working.

International Boundary GNSS Survey data Post Processing (Namibia /Botswana)

The GNSS data processing for the final coordinates of

the 117 Botswana / Namibia international boundary beacons by a joint team from both countries in the WGS84 Coordinate System was conducted at Francistown, Botswana in January 2014. Surveyors from Namibia (3) and Botswana (3) took part in the processing with support of a geodesy expert from RCMRD. The GPS survey was undertaken by a team composed of surveyors from both countries in September 2013. Leica Geo Office Software using IGS Precise orbits and ITRF2000 was used for this project. The report was finalised and signed by all the parties for presentations to respective governments for adoption.

### GNSS Control survey for Mombasa County, Kenya

GNSS Image Control Project for Mombasa County was carried out from 29th September to 12th October 2014 on behalf of the Department of Resource Surveys and Remote Sensing (DRSRS), Kenya. The project was carried out by joint team of RCMRD and DRSRS as a capacity building for the DRSRS staff in the image ground control or geo-referencing.

### Other Projects carried out by the department

The department carried out various projects in GPS control survey and data processing and topographic surveys for various institutions.

## Training and Workshops Programmes

The Department organized the following courses:

### Training on AFREF and Processing of Global Navigation Satellite System (GNSS) Data

Training on African Geodetic Reference Frame (AFREF) and Processing of Global Navigation Satellite System (GNSS) data was conducted from 3rd to 14th September 2014. The objective of the training was to provide skills to technical staff from National Mapping organisations in setting and installation of GPS reference stations network processing and dissemination of reference stations data for user in their respective countries. Twenty six



participants from RCMRD member States attended i.e. Botswana (1), Ethiopia (3), Kenya (5), Lesotho(1), Malawi (1), Namibia (2), Tanzania(1), Uganda(1), South Sudan(1), Sudan(6),Swaziland(1), Zambia(1), and Zimbabwe (1).

## GNSS Data Processing training in Botswana

After the processing of Namibia/Botswana boundary, Global Navigation Satellite Systems (GNSS) data processing training was conducted to Department of Surveying and Mapping (DSM) Surveyors using Leica Geo-Office software. This took place from 27th to 31st January 2014 at Gaborone offices. During the Training, GNSS data from CORS stations were computed and fixed with respect to Botswana National Geodetic Reference Systems 2002(BNGRS02) WGS84 Ellipsoid and Universal Transverse Mercator LO coordinate system. This was done to fix the CORS to the local coordinate system and therefore fix them in the CORS management software to enable local application of the established CORS systems in Botswana.

## Institution of Surveyors of Kenya Continuous Professional Development (CPD) training workshop

The above-mentioned course was held from 17th to 19th July, 2014 at RCMRD. The aim of the course was to enable participants identify and understand the new technologies and instrumentation in surveying and mapping fields. These included total stations, Global Navigation Satellite Systems (GNSS), Digital Levels, 3D mapping using high resolution stereo images, LIDAR and Laser scanners both terrestrial and airborne and drones for digital mapping. Vendors from various instruments manufacturers participated by making demonstrations and presentations of their products in particular Total stations and GNSS systems. 72 surveyors participated in the workshop.

## Training on Innovative Concepts, Tools and Practices in Land Administration

The aim of the training was to bring together land officials and technical personnel from member States and experts from a range of relevant disciplines, for joint learning on innovative and effective land administration tools and practices. The following areas were addressed:

- Information on key land administration cases,

approaches, achievements and challenges shared.

- Innovative concepts, tools and practices in land administration described, analysed and practically illustrated
- Joint learning through exchange of information, knowledge and expertise, plus practical illustration and application
- Plans formulated for in-country follow-up, application and learning

Forty five participants from Botswana (3), Burundi(1), Ethiopia(5), Kenya (10), Lesotho(2), Malawi (3), Mauritius(2), Namibia(2), Rwanda(3), South Sudan(3), Swaziland(2), Tanzania(3), Uganda(2), Zambia(1), and Zimbabwe (2) attended the course. The training was host by RCMRD on 14th -25th July 2014 and co-sponsored by RCMRD, University of Twente – Faculty of Geo-Information Science & Earth Observation (ITC), Dutch Kadastre, and Land Registry and Mapping Agency (Kadaster), and Global Land Tool Network (GLTN).

## Mapping of Land and Natural Resources Using Open Source Geospatial Technologies

The training on mapping of land and natural resources using open source geospatial technologies was carried for duration of one week from 18 to 25th August 2014 in collaboration with partners who includes UN Habitat, GLTN and International Fund for Agricultural Development (IFAD). Quantum GIS software and GPS mapping receivers were used.

The training targeted technical personnel in natural resources projects with aim of equipping them with necessary skills to carry out basic mapping of natural resources using open source. The training targeted participants with no prior knowledge on use of open source software in mapping, especially Quantum GIS software. The training objective included: Familiarize with mapping basics, its main applications, and GIS concepts; Understand different data types and structures dealt with by a GIS and how to manage them effectively; Configure, use and transfer data from handheld GPS receivers and Perform spatial queries on data layers to provide answers to location-dependent questions. 20 participants from Kenya, Uganda and Malawi attended.



## Training on Land and Land Related Fields in Ethiopia

About 1500 professionals in Land and Land Related Field's i.e. cadastral survey, mapping and photogrammetry, urban planning, valuation, land registration were evaluated and trained for professional competency registration in Ethiopia. The candidates were drawn from Ministry of Urban Development Housing and Construction, Federal Democratic Republic of Ethiopia. The training took will take place from July to Mid-November in Ethiopia. The training is being conducted at Technical Vocational Education Training (TVET) institutes and Universities in Ethiopia. The institutions are Adama University, Assela University, Adigrat University, Winget TVET, Misrak TVET, Entoto TVET, and Nfas Siike TVET.

Under this program, over 150 surveying and mapping instruments including Geodetic GPS, Total Stations, Theodolites, and Levels from the same institutions mentioned above were serviced, calibrated and repaired. Missing accessories including batteries and charger etc were replaced for some equipment during the exercise. Also technician from managing these equipment were also given some basic training on servicing the equipment under their care.

## African Border Programme GNSS Receiver training Rwanda and Uganda

This programme took place on 27th to 31st October 2014 in Kabale Uganda. A joint team of 10 surveyors from Rwanda and Uganda were trained on the basic theory of GNSS technology including data processing and use of CORS and practical use of Altus GNSS receiver donated to both countries for the common border survey by African Union Border Programme. Rwanda CORS was used for this to provide a practical example. At the end of this training, both teams were expected to carry out the border survey using these GNSS equipment.

## East African Land Administration Network workshop (EALAN)

The Annual General Meeting for EALAN was held at RCMRD, Nairobi Kenya from 11th to 12th July 2014. The membership is drawn from institutions of higher learning in Ethiopia (Bahir Dar University), South Sudan (Juba University), Kenya (Technical University of Kenya), Uganda (Makerere University), Rwanda (INES Ruhengeri

and National University of Rwanda), Burundi (University of Burundi), and Tanzania (Ardhi University). During the meeting papers on land administration and curriculum were presented.



Members of the Land Administration Network during their Annual General meeting at RCMRD

## Advisory Services

In the reporting year the department provided the following advisory services:

### Feasibility Study on the Establishment of CORS and Modernization of Geodetic Network in Swaziland

The department undertook a feasibility study on the establishment of CORS network and modernise geodetic network in Swaziland in May 2014. This was the preliminary investigation into the requirements and potential benefits associated with undertaking the establishment of the Continuous Operating GNSS Reference Stations. The main purpose of the feasibility



study was to consider all factors associated with the CORS network project and come up with the project technical and financial proposal.

### African Border Program for Sudan

The Department was part of the team that took part in assessment of the human and institutional capabilities of Sudan to demarcate and maintain the country's international boundaries in February 2014. The mission was undertaken with support from the African Union Border Programme (AUBP). A comprehensive report was produced and submitted to AUBP with recommendations on how to meet the capacity needs of the Government of Sudan in international boundary demarcation and maintenance.

### Engineering Section

The section continued to render services in repair, servicing and calibration of surveying instruments to government and private practitioners in the member States. During the reporting period the Section rendered services to six member States, namely, Ethiopia, Tanzania, Zambia, Botswana, Kenya and Rwanda.

Country	Number of Instruments	Service costs in USD\$	Replacement value in USD\$
Ethiopia	141	28,600	936,300
Tanzania	18	6,500	149,500
Zambia	25	12,300	906,500
Botswana	17	12,500	556,500
Kenya	37	5,250	328,000
Rwanda	16	6,000	152,500



*RCMRD Engineer during a service mission in Rwanda*

## IT Training Centre (ITTC)

During the reporting year, ITTC undertook restructuring and reengineering to convert the unit to a Corporate Training and Professional Certification Training Centre. This was done in three ways; upgrading training infrastructure where one lab was equipped with latest training facilities, establishing partnership with two international certification and examination organizations namely International Computer Driving License (ICDL) and Certiport and establishing partnership with two national certification and examination institutions.

### Academic Training

During the year, ITTC continued with the regular academic training in Information Technology Diploma and degree programs. A total of 33 students were pursuing these programmes. Out of these 26 students graduated where 19 graduated with Bachelor of Business in Information Technology and seven graduated with a Diploma in Information Technology.

### End user Training

ITTC continued with short-term end-user training and during the year, 143 students were trained in Integrated Computer Training (ICT). Other short term courses were also introduced that are more appealing to the market e.g. ICDL and Microsoft certification. During the year, 10 students were trained in graphics design, computer programming and web development.

### Corporate Training

During the year, in total 15 individual corporate clients from different organization were trained. The courses conducted were Visual Basic Programming, Statistical Package for Social Scientists (SPSS), Graphic design using Adobe Illustrator and Web Design.



# MANAGEMENT, ADMINISTRATION AND HUMAN RESOURCES COMPONENT

## Management

The 2014 Work Plan rolled out measures to position the Centre strategically to play a central role in the promotion of sustainable development in member States through the use of geo-information. The Work Plan dealt with the provision of capacity building and project services required by member States and clients as well as provision of advisory services and forming networks of partners dealing with geo-information research for sustainable development. RCMRD management facilitated and provided an enabling environment all the departments to perform their activities.

## Strategic Partnerships

The Centre has continued to establish beneficial partnerships and collaboration with relevant institutions within and outside the region in research, development and application of geo-information for sustainable development. In this regard the Management engaged with Member States institutions and development partners in pursuit of areas of collaboration. In 2014 the Centre entered into partnerships with several organizations to undertake various activities. Some of these were:

- RCMRD signed MoU with United Nations Institute for Training and Research (UNITAR)
- MoU with National Disaster Reduction Center of China (NDRCC)
- MoU with UN-Habitat in Support of Global Land Tool Networks' (GLTNs') in areas of Capacity Development Initiatives.
- African Union Border Programme to provide capacity development for Rwanda and Uganda and need assessment for Sudan
- NASA and USAID provided grants to 14 institutions in the member States and continued to support SERVIR Africa Programmes at RCMRD.

## Visits to member States

The RCMRD Chairpersons Conference of Ministers, Governing Council and the Director General visited several member States. The purpose of the visits was to familiarize with the activities of government institutions and expose the institutions to RCMRD services as well as identifying areas of mutual benefit to the member States and RCMRD.

## Visits to member States by the Chairpersons RCMRD Conference of Ministers, Governing Council and Director General

### Republic of Sudan

Chairperson RCMRD Conference of Ministers and Minister of Lands, Natural Resources and Environmental Protection, Republic of Zambia accompanied by the Director General RCMRD held a meeting with Hon. Abdulrahim Mohammed Hussein, Minister of Defence and in charge of Surveys and Mapping for the Republic of Sudan in March, 2014. The objective of the meeting was to appraise the Government of Sudan on the current activities of the Centre and how Sudan could benefit from the same by being an active member. The Minister appreciated the visit by his counterpart and made a commitment that they would resume attending various meetings/trainings arranged by the Centre.

### Arab Bank for Economic Development in Africa (BADEA), Republic of Sudan

The Chairperson RCMRD Conference of Ministers visited the Arab Bank for Economic Development in Africa on 31st March, 2014 and held a meeting with the management of the Bank. The purpose of the meeting was to discuss the activities of RCMRD and request the Bank to support the development of Conference Center and Hostels at RCMRD. The Bank promised to study the request and respond.



## Republic Burundi and Uganda

The Chairperson of the Governing Council of RCMRD accompanied by the Director General visited Burundi and Uganda on 2nd and 4th September 2014 respectively. The objectives of the visits were sensitizing top government officials of the services available at RCMRD and the obligations of Member States to RCMRD. In Burundi, the Chairperson held fruitful discussions with the Deputy Minister of Water, Environment and Urban Development Hon Ndarufatiye and the Permanent Secretary Eng. Ndagijimana on closer cooperation between Burundi and RCMRD. In Uganda the Chairperson held discussions with the Minister of Lands and Urban Development Hon. Daudi Migereko.

States to fully utilize the services provided by the Centre. The Minister told the staff of the Centre that he would dedicate part of his time to support the operations of the Centre in order to enhance its performance.



*Hon. Mwansa Kapeya, MP, Chairperson, RCMRD  
Conference of Ministers visit to RCMRD*

## Director General visit to the Federal Democratic Republic of Ethiopia

The RCMRD Management team lead by the Director General visited the Ethiopia Mapping Agency, Federal Republic of Ethiopia. The purpose of the visit was to Sign the Agreement to Host the 9th RCMRD Conference of Ministers in Ethiopia in November 2014 and familiarize RCMRD Management with the activities of the Ethiopia Mapping Agency as well as discuss possible further areas of cooperation and provision of service to the Ethiopia Mapping Agency and other Government Ministries.

## Distinguished Visitors to RCMRD

### Visit to RCMRD by chairperson RCMRD Conference of Ministers

Hon. Mwansa Kapeya, MP, Chairperson, RCMRD Conference of Ministers and Minister for Lands, Natural Resources and Environmental Protection, Republic of Zambia made a familiarization visit to the Centre from 28th to 30th March. During the visit the Honourable Minister was accompanied by Mr. D. M. Chimfwembe, Director Planning and Mr. Mwiya Mooka, Senior Land Surveyor. The Ministerial delegation was joined by the High Commissioner of Zambia to Kenya, Her Excellency, Mrs. Jean Mumbi Phiri.

During the discussion with the Centre's management, the Chairperson expressed gratitude for being invited to tour the Centre and know first-hand its activities. In addition, he commended the Centre staff for their good work. He indicated that there was need for member

## Visit to RCMRD by Chairperson RCMRD Governing Council

Mrs. Inutu Etambuyu Suba, the Chairperson RCMRD Governing Council and Permanent Secretary, Ministry of Lands, Natural Resources and Environmental Protection, Republic of Zambia visited RCMRD in January 2014. The purpose of the visit was to familiarize herself with RCMRD programs and activities, review the implementation of RCMRD 2014 Annual Work Plan and mobilize resources for the infrastructure development. During the visit she held meetings with the Management and staff of RCMRD.

## ISO Quality Management System Certification

RCMRD in its Strategic Plan envisaged establishing ISO Quality Management System at the Centre. The Centre was awarded the ISO 9001: 2008 Quality Management System (QMS) certification in July 2014. Quality Management System will steer the RCMRD in achieving member States and customer satisfaction by continually improving its processes, products and services to ensure they meet customers' requirement. RCMRD developed and implemented the QMS in order to document the Centre's best practices, better satisfy the requirement and expectation of its member's states and other customers and improve the overall management of the Centre.





Members of RCMRD Governing Council receives the ISO 9001: 2008 QMS certificate

## Assessment of National Spatial Data Infrastructure (NSDI) in RCMRD Member States

In fulfillment of our mandate to offer support to our member States towards the formation of National Geo-Information Committees (NGIC) and National Spatial Data Infrastructure (NSDI), a pre-assessment survey of spatial data sharing and dissemination services, metadata, web services, policies and standards, geo-spatial tools and capacity in national institutions in Mauritius, Zambia and Swaziland was carried out. The work was done with support of SERVIR-Africa Programme at RCMRD. The pre-assessment included a desk study, organizational survey, institutional assessment, and spatial data infrastructure (SDI) readiness index. Key technical personnel from Ministries and other government institutions that would be expected to participate in the NGIC/NSDI initiative were also interviewed. These included Government Ministries and Departments, NGOs and academic institutions that produce and/or use spatial data.

The results of the pre-assessment will inform RCMRD in preparing an inception workshop and technical training to initiate the implementation of the NSDI and to build the technical capacity required. These assessments helped in sensitizing national institutions on the importance of data sharing and data dissemination services and data standards. The training will focus on policies on data dissemination, metadata and web services tools for national institutions.



Training session of the East and Southern Africa land cover workshop

## New Satellite Receiving System Launched

New Satellite receiving station was launched on 10th July 2014 after successful installation of a direct satellite data receiving station at RCMRD premises. The satellite tracking system called Moderate Resolution Imaging Spectro-radiometer (MODIS) enables acquisition of direct real-time data which can be processed into different products for a variety of applications. With the Earth Observing System-Front End Server (FES), RCMRD manages all the automation and management tools needed to control the ground station antenna such that RCMRD is capable of scheduling tracking, monitoring real-time status, and ingesting and demodulating multiple satellites efficiently.

Data covering member States at 250m resolution is received twice a day. The data can be processed into applications such as flood mapping, crop monitoring, forest fire monitoring, water quality assessment, frost mapping and hailstorm prediction and disaster early warning among others.





change. The objective of the Grants Programme is to improve environmental decision-making by dissemination of Earth observation data, products, and tools to empower governmental and government-affiliated institutions to make better-informed decisions. The anticipated outcome of these activities is to stimulate the innovative use of geospatial tools and information to translate science into sustainable policy and practice that addresses the environmental and developmental challenges posed by climate stresses. The RCMRD SERVIR Africa project seeks to broaden its network of organizations that work with geo-spatial tools and information by funding proposals that may address themes that support environmental decision making.

### GPS Receivers donated to AFREF Program

The AFREF Programme through United Nations Economic Commission for Africa (UNECA) got a donation of 77 GPS Receivers to be used to establish Continuous Operating Reference Stations (CORS) in African countries. The donation is from Ordnance Survey of the United Kingdom. RCMRD being the Chair of AFREF Steering Committee received the GPS receivers on behalf of AFREF in September 2014. The GPS will be distributed to African countries.



*Members of the RCMRD Governing Council Launch new Satellite receiving station*

### Communication and Resource Mobilization Strategies

During the reporting year, we implemented our Communication strategy involving rebranding, active engagement with media as well as internal capacity building. Emphasis was put on activities leading towards increasing visibility of the Centre by rebranding and reviewing online Communication. A complete overhaul of the website with the aim of giving it a friendlier and more interactive feel was carried out. This has resulted in higher traffic towards the website and more conversation has been created around the website with regular updating of content on the site.

Social media has become a very important platform for gathering and dissemination of information. Our social media has got new life, with regular posting and interaction with stake holders. This year also saw the launch of an e- newsletter, a publication that will be released every three month that will capture activities hosted or carried out at the Centre. This is a vital tool that will communicate not only to the member States, but to a wider audience that works towards a common

### Grants Programme

RCMRD in collaboration with its partners NASA and USAID provided grants ranging from USD25,000.00 to 50,000.00 institutions in eight member States. The grants will be used to implement Geo-Information Projects and services and demonstrate their usefulness in environmental management and impacts of climate



goal of using GIS for sustainable development.

On Resource Mobilization Strategy the following was undertaken:

- A resource mobilization committee was formed.
- Arab Bank for Economic Development in Africa in Khartoum was visited to discuss possibility of funding the hostel facility.
- Director General together with the Chair of the GC visited Uganda, Burundi, and Sudan to discuss the outstanding balances of Annual Contributions.
- UNDP visited our offices on 15th October 2014 for preliminary evaluation of RCMRD systems for a possible partnership.
- RCMRD attracted funding from USAID and NASA to grant to institutions in member States in form of Small Grants and Small Application programs.
- RCMRD with support from SERVIR Africa Programme is recruiting a resource mobilization officer to assist in the design of 2015-2018 resource mobilization plan and help in the implementation.
- The marketing section continued to monitor calls for proposals in the various sources and communicated to the technical team to prepare proposals.

## Strengthening of institutional internal audit, planning, monitoring and evaluation and quality assurance systems

Management also embarked on establishment and operationalization of effective and efficient institutional internal audit, planning, Monitoring and Evaluation (M&E) and quality assurance systems through strengthening of the internal financial and assets audit processes and procedures. In this regard a Monitoring and Evaluation Committee to implement M&E was set up. M & E tool was developed and is being used. Internal Audits were carried out in three sections at the Centre. ISO Quality Management Audits were carried out in six Sections.

## Zimbabwe becomes a member State

On 23rd June 2014, the Republic of Zimbabwe signed the Instrument of Accession to officially become a member State of RCMRD. This followed the Governing Council meeting held in Nairobi, Kenya where Zimbabwe was officially admitted as Member State of RCMRD. The membership to RCMRD will help Zimbabwe government institutions build their capacities and share knowledge and experiences with other member States.

The signing ceremony took place in Harare, Zimbabwe and was witnessed by the Minister and Permanent Secretary, Ministry of Lands and Rural Resettlement, Director General RCMRD, senior officers of RCMRD and senior government officials.

After signing ceremony, RCMRD held a workshop for senior staff from Government organizations such as Water, Health, Meteorology, Agriculture and Disaster Management. The aim of the workshop was sensitize Government organizations on the services available at the RCMRD.



Zimbabwe signs the Instrument of Accession to become a Member State of RCMRD

## 48th Governing Council and 9th Conference of Ministers Meetings

The 48th RCMRD Governing Council and 9th Conference of Ministers meetings were held in Addis Ababa, Ethiopia from 10th to 18th November 2014.

The Governing Council is an organ that meets annually to review and approve RCMRD's Annual Work Plan and budget and is composed of Permanent/Principal secretaries from member States responsible for the activities of RCMRD. The 48th Governing council discussed and the 2015 Annual Work Plan and Budget and approved the same for implementation.

The Conference of Ministers meets every two years and is composed of Ministers from our member States. They meet to evaluate the implementation of the RCMRD Strategic Plan as well as approve a new one. The 9th Conference of Ministers reviewed the implementation of RCMRD 2011-2014 Strategic Plan and approved a new Strategic Plan 2015-2018.



Seventeen (17) member States and UNECA attended the meeting. The member States were: Botswana, Burundi, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Rwanda, South Sudan, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. Mozambique attended the meeting as observer. The meetings were chaired by Federal Democratic Republic of Ethiopia, Ethiopia took over from the Government of Zambia as the chair of both the Governing Council and Conference of Ministers.



*Delegates at the 9th Conference of Ministers in Addis Ababa*

The Management continued facilitation implementation of planned activities by providing the following support services:

## Administration

### Physical Infrastructure

The following activities were undertaken in order to improve the facilities and infrastructure of the Centre:

- Painting ITTC labs and faculties rooms.
- Renovating and painting security officer's house.
- Renovating generator house.
- Building MODIS stand and motor house.
- Painting Data Office, GHG lab, GIS lab and side elevation of Blocks A and B.
- Improving security lights around the Centre premises.
- Carrying out general maintenance of buildings and grounds.
- Replacing ceiling in the Board Room.
- Installing Air conditioner in Board Room.

### Transport and Protocol Services

The main transport and protocol services that were provided were as follows:

- Maintaining and servicing vehicles, carrying out Inspection of one Van, undertaking Valuation of vehicles for insurance purposes.
- Providing general transport to staff, guests, course/workshop participants and dignitaries.
- Providing transport for five field trips for training programmes.
- Processing VAT and Duty exemptions.
- Processing of Re-entries and work permits for Centre's foreign staff and their families.
- Clearing MODIS receiver, surveying equipment, GPS and other imports.

## Information Technology Service

The following activities were undertaken to provide support for the Centre's objectives:

- Upgrading Telephone system to an IP based one for a total of 8 new extensions.
- Increasing Internet Bandwidth to 20MB.
- Purchasing 20 computers (laptops and desktops).
- Creating centrewide hotspot.
- Upgrading the server room to state of the art Servers.
- Providing overall support to other Departments and member States.
- Installing the MODIS Receiver and Server.

## Library Services

The following activities were undertaken in the Library:

- Processing 1900 new information materials including Textbooks, Journals, Newspapers, and reports
- Conducting Library user education for staff and students, and registering 20 new users.
- Maintaining of support, upgrades and data hosting for the Library Management system.
- Purchasing Geo-information and IT books as per User Needs.
- Receiving and processing 506 donated information materials.
- Acquiring 3 branded computers for research and accessing e-information.
- Training 5 interns.
- Subscription and re-subscription of Newspapers and Magazines including electronic resources (electronic database), online resources.
- Developing RCMRD Information retention schedule as part of ISO 9001:2008 QMS.
- Purchasing 2 office desks and 6 chairs.



- Disseminating information in various formats such as print and CD-ROMS to 5000 users.

## Security Services

During the reporting period under Security services, the following activities were undertaken:

- Servicing of Electric Fence.
- Servicing of fire-fighting equipment.
- Issuing periodic security briefs.
- Providing security to staff and safeguarding Centre's property.
- Controlling access to Centre premises.

## Human Resource Matters

The following activities were undertaken in Human Resource:

### Review of Human Resource Conditions of Service

In relation to improving Human Resource issues, remuneration and motivation, United Nations Economic Commission for Africa (UNECA) undertook a Review which introduced House Allowance and instituted revision of Travel Allowance. In addition the Review recommended a number of improvements including an overall Organisation Review to improve motivation in relation to Career Advancement and improved grading system among other things.

### Recruitment

The recruitment of Remote Sensing Officer under the Remote Sensing, GIS and Mapping Department was completed in November, 2014 and he would assume the position in January, 2015.

Under the SERVIR Africa Project, the recruitment of Monitoring and Evaluation Expert, Grants Manager, and Communication and Outreach Expert was completed in January, 2014. In addition, three Remote Sensing Specialists; a Capacity Building Lead; a GIS System Developer were employed between August and November, 2014. A Grants Assistant for the SERVIR Africa Grants Programme was appointed in June, 2014. An Information Technology Training Coordinator was

recruited with effect from 1st October, 2014. Also recruited in December, 2014 were Two GIS Technicians; Two Remote Sensing Technicians and a Resource Mobilisation Specialist.

### Resignations

Several members of staff departed from the Centre to pursue other interests. The Director of Remote Sensing, GIS and Mapping resigned with effect from 30th November, 2014 after being with the Centre for more than nine years. Others who left included a Senior GIS Technician, who left in June, 2014 and a Remote Sensing Technician, who left in September, 2014. In addition an IT Lecturer and a Grants Manager resigned from their positions in March and August, 2014 respectively.

### Performance Management

The Centre continued implementing Performance Management System for the Centre's staff. All 60 staff completed their Work Plans and Mid-Year Performance evaluation was undertaken at the end of June, 2014. End of the year performance appraisals were carried out between November and December, 2014.

### Staff Training

The Centre provided various training programs to staff. The objectives of the training programmes were to upgrade different skills in order to improve performance and productivity of staff. The following programs were implemented:

In relation to the implementation of the ISO 9001:2008 Quality Management System 17 mostly new staff members underwent One day training in September, 2014 to familiarize them with the requirements and implementation of the Centre's Quality Management System. 22 Technical staff took part in a Monitoring and Evaluation training in July, 2014 held in Arusha, Tanzania. Twenty members of staff participated in Communication training in October, 2014.



Ten members of staff attended Mercator Cartographic Production Software training from 10th February to 14th February 2014. Five of staff attended a two week Crop yield estimation training from 3rd February to 14th February, 2014. Four staff members underwent one week Training of Trainers training in the use of Earth Observation Tools for Water Quality Assessment from 17th to 21st February, 2014. Six staff members attended Auto CAD Map 3D training from 24th February to 7th March, 2014. A number of Technical staff participated in the Eastern and Southern Africa Land Cover Land Use training from 10th to 14th March 2014. Four staff on SERVIR project attended one week training in April, 2014 in USA on Monitoring and Evaluation, Communication and Outreach and Grants Management and Science Applications.

Further three Engineering Technicians attended one week training on servicing of LEICA Total Stations in Switzerland. Several technical staff attended training on the geospatial technologies and data sharing for Disaster Risk Reduction from 5th to 9th May, 2014. Four technical staff attended one week ESRI Software training. An Engineering Technician attended a Method Validation and Uncertainty of Measurement Training from 16th to 19th June, 2014. The Finance Officer and Internal Auditor attended the Institute of Certified Public Accountants of Kenya (ICPAK) Managerial Accounting Training seminar in June, 2014. The Finance Officer and Accountant attended ICPAK Accounting Standards training in August, 2014. Two Technical staff attended a One week training on Processing Chain Methodology from 29th September to 3rd October, 2014 under MESA Project at Joint Research Centre, Ispra, Italy.

A number of staff continued to undertake self-sponsored training in local colleges and universities on part time basis to acquire more knowledge and improve their professional skills. A Senior GIS Technician graduated with Master of Science in Geo-Spatial Information System and Remote Sensing during the year. The Digital

Surveyor is undertaking a Master of Science degree in Geoinformation Systems. Two Engineering Technicians graduated with Master of Business Administration degree course in August, 2014. The IT Administrator graduated with an MSc in Information Technology. A GIS Technician successfully completed MSc. in Geoinformation Systems. Procurement Assistant was continuing with a Bachelor of Commerce degree programme; The Receptionist is undertaking a Bachelor's degree in Business Leadership. The Librarian embarked on an MSc in Information Science. An Accountant was undergoing a Master of Business Administration programme while an Assistant Accountant was pursuing in Bachelor of Commerce degree. The Land PKS Coordinator completed training in MSc in Geoinformation Systems.



*Staff Training in Arusha*



*RDMD Management cuts cake during end of year 2014 Staff Party*



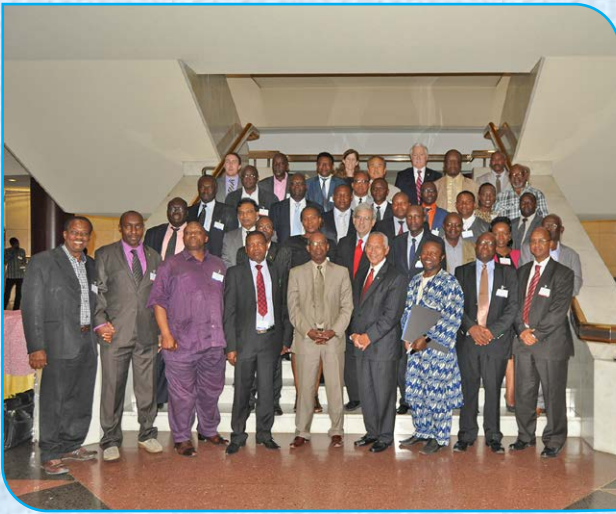
# DISTINGUISHED VISITORS TO RCMRD

During the year under review, the Centre received over 20 distinguished visitors. These included:

Name	Organization/Country	Date
Hon. Harry Kalaba	Ministry of Lands, Natural Resources and Environmental Protection, Zambia	6th Jan.2014
Laurie Frydman	US Embassy, Kenya	15th Jan. 2014
Elizabeth Wharton	Regional Environmental Office, US Embassy, Ethiopia	15th Jan. 2014
Jonam N. Kinama	Ministry of Interior and Coordination of Government, Kenya	6 March 2014
Eng. H. J. Nyaanga	Ministry of Land, Housing and Urban Development, Kenya	10March 2014
Col(Rtd) Kigotho	National Disaster Operations Centre, Kenya	16March 2014
Hon. M. Kapeya	Ministry of Lands, Natural Resources and Environmental Protection, Zambia	29March 2014
Eric Babtiste	Enterprise Electronics Corporations, US Embassy	7th April 2014
Mary Masyuko	US Embassy	7th April 2014
David Lemiso	Ewaso Ngiro South Development Authority, Kenya	20th May 2014
Sammy Naporos	Ewaso Ngiro South Development Authority, Kenya	20th May 2014
Clencas Stromeyer	Black Bridge, Berlin, Germany	26th June 2014
John Ahiricus	Black Bridge, Berlin, Germany	26th June 2014
Ibrahim Mwathane	Land Development and Governance Institute (LDGI)	30th June 2014
Mwenda Makathimo	Land Development and Governance Institute (LDGI)	30th June 2014
Monicah Wanjohi	Land Development and Governance Institute (LDGI)	30th June 2014
A. B. N. Mhlanga	Director of Surveys, Surveyor General's Department	7th July 2014
H.E Mercel Chirwa	High Commissioner to Kenya, Malawi	10th July 2014
H.E Shemsadin Ahmed	Ambassador of Ethiopia	10th July 2014
Mariamou El Maawy	PS, Land , Housing & Development	10th July 2014
Mishumo Madima	South African High Commission, Kenya	10th July 2014
Patrick Omutia	PS, Ministry of Mining Kenya	25thSept. 2014
John Shilami	Associated weather Consultants Limited, Kenya	13th Oct. 2014
Evans Mukolwe	Associated weather Consultants Limited, Kenya	13th Oct. 2014



# Pictorial



Delegates at the 46th RCMRD Technical Committee Meeting



Award of ISO Quality Management System Certificate



Installation of MODIS Satellite Receiver at RCMRD



Visit of MESA Technical Experts to RCMRD





**RCMRD**

The Director General,  
Regional Centre for Mapping of Resources for Development  
Kasarani Road, Off Thika Road  
P.O. Box 632-00618,  
Ruaraka, Nairobi, Kenya  
Tel: +254 20 2680722/2680748  
Fax: +254 20 2680747  
Email: [rcmrd@rcmrd.org](mailto:rcmrd@rcmrd.org)  
Website: <http://www.rcmrd.org>