



Earth Observation in an Afromontane Environment

Dr Samuel Adelabu, Department of Geography

Mountain areas are highly dynamic and sensitive regions. Changes in human land use and climate conditions, an increasing number of natural hazard phenomena, and increased competition in a globalized economy are putting the environment and societies in mountain regions under pressure. Moreover, the socio-ecological dynamics in many African mountain regions are complex, and still remain largely unexplored. Furthermore, the quality of mountain biodiversity, ecosystems and mountain catchments is deteriorating rapidly. Consequently, the observation of these phenomena or their representative indicators at various scales in time and space has become an urgent task. Monitoring i.e. the repetition of such observation activities—in sufficient frequency for large and remote areas is only economically feasible when supported by remote sensing techniques. Some products based on Earth Observation (EO) data have been developed successfully and have become standard applications over the last decade, an example being land use mapping. However, a large number of potential remote sensing based tools are still “work in progress,” e.g. those aiming to take advantage of the latest available techniques such as very high resolution optical satellite images, radar, or laser sensors. This is particularly true for Afromontane regions, where steep terrain complicates image processing, whilst the heterogeneous landscapes demand products in fine resolution and of high spatial accuracy at the same time.

Currently, our research is based on Fire Risk mapping, Species Mapping and Landuse/Landcover mapping. In order to identify the status quo and future potential of EO based applications in Afromontane areas therefore, discussions about problems and their current and future potential solutions should be of utmost importance. This field of the Afromontane Research Unit (ARU) embrace a range of topics, from nature and environmental protection issues such as air quality, loss of biodiversity, forest and water management, hazardous events such as landslides, mudflows etc. and the impact of climate change using earth observation.

For more information: Refer to Dr Adelabu's profile listed under Researchers/Project leaders