Overview
The implementation of REDD+ requires countries to be supported in strengthening their technical capacities across a wide range of work areas, from forest inventories to land use mapping. Access to affordable geospatial software and training is key to longer-term sustainability of MRV deliverables for REDD+. Funds to monitor forests and the carbon they contain are still limited, so gaining access to state-of-the-art open-source software for spatial data processing is particularly important for tropical countries but also anyone doing advanced analysis of geospatial data. This technical training workshop is being conducted as part of a NASA-USAID SERVIR funded project “Forest carbon assessment for REDD+ in the East Africa SERVIR region.” We will introduce participants to data processing with the “R” software package, focusing on processing spatial data for forest and carbon monitoring and mapping in the context of REDD+. In recent years “R” has added numerous spatial data processing functions that allow one to easily access sophisticated data processing algorithms often unavailable in any other software. At the end of this workshop students will know the fundamentals of using R and many of the spatial data processing functions, and will have the foundation for learning more as new capabilities are added to the evolving R data processing archive.

AGENDA

Tuesday 4th, November 2014

8:30- 9:00: Participant registration RCMRD

9:00 – 10:45: Introductions: REDD+ overview and workshop objectives [1:45 hours]

● Opening of workshop by SERVIR-RCMRD - Tesfaye Korme (TBC) (5 min)
• REDD+ & Global Climate Change - USAID Perspective - Chris Schaan (15min)
• NASA-USAID SERVIR Carbon Project overview- Dr. Nadine Laporte (15 min)
• Linking REDD+ Projects to National REDD+ Strategy in Kenya- Alfred Gichu (TBC) (15 min)
• A System for Land-based Emissions Estimation in Kenya (SLEEK)- Peter Ndunda- Clinton Climate Initiative (15 min)
• Intro workshop - Ned Horning (American Museum of Natural History)- (15 min)

10:45 – 11:30 Coffee break
Participant will be asked to introduce themselves to the group

11:30 – 12:00 Example R application: deriving biomass maps from field and lidar data [30 min]

12:00 – 13:00 Lunch

13:00 – 14:00 Introduction to R and R Studio [1 hour]

14:00 – 15:00 Understanding R basics [1 hour]

15:00 – 15:15 Coffee break

15:15 - 16:30 R basics continued [1:15 hours]

16:30 – 17:00 Overview of day and plan for tomorrow [30 min]

Wednesday 5th, November 2014

9:00 – 9:30 Review of previous day [30 min]

9:30 – 11:00 Understanding R continued [1.5 hours]

11:00 – 12:00 Vector data processing in R [1 hour]

12:00 – 13:00 Lunch

13:00 – 15:00 Vector processing continued [1.5 hours]

15:00 – 15:15 Coffee break

15:15 – 16:30 Image data processing in R [2 hours]

16:30 – 17:00 Overview of day and plan for tomorrow [30 min]
Thursday 6th, November 2014

9:00 – 9:30 Review of previous day [30 min]

9:30 – 12:00 Image Classification in R using Random Forests [4 hours]

12:00 – 13:00 Lunch

13:00 – 15:00 Special topics to be determined based on student interest (e.g., working with segmented images, using scripts to automate work flows, fractional vegetation cover mapping, MODIS data download, etc.)

15:00 – 15:15 Coffee break

15:15 - 16:30 Special topics to be determined based on student interest (e.g., working with segmented images, using scripts to automate work flows, fractional vegetation cover mapping, MODIS data download, etc.)

16:30 – 17:00 Summary of workshop and closing discussion [30 min]

Software use:
R
R packages [maptools, randomForest, raster, rgdal, sp, mblm, stringr]
RStudio
GIS software – QGIS and/or ArcGIS

Participant skill requirements:
Participants attending this workshop should have a basic understanding of GIS and remote sensing concepts. The workshop will focus on using R and not on learning fundamental concepts such as map projections, vector and raster data, or image classification. Some programming experience will be helpful but is not required. The course will be taught in English.