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RCMRD/SERVIR Eastern & Southern Africa Collaborate with Kenya Wildlife Conservancy Association (KWCA) to Train Conservancy Managers in the use of GIS and Satellite Data for Conservation

The Maasai Mara Wildlife Conservation Association (MMWCA)[1] and Amboseli Ecosystem Trust (AET)[2] are two key biodiversity hotspots in Kenya, and whose wildlife corridors extend into neighbouring Tanzania. The two ecosystems constitute habitats for very important wildlife species (keystones species such as Elephants). The Mara ecosystem accounts for 25% of Kenya's wildlife (Figure 1) and nearly three quarters of

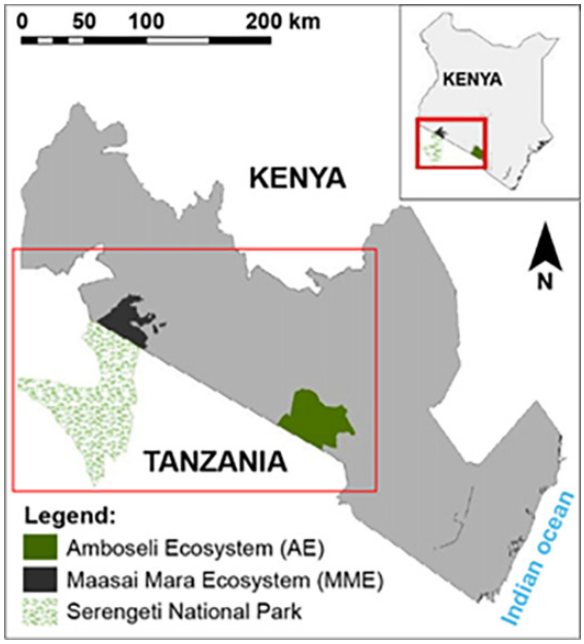

Figure 1. The location of Maasai Mara and Amboseli ecosystems in Kenya.

the protected area population. On the other hand, the Amboseli ecosystem is one of Kenya's premier parks both in terms of biodiversity conservation and tourist visitation. The MMWCA manages 15 conservancies covering an area of 347,011 acres (about 1400 square kilometres), supporting 14,528 land-owners and 280 community rangers, while the AET has current membership of 20 conservancies covering approximately 394,834 acres (about 1597 square kilometres) supporting 65,881 households and close to 500 community rangers.

The Mara and Amboseli ecosystems are valuable national and community assets, whose conservation and sustainability will greatly enhance the wealth and resilience of the local communities to climate change and economic shocks. Unfortunately, the impact of environmental degradation due to human activities and the effects of climate change are apparent in both ecosystems, which calls for prudent and data driven conservation efforts. However, given the vast areas, and a myriad of threats to natural ecosystems and wildlife, conservation managers must improve their skills in data collection, analysis and synthesis for prompt decision making. As a result, conservation managers, policymakers and others are increasingly relying on geospatial information and analysis to monitor and assess pressures on habitats, understand species status, vulnerability and distribution patterns. Geographic information science (GIS) is therefore critical in monitoring external threats, planning of conservation actions and response.

The SERVIR Eastern and Southern Africa (E&SA) project[3] is a joint initiative of the National Aeronautics and Space Administration (NASA), the United States Agency for International Development (USAID), and the Regional Centre for Mapping of Resources for Development (RCMRD)[4]. SERVIR partners with countries and organizations in eastern and southern Africa to address critical challenges in climate change, food security, water and related disasters, land use, and air quality. Using satellite data and geospatial technology, SERVIR co-develops innovative solutions through a network of regional hubs to improve resilience and sustainable resource management at local, national and regional scales. In Kenya, SERVIR is collaborating with KWCA to build a GIS portal for managing conservation data, and also training conservancy managers in the use of GIS and satellite imagery derived from NASA and Copernicus hubs to improve decisions in conservation. Recently, SERVIR E&SA and

[1] https://maraconservancies.org/
[2] https://amboseliecosystem.org/
[3] https://servirglobal.net/Regions/ESAfrica
[4] https://www.nasa.gov/

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KWCA brought together 30 conservancy managers from the MMWCA and AET for training in the application of geospatial tools in conservation management and monitoring. The managers were taken through the use of GPS devices, open-source GIS and remote sensing software (QGIS), data use and manipulation in a GIS environment and map creation of key natural resources. The training models were built on open-source tools to facilitate access to and manipulation of GIS and remote sensing (satellite) data and products within the conservation networks.

The collaboration between the RCMRD and KWCA fulfils SERVIR's strategic goal to empower regional and national actors in the use of Earth observation information for development decision making. KWCA works with landowners and communities through 167 conservancies in Kenya to sustainably conserve and manage wildlife and their habitat outside formal protected areas for the benefit of the people of Kenya. At the same time RCMRD and SERVIR bridge the skills gap in use of geospatial tools for better decision making. The partnership is built around a Memorandum of Understanding covering collaboration in the areas of data, tools co-development and capacity enhancement in the application of geospatial tools in conservation management. The SERVIR project believes improved capacity in the use of geospatial tools and technologies among the conservation practitioners will be important in strengthening conservation efforts on the ground and enhance citizen science led data collection among the conservation community. This would enable the various conservation actors like KWCA and communities to play key roles in defining future spatial data and products which serve local conservation and ecological needs. On the gender lens, KWCA did a remarkable job of identifying a number of women to participate in the training, making up approximately 25% of the participants Figure 2.

Figure 2: Ms. Faria shows a map of grazing zones she developed during the training, for her practical exercises.

Following the successful training, the conservancy managers expressed confidence that the skills acquired during the engagement will be vital in their daily conservation monitoring activities. According to Daniel Kaaka, the Amboseli Ecosystem Coordinator, "The remote sensing and GIS training was a hands-on opportunity for Amboseli Ecosystem conservancy managers to interrogate and inform decision making by the click of a button." Sarah Omusala, of Gamewatchers Safaris Conservation and Porini Camps, observed that "the training empowered the conservancy managers in collecting data on flora and fauna, thus adding to their skills and tools for managing protected areas, and also monitoring habitat health, identifying the wild animals and livestock movements, illegal activities, and grazing areas based on land use and landcover types".

References

https://www.rcmrd.org/about-us/about-rcmrd

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