REGIONAL CENTRE FOR MAPPING OF RESOURCES FOR DEVELOPMENT

RCMRD

RCMRD 2025 ANNUAL REPORT

ISO 9001 REGISTERED FIRM KEBS

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MAPPING FOR SUSTAINABLE DEVELOPMENT
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PREFACE

As Chairperson of the Governing Council, it is my distinct honor to present the 2025 Annual Report- a document that serves not only as a record of achievement but as a testament to the Centre's enduring commitment to its mandate. Celebrating our Golden Jubilee this year was a profound reminder of our founding mandate: to foster regional integration and sustainable development through technological innovation.

In 2025, RCMRD achieved a remarkable 95% implementation rate of its 2023–2026 Strategic Plan. This is not merely a statistical success; it represents the operationalization of high-stakes systems that protect African lives and livelihoods. From the deployment of Somalia's Groundwater Suitability Maps to the establishment of Digital Data Nodes for Kenya's coastal governance, we have successfully moved from data collection to providing "actionable intelligence." By integrating Artificial Intelligence (AI) into our mapping workflows and establishing a Pan-African Community of Practice for Disaster Risk Reduction, we are ensuring that our member States are no longer just data consumers, but data innovators.

As we look toward the next 50 years, the Governing Council remains committed to securing a resilient foundation for Africa's natural resources. We are building an institution that does not just map the continent's potential but actively secures its future.

Mr. Patrick Mucheleka,

Chairperson, RCMRD Governing Council & PS Ministry of Lands and Natural Resources, Zambia

FOREWARD

The year 2025 stands as a historic milestone in our institutional journey as we celebrated RCMRD's 50th Anniversary. This Golden Jubilee was far more than a reflection on our half-century legacy; it served as a strategic launchpad for the next era .

Our growth this year is best measured by the expansion of our international mandates. In a landmark achievement, RCMRD was officially designated as the Technical and Scientific Cooperation (TSC) Support Centre for the Convention on Biological Diversity (CBD). This role positions us as the primary technical bridge for Eastern and Southern Africa to implement the Kunming-Montreal Global Biodiversity Framework (GBF), ensuring that conservation efforts are guided by rigorous, science-based data. Similarly, through our resumed UNCCD mandate, we have continued to provide geospatial engine for Land Degradation Neutrality (LDN) reporting and helping member States meet their SDG Target 15.3 commitments with unprecedented precision.

Our commitment to human capital also reached new heights. The Regional Centre Training Institute (RCTI) saw a record enrollment of 1,053 students, graduating over 500 specialists who are now equipped to lead Africa's geospatial industry. As we conclude our 2025 reporting period with a 95% implementation rate of our Strategic Plan, I am confident that RCMRD is more than just a participant in the global space economy; we are a leader. We are ensuring that Africa's natural resources are managed with scientific integrity, securing a resilient and sustainable foundation for the next 50 years.

Dr. Emmanuel Nkurunziza

Director General, RCMRD

The 59th RCMRD Governing Council (GC) Meeting held at RCMRD, Nairobi, Kenya. Front row left to right: Mr. Andre Nonguierma- UNECA, Dr Emmanuel Nkurunziza- Director General RCMRD, Mr. Amos Gatheca- Deputy Head of Public Service, Kenya, Mr. Patrick Mucheleka, Chairperson, RCMRD GC & PS Ministry of Lands, Zambia and Ms. Lindiwe Mbingo -PS Ministry of Natural Resources and Energy-Eswatini.

1 2025 IMPACT HIGHLIGHTS

INSTITUTIONAL

- **Golden Jubilee** (RCMRD@50): Celebrated 50 years of geospatial excellence with **600+ delegates**.
- **African Union Leadership:** Appointed to Secretariat/Steering Comm. for Border GENIUS; Secretariat for UN-GGIM groups.
- **Global Recognition:** RCMRD MapBook acclaimed; featured presentation to **ESRI President**.
- **Quality Assurance:** ISO 9000:2015 recertification achieved, valid through **March 2028.**

STRATEGIC PARTNERSHIPS & NEW MANDATES

- **CBD Technical Designation:** Designated TSCC for CBD to support Eastern and Southern Africa.
- **New Strategic Ties:** Partnerships with CBD Secretariat, FARA, Akademiya 2063, and DLCO.
- **Facility Optimization:** Expanded infrastructure via MoUs with USIU and Kenya Film School.
- **UNCCD Mandate:** **Support in SDG)** target 15.3, focusing on Land Degradation Neutrality (LDN).

KNOWLEDGE MANAGEMENT & DIGITAL TRANSFORMATION

- **Social Media** Surge: LinkedIn (13,450+,+16.8%) and X(Twitter) (**10,000+** followers) growth.
- **Digital Learning:** Revamped institutional eLearning platform for remote capacity-building.
- **Academic Excellence** (RCTI): **1,053** new students; **500+** specialists graduated.

HUMAN CAPITAL & FINANCIAL STABILITY

- **Staff Welfare:** Implemented 50% salary increase to enhance motivation and retention.
- **Wellness Culture:** Institutionalized weekly Staff Wellness Program for a healthy work environment.
- **Recruitment**: 4 highly skilled staff were recruited

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RCMRD AT A GLANCE

Vision

To be a Premier Centre of Excellence in the provision of geo-information and allied technologies for Sustainable Development in the member States and other Stakeholders.

Mission

To promote sustainable development
through the generation and application of ICT services and products

STRATEGIC PILLARS

Our performance in 2025 tracked at a 95% implementation rate across our six key strategic goals:

RCMRD Profile

Human Capital

Financial Stability

Infrastructure

Product and Services

Knowledge Management

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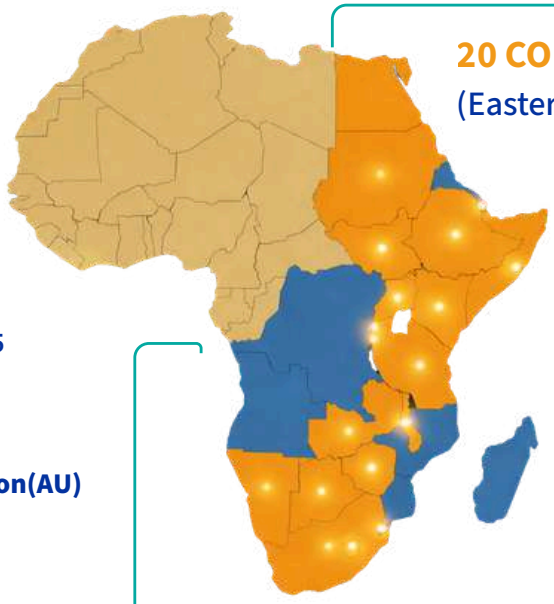
ABOUT RCMRD

The Regional Centre for Mapping of Resources for Development (RCMRD) was established in Nairobi, Kenya, in 1975 under the auspices of the United Nations Economic Commission for Africa (UNECA) and the then Organization of African Unity (OAU), now the African Union (AU). RCMRD is an inter-governmental organization and currently has 20 Contracting member States in the Eastern and Southern Africa Regions: Botswana, Burundi, Comoros, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Somalia, South Africa, South Sudan, Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

ESTABLISHED:
Nairobi, Kenya, 1975

AFFILIATIONS:
UNECA, African Union(AU)

STATUS:
Inter-governmental Organization



20 CONTRACTING MEMBER STATES
(Eastern & Southern Africa)

- Botswana
- Burundi
- Comoros
- Eswatini
- Ethiopia
- Kenya
- Lesotho
- Malawi
- Mauritius
- Namibia
- Rwanda
- Seychelles
- Somali
- South Africa
- South Sudan
- Sudan
- Tanzania
- Uganda
- Zambia
- Zimbabwe

Contracting Member States
Non-Contracting Member States

AFFILIATED COUNTRIES

Angola, Mozambique.
Madagascar, Djibouti, Eritrea,
Democratic Republic of Congo

4 RCMRD PROFILE

During the year, promotion of the Centre was undertaken through communication and outreach, stakeholder engagement and partnerships, workshops and conferences with a view to raise RCMRD profile and increase awareness of our products and services. Below is summary of what was accomplished under this strategic pillar.

Key Mandates & Strategic Alliances

- CBD mandate-designated as a Technical and Scientific Cooperation (TSC)
- Support Centre under the Convention on Biological Diversity (CBD).
- UN-GGIM Secretariat: AFREF & Land
- Administration working groups.
- AU Border Programme: Secretariat & Steering Committee for Border GENIUS
- Network.
- Formalized Partnerships: Forum for Agricultural Research in Africa (FARA),
- Akademuya 2063, Desert Locust Control Organization (DLCO).
- ISO Certification: Renewed from KEBS.
- Partnerships: IUCN, UNEP-WCMC (Protected Planet), EU-JRC (Africa Protected Areas Atlas).

International Conferences & Global Engagement

- AfriGEO Symposium World Bank Land Conference (Washington)
- Gender & Environment Data Alliance (GEDA)
- GHACOF 71 (Kenya)
- KM48 for Africa (Addis)
- Africa Multi-Hazard Early Warning System (Ghana)
- Living Planet Symposium (Vienna)
- ESRI User Conference (USA)
- GEO Global Forum (Italy)
- NewSpace Africa (Egypt)
- African Space Solutions Market (MASS) (Abidjan)
- Planetary Defense Conference (South Africa)

Visibility, Social Responsibility & Impact

- Digital Reach: 266,000+ Linkedin impressions, 23,000+ Facebook followers.
- Media Engagement: 1 Media
- Breakfast, 25 Media Features.
- Community Impact (CSR): Supported Treeside School for the Deaf & Mwamko Children's Home.

High level delegate during the RCMRD 50th Anniversary celebration at RCMRD, Nairobi, Kenya

5 THEMATIC AREAS

1 → 2 → 3 → 4

Ecosystems Management and Natural Resource Monitoring

Water Resources and Disaster Risk Reduction

Agriculture and Food security

Land use change, Land governance and Urban development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5.1 ECOSYSTEMS MANAGEMENT AND NATURAL RESOURCE MONITORING

Global Monitoring for Environment and Security (GMES) Phase II

Across Eastern and Southern Africa, wetlands and land are under severe pressure from unplanned land-use changes and climate variability. To address this, the GMES & Africa Phase II project- a joint program co-funded by the African Union Commission (AUC) and the European Union (EU)- has worked to sustain local institutional and technical capacities for using Earth Observation (EO) data. The project provided decision-makers with tools through three services: Land Degradation Monitoring and Assessment, Wetlands Monitoring and Assessment, and the Open Geographical Regional Reference Vector Database for Water and Agro-Ecological Zonings

Impact

By leveraging the Dunia Platform and Impact Toolbox to automate Land Degradation Index (LDI) and Wetland Assessment Maps for 2023 and 2024, the project has transitioned regional management from reactive observation to proactive, data-driven defense. These maps are now actively used in countries such as Uganda and Ethiopia to enforce protection zones. The project has institutionalized Earth Observation by training hundreds of professionals and showcasing these products on global stages like NewSpace Africa and the AfriGEO Symposium. As the current phase successfully concludes, it leaves behind a reach technical infrastructure and Geoportal that ensures sustainable socioeconomic development across the 14 implementing countries-https://gmesgeoportal.rcmrd.org/

Regional Centre of Excellence for Biodiversity, Forests, and Seascape Ecosystems

In 2025, Regional Centre of Excellence (RCoE) for Biodiversity, Forests and Seascape Ecosystems Management implemented within the framework of the Biodiversity component of the Africa Regional Centres of Excellence programme (ArcX) made a significant leap forward in advancing science-based conservation across Eastern and Southern Africa. ArcX is a continental initiative contributing to the African Union–European Union Innovation Agenda and aligned with the EU Global Gateway Strategy. Hosted by the RCMRD, RCoE implements regional activities across 24 countries in Eastern and Southern Africa.

The initiative is funded by the European Union and implemented by RCMRD and The Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF).

A key milestone in 2025 was the launch of the RCoE-ESA Map Book Vol. 1, which provides the first unified regional progress report on Target 3 (30×30) of the Kunming–Montreal Global Biodiversity Framework across the 24 participating countries.The Map Book further contributed to global policy and technical discussions, with presentations at the IUCN World Conservation Congress 2025 and the Esri User Conference 2025, where it was showcased as a model for applying spatial intelligence to biodiversity conservation.

RCoE also conducted two Integrated Management Effectiveness Tool (IMET) assessments at Naibunga Upper Community Conservancy in Kenya and Lusaka National Park in Zambia, generating critical insights to strengthen protected area management and inform evidence-based conservation planning.

Additionally, RCoE secured 17 national data contributor agreements and trained more than 4,500 participants worldwide in GIS-based conservation mapping, helping to institutionalize a permanent regional Geoportal and a data-driven stewardship model. Together, these efforts ensure that the global goal of protecting 30% of terrestrial and marine areas by 2030 is supported by the technical tools, data systems, and local capacity required for long-term ecosystem management.

Geo-Land Degradation Neutrality (GEO-LDN)

The lack of a centralized technical support system has historically prevented many member States from translating high-level SDG 15.3 targets into localized, actionable land restoration strategies. Without a structured framework to navigate complex geospatial data, national focal points face challenges in reporting progress to the UNCCD and implementing interventions capable of reversing degradation trends.To address the challenge, RCMRD has collaborated with the GEO-LDN Secretariat and GIZ to establish the GEO-LDN Helpdesk framework, providing member States with the centralized technical support and interoperable tools needed to effectively report and implement land restoration strategies.

Impact

The GEO-LDN Helpdesk has transformed how member States access technical assistance by providing a structured Standard Operating Procedure (SOP) for tracking user feedback.. By actively defining content outlines and providing technical backstopping, RCMRD has empowered nations to move beyond data collection to the actual implementation of restoration strategies. This partnership has ensured that the transition from monitoring degradation to achieving land neutrality is backed by a world-class, user-driven support system.

Convention on Biological Diversity (CBD).

RCMRD has been designated as a Technical and Scientific Cooperation (TSC) Support Centre under the Convention on Biological Diversity (CBD) to implement the Kunming-Montreal Global Biodiversity Framework across 12 Eastern and Southern African nations. Formally launched on January 27, 2026, this hub bridges science and policy for member states including Kenya, Ethiopia, and Rwanda by providing a one-stop platform for biodiversity data and expertise.

Core Functions:

1. Advance Cooperation: Drive scientific collaboration and technology transfer.
2. Data Hub: Centralize biodiversity datasets, tools, and technical expertise.
3. Partnerships: Facilitate matchmaking and joint regional initiatives.
4. Capacity Building: Strengthen national and regional biodiversity action.
5. Resource Mobilization: Secure funding for priority-driven environmental conservation.

Digital Earth Africa (DEA)

During the reporting period, the project successfully transitioned from technical development to regional implementation, delivering specialized capacity-building across four East African nations. In Djibouti and Comoros, stakeholders were trained in Coastline Mapping and Erosion Monitoring, while in Kenya and Uganda, the focus shifted to Wetlands Monitoring and Inventory Mapping.

The technical success was the deployment of the Digital Earth (DE) Africa Sandbox. This Python-based platform empowered users to analyze satellite data via ready-to-use Jupyter Notebooks, transforming complex Earth observation data into actionable insights for environmental management. A key highlight was the project's presence at the RCMRD @50 Celebrations, where an interactive exhibition showcased these innovations to a global audience of stakeholders.

The Impact

The project has transitioned from theoretical training to the delivery of operational environmental and social outcomes by institutionalizing the Digital Earth (DE) Africa Sandbox for real-time ecosystem monitoring. This transition has resulted in the first generation of functional wetlands inventory products for Kenya and Uganda, providing a critical technical baseline for national conservation and climate adaptation policies. Furthermore, the initiative has fostered inclusive regional growth through a gender-responsive approach that integrated women into the geospatial sector, while simultaneously driving new demand for advanced applications such as satellite-based ship detection in Comoros, signaling a strengthened commitment to maritime security and sustainable resource management


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5.2 WATER RESOURCES AND DISASTER RISK REDUCTION

Regional capacity building of COMESA member states in Eastern and Southern Africa for enhanced transparency in Climate Change Monitoring, Reporting and Verification

The Capacity Building Initiative for Transparency (CBIT) project functions as a specialized "climate accounting" framework designed to help countries accurately track and report their greenhouse gas emissions to meet Paris Agreement standards. The project is funded by the Global Environment Facility (GEF), led by Conservation International, and technically executed through the combined expertise of COMESA and RCMRD in direct collaboration with national Ministries of Environment in Zambia, Eritrea, Seychelles and Comoros.
The following summary details the achievement of the Multi-Country Climate Reporting Project across Comoros, Zambia, Eritrea, and Seychelles.

The Impact
During the reporting period, the project significantly enhanced regional climate resilience by training 350 professionals-ensuring a gender-inclusive distribution of expertise across various government and non-governmental organizations. This capacity-building initiative was meticulously designed to equip national teams with the skills required to manage Nationally Determined Contributions (NDCs) and Biennial Transparency Reports (BTRs).

By mastering IPCC software and advanced climate mitigation protocols, these countries are now positioned to meet their international obligations with high-precision, scientifically grounded data.
Parallel to these human capital gains, the project successfully established a cloud-based Regional Data Clearing House. This live portal serves as a centralized hub for archiving and sharing climate change datasets and relevant technical materials, representing a significant leap forward in regional data sovereignty.
Furthermore, the project successfully addressed the insight gap in carbon monitoring by conducting targeted diagnostics to identify specific data deficits in each country. Through specialized bridging sessions, technical staff are now better equipped to monitor and report on carbon stocks, ensuring that national climate actions are transparent and verifiable. This integrated approach-combining digital innovation with technical proficiency-ensures that the project countries can efficiently report to the UNCCD and contribute to global climate mitigation efforts with unprecedented accuracy.

Strengthening of the Network of Excellence for Disaster Risk Reduction in Africa

In the face of intensifying climate-related disasters, Africa is undergoing a shift from reactive emergency response to proactive, data-driven risk management. Supported by the UNDRR, the Network of Excellence (NoE) project serves as the engine of this transformation, equipping African institutions with the "actionable intelligence" needed to move beyond simple weather alerts toward sophisticated Impact-Based Early Warning Systems.

Impact

A core achievement of the project has been the decentralization of high-level technical expertise. By training regional experts in Machine Learning Algorithms (MLA) and Artificial Intelligence (AI), RCMRD has enabled the customization of precise triggers for climate-related disaster scenarios. This technological edge is best demonstrated by the enhancement of the myDewetra platform for Uganda established in collaboration with CIMA Foundation. By integrating local datasets, the project has transitioned the country toward multi-hazard impact forecasting, ensuring that warnings specifically address risks to local infrastructure and livelihoods.

The project's impact is further solidified through the establishment of a Pan-African Community of Practice (CoP) and a DRR Knowledge Portal. This portal currently consolidates critical exposure and vulnerability layers—such as data from the EW4-IGAD project in Kenya —providing a centralized evidence base for disaster management professionals. These tools are not merely theoretical; their effectiveness has been proven through simulation exercises and the validation of disaster response protocols in collaboration with stakeholders from Ghana and Uganda.

NoE project ensures that African institutions don't just predict the storm—they are operationally ready to protect people and assets before the first impact is felt.

Towards actionable impact-based early warning in Africa: integrating exposure and vulnerability into early warning systems

RCMRD together with the United Nations University - Institute for Environment and Human Security (UNU-EHS, Germany), the Intergovernmental Authority on Development (IGAD)/IGAD Climate Prediction & Applications Centre (ICPAC), and the Centro50

Internazionale in Monitoraggio Ambientale foundation (CIMA, Italy) jointly implemented the project to anticipate possible losses and damage by floods and droughts, and support early actions before a disaster strikes, which are efforts towards impact-based early warning. The project co-developed a sound approach for impact-based early warning systems (EWS) that incorporated data on exposure and vulnerability in existing early warning approaches and decision support systems (DSS) tools piloted in the IGAD region.

During the reporting period activities implemented include; Reviewing data needs and availability in both the IGAD region and the two pilots (Kenya and Ethiopia) and collecting data on exposure and vulnerability for different elements of interest, Development of exposure and vulnerability layers and profiles for the IGAD region and the two pilots (including parameters, thresholds, classification, etc, Identification of existing capacities and capacity strengthening needs of relevant actors in the pilots and co-development of a capacity strengthening strategy and Coordination and the implementation of capacity strengthening and training activities using developed modules and training structure.

Groundwater Mapping to the Somalia Groundwater for Resilience (GW4R)

The Groundwater for Resilience (GW4R) Program, financed by the World Bank, aims to increase sustainable access and management of groundwater as a key contribution to strengthen the resilience of targeted communities in the Horn of Africa region, in particular the borderlands of Kenya, Ethiopia and Somalia.

The Somalia GW4R project, implemented by RCMRD & Sahan Pioneers Ltd, which consists of three components: building and rehabilitation of infrastructure, building institutional capacity and knowledge systems, project management and M&E.Key deliverables under the project during the year include:
Groundwater mapping study and preparation of suitability maps to facilitate the selection of target areas for water supply infrastructure development (boreholes, manually drilled wells, hand-dug wells, sand dams and water pans). In addition, there was the preparation of socio-economic maps and selection of target areas taking into account water demands and supply deficit. Technical was provided to other Consultants involved in ongoing groundwater exploration and development activities in Somalia under the GW4R project. Web-based Geo-database (Open-Source platform) for water resources management was developed together with the migration of the Geo-database to the Somalia National Data Centre.(Has data been migrated already to the data centre


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5.3 AGRICULTURE AND FOOD SECURITY

Risk Management System for Plant Pests & Diseases (RMS for PP&D)

For years, the threat of plant pests and diseases operated in the shadows of data gaps and delayed reporting, leaving regional food systems vulnerable to sudden, devastating outbreaks. This project Supported by the Gates Foundation (GF) has fundamentally revolutionized agricultural biosecurity by bridging the gap between high-end satellite intelligence and real-time field observations and control operations within Nyeri, Kilifi and Kakamega counties .

Impact

RMS for PP&D project has revolutionized agricultural biosecurity by establishing a permanent command-and-control infrastructure in the Plant Protection and Food Safety Directorate and County Information Centres within the 3 counties. This network facilitates an immediate impact on food security through the Integrated Multi-Pest Reporting Tool, a mobile application that allows field officers to transmit live data. By 2025, the project achieved a breakthrough in using advanced geoportal analytics to produce Heat Maps that overlay climatic and socioeconomic data for pinpointing disease and pest hotspots. Consequently, the system now serves to support for the National and Pilot County governments response plans therefore increasing demand for regional resilience against plant pests and diseases.

Africa Agriculture Adaptation Atlas (AAAA)

Supported by the Gates Foundation, the AAAA project has shifted static data from the Atlas to an integrated planning framework. The initiative has successfully institutionalized data-driven decision-making across all 38 counties in Kenya, supporting agricultural adaptation localization, inclusivity and addressing challenges by marginalized groups through evidence-based decision making and aligned with priority agricultural policies such as BETA and CSA.

By disseminating county specific knowledge products such as Fact Sheets, Bulletins, Feasibility Reports, and Gender-Selected Enterprise Designs— the Atlas has directly influenced tangible investment decisions. For instance Kakamega County's strategic decision to double its crop protection budget from KES 5 million to KES 10 million based on Atlas insights and Machakos County decisions on purchase and distribution of Improved Kienyeji chicken and Galla goats with National government support. Tana River on the other hand has disseminated the knowledge product on county website for wider access and utilization https://tanariver.go.ke/agricultural-enterprise-fact-sheet/

Integrated Use of Multisource Remote Sensing Data for National-Scale Agricultural Drought Monitoring in Kenya (ADM Kenya)

The ADM-Kenya project, funded by the European Space Agency (ESA) and implemented by RCMRD in collaboration with ZALF , RSSGMH and icipe, has transformed national drought monitoring from broad forecasting into a high-resolution operational ecosystem. By integrating multisource remote sensing data, the initiative addressed the critical need for precise risk identification within Kenya's diverse farming systems, moving beyond simple mapping to provide actionable intelligence. This effort culminated in two landmark policy briefs —"Earth Observation for Drought Risk and Impact Assessment" and "Satellite-Based EO Data for Farming System Management"—which established the first comprehensive framework for aligning advanced satellite technology with national agricultural priorities to stop climate risks from devolving into humanitarian crises.

The Impact

The ADM-Kenya project has fundamentally strengthened Kenya's national capacity to monitor and mitigate agricultural drought. By empowering technical officers to distinguish between various irrigated and non irrigated farming systems and monitor water dynamics via satellite, the project has turned complex data into actionable resilience planning.

ESA-HyRelief Project Enhancing ECOSTRESS Drought Monitoring with Hyperspectral Narrowbands (HNBs)

The HyRELIEF project, a collaboration between the University of Twente and RCMRD, has transformed drought monitoring in Africa's Arid and Semi-Arid Lands (ASALs) by replacing traditional, low-resolution forecasts with "high-definition" satellite intelligence. By integrating advanced ECOSTRESS thermal data and PRISMA hyperspectral narrowbands, the initiative detects plant water stress long before it is visible on standard imagery, providing a critical early-warning window for smallholder farmers and pastoralists. This technological breakthrough has been successfully institutionalized through training and product validation with key responders like the National Drought Management Authority (NDMA) and ILRI, ensuring that precision data is directly translated into proactive policy and life-saving interventions on the ground.

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Impact

The project successfully completed the first phase by hosting intensive technical training and product validation workshops with early adopters, including the International Livestock Research Institute (ILRI) and the National Drought Management Authority (NDMA).

By using hyperspectral narrow bands, the project has enhanced the ability to track moisture levels at a granular level, providing the NDMA with superior data to trigger early response mechanisms.

As the project moves into its final phase, RCMRD is co-developing Policy Highlights to ensure these advanced geospatial products are institutionalized into national drought response frameworks.

Earth observation and environmental sensing for climate-smart sustainable Agro-pastoral ecosystem transformation in East Africa (ESSA)

The ESSA project, led by the University of Helsinki in partnership with RCMRD, has achieved a significant breakthrough in understanding the delicate connectivity between tropical upland forests and semi-arid agropastoral lowlands in Kenya and Ethiopia. By adopting a holistic ecosystem approach, the project has successfully moved from theoretical research to high-impact field applications, such as using drone-based aerial mapping in Taita Taveta to monitor critical water quality in community pans and assess surrounding vegetation health. This technical progress is matched by a strong commitment to long-term sustainability through advanced capacity building, supporting specialized PhD and Master's research to ensure local expertise remains at the forefront of climate-smart transitions.

Impact

The project's impact is most visible in its contribution to regional governance and food security. A major milestone was the successful scaling of the Rangelands Decision Support Tool (RDST), which has now transitioned from a Kenya-specific application to a regional resource covering Ethiopia's Oromia region (Munessa and Yebelo). By developing new methodologies for assessing water quality via Earth Observation—currently under peer review for publication—ESSA is providing agropastoralists in counties like Kajiado, Machakos, and Makueni with the data needed to balance livestock livelihoods with ecosystem sustainability. This integration of multisource environmental sensing ensures that decision-makers can now protect the multifunctionality of these landscapes, securing food and nutrition for vulnerable communities across East Africa.

Soils 4 Africa

For decades, the lack of a unified, high-resolution soil database hindered Africa's ability to combat land degradation and optimize agricultural productivity at scale. To address this challenge, RCMRD partnered with the International Soil Reference and Information Centre (ISRIC) under an EU-funded initiative to transform fragmented data into a cohesive, continental resource.

Impact

RCMRD's critical contribution involved developing value-added datasets and upgrading the project's WebGIS portal, effectively translating complex geospatial layers into accessible tools for national and regional planning. This impact culminated in a successful project close-out that not only consolidated Africa's soil information but also paved the way for a new collaboration with FARA to develop Soil Health Living Labs. By turning static data into an active soil health ecosystem, the project has established a permanent foundation for evidence-based agricultural innovation and long-term food security across the continent.


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5.4 LAND GOVERNANCE, LAND USE CHANGE & URBAN DEVELOPMENT

Go Blue Project : Connecting People, Cities and the Ocean: Innovative Land-Sea Planning and Management for a Sustainable and Resilient Kenyan Coasts

The GO Blue Project is a capacity-building initiative in partnership with UN-HABITAT and UNEP through funding by the European Union (EU) . The project objective was to strengthen the capacity for land-sea data collection and information management across six coastal counties in Kenya: Mombasa, Kilifi, Kwale, Lamu, Taita Taveta, and Tana River. The primary objective is to facilitate the effective and sustainable management of blue economy resources through integrated land sea planning principles and creation of knowledge portal (https://goblue.rcmrd.org/en/) for accessing the information of the project.

The project addressed data capacity gaps by training of trainers (ToT) on land sea planning guidelines through well documented LSP curriculum and training manuals accessible on the Go Blue knowledge portal. It focused on addressing key socio-economic and environmental challenges such as climate change, pollution, and biodiversity loss to promote a sustainable
blue economy. Data access and archiving was solved through purchase of state of the art computing systems complete with desktop installed with data node system developed by RCMRD staff, creating seamless data connection between the six counties through one system.
Total of 54 participants were trained from 6 counties. Digital data node is now functional connecting the six counties remotely where each county can connect using public IPS(http://jkpnodes.rcmrd.org/#/). A repository of learning and knowledge sharing is available on the central data node acting as a clearing house where all the learning materials are archived https://goblue.rcmrd.org/en/downloads. High resolution imagery for urban planning for Hola and Lamu counties were delivered through the project to aid achieving sustainable development through good use public space planning.

Data collection on Ground Control Points (GCPs)

The Geomatic and Land Management Section at RCMRD conducted an exercise to collect Ground Control Points (GCPs) in the Namagunga/Mukono area of Uganda on behalf of PASCO Corporation. PASCO is undertaking research on highly versatile data utilization services, which span the full spectrum from data processing to analysis for the development of satellite data application systems. The research leverages artificial intelligence (AI) and machine learning (ML) techniques for image classification and map updating. Its primary objective is to compare the effectiveness of AI-based products against traditional and contemporary methods of data updating. In addition, the study seeks to strengthen RCMRD's 49 capacity to apply these advanced technologies and promote their adoption across its member States. As part of this initiative, PASCO engaged RCMRD to collect GCPs in the specified area, identified through satellite imagery. These GCPs will be used to validate the accuracy and reliability of satellite data processed and analyzed using AI algorithms.

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GEO-SPATIAL TECHNOLOGIES SUPPORT & SERVICES

CALIBRATION & SERVICE OF SURVEY EQUIPMENT

We conduct calibration, servicing, repair,and upgrading of member States and private sector surveying and mapping instruments; This is carried out by the RCMRD engineering section which trains on maintenance, service, and calibration for professional technicians.
In 2025, RCMRD achieved a milestone in its engineering and technical support services, calibrating nearly 100 instruments for member States while expanding its footprint in the private sector. The year's highlights can be summarized into these three key areas:

Service Delivery & Revenue

- **Regional Impact:** Calibrated 98 government instruments across Tanzania, Uganda, and Kenya.
- **Private Sector Growth:** Serviced 157 instruments for key firms in Rwanda and Uganda (e.g., Achelís, Real Construction).
- **Strategic Outreach:** Targeted high-impact projects like Bugesera International Airport and Kenyan parastatals (KENHA, KURA) to expand market share.

Capacity Building & Training

- **Regional Training:** Upskilled 20 participants from 11 Member States via online calibration work.
- **Academic Support:** Mentored interns from Dedan Kimathi University and RCTI, strengthening the technical talent pipeline.
- **Specialized Skills:** Conducted two dedicated sessions for private and public sector technicians on equipment maintenance.

Operation Standards

- **Software Integrity:** Renewed Leica specialized licenses, maintaining factory-grade calibration standards.
- **Digital Presence:** Deployed targeted marketing and social media campaigns to drive customer engagement and service awareness.

DISSEMINATION OF GEOSPATIAL DATA

RCMRD partners with global data providers such as MAXAR, STAR.VISION, AEROSPACE GROUP LIMITED, etc., to offer high-resolution datasets (down to 30 cm) at subsidized rates to member states. These partnerships allow RCMRD to serve as a data reseller, supplying vital information to relevant institutions, organizations, and ministries. The following were key achievements in 2025

- Registered as a Data Controller with the ODPC
- Conducted 3-week training for County staff (FAO project).
- Delivered a 4-week course on GIS applications in conservation.
- Led a 2-week session on spatial tools for GBF Target 1.
- Supplied high-resolution imagery for land adjudication (Baringo), urban planning (Lamu/Benin), and Tanzania-Burundi boundary reaffirmation.
- Disseminated over 2,000 km² of free datasets to stakeholders and academia.
- Acquired aerial imagery from 1976–2003 to document RCMRD's 50-year evolution.

CAPACITY BUILDING & TRAINING

On December 5, 2025, the Regional Centre Training Institute (RCTI) celebrated a major milestone with its 2nd Graduation Ceremony. Presided over by H.E. Hon. Dr. Wilber Ottichilo, Governor of Vihiga County and a champion of geospatial technology, the event honored the Class of 2025 for their academic excellence and technical proficiency.

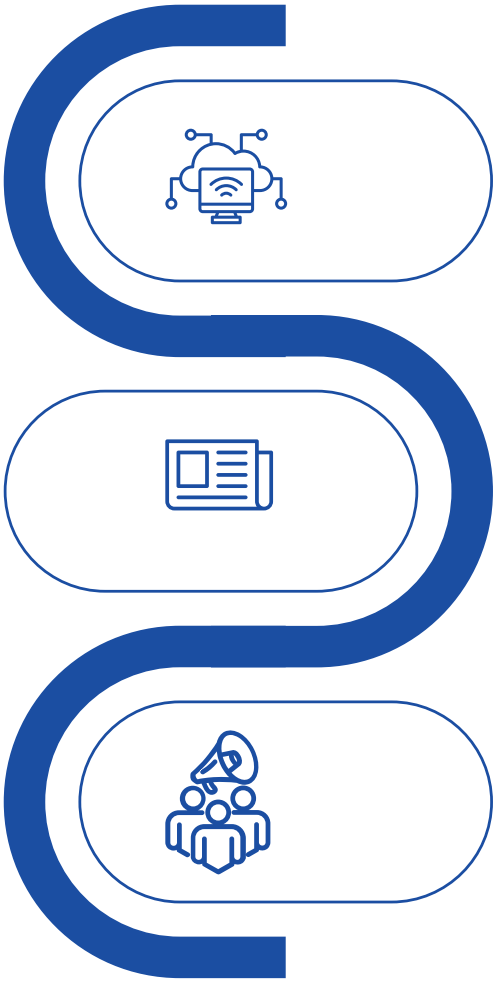
In 2025, RCTI implemented GEO-IT training programmes that include Diplomas and Certificates in Land Surveying, Cartography & GIS, Photogrammetry & Remote Sensing, and ICT where a total of 1,053 students have been admitted so far with the September intake still ongoing. In addition, a total of 409 have so far undertaken ICDL, Advanced ICDL, GIS and ICT short courses.

During the year, RCTI Hostels continued to attract students and participants undertaking courses at RCMRD and neighbouring Institutions that include Kenyatta University, Kenya College of Accountancy (KCA) University, United States International University (USIU), and KIPS College. MoU's were established with USIU, KCA and Kenya Film School on 32 student accommodation. The Hostel Occupancy rate of 57% was attained as a result of increased marketing activities, together with online presence.

06

KNOWLEDGE MANAGEMENT

In delivering the Knowledge Management as a focus area, the objective is to ensure effective operationalisation of monitoring, evaluation, and learning systems. Actual activities here included development, maintenance, and promotion of data geoportals. Managing and ensuring adequate stocking of the library (resource centre), quality management systems, among others.



Digital Platforms & Open Data

- Open Data Geoportal (geoportal.rcmrd.org): 461,900+ visitors (2026).
- eLearning Portal (onlinelearning.rcmrd.org): 4,500+ global participants in single course.
- Library Resources: 180,805 online, 10,527 physical via K-nimbus.

Major Publications & Strategic Tools

- RCMRD Map Book: Spatial data for 24 countries, SDG Target 3 (30x30).
- RCMRD@50 Story Map: Digital timeline 1975-date.
- State of Protected Areas Report: Regional analysis with IUCN & EU-JRC.
- Protected Planet 2024 Report: Global status with UNEP-WCMC.

Awareness & Community Engagement

- Arts and Maps Competition: Theme 'Conserve Nature...' €16,000 prize.
- Knowledge-Linked Sports: 10-event tournament (Cycling, Football) for biodiversity.
- Community of Practice: Synergies with Africa Geoportal, Protected Planet, EU Commission.

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