**Volunteer internship: Mapping forest cover changes in Central Africa using Google Earth Engine and machine learning**

**Closing date:** 31 August
**Start date:** 15 September
**Duration and hours:** 3-6 months, days and hours of placement to be agreed
**Reporting to:** Mapping Coordinator, Mapping and Monitoring Programme
**Location:** RFUK's office (North London) or remote

## The Rainforest Foundation (UK)

Established in 1989, the Rainforest Foundation UK (RFUK) is an independent, non-governmental organization that support indigenous peoples and traditional populations of the world's rainforest to:

- Secure and control the natural resources necessary for their long-term wellbeing and managing these resources in ways, which do not harm their environment, violate their culture or compromise their future.
- Develop means to protect their individual and collective rights and to obtain, shape and control basic services from the state.

## Background: The Congo Basin Community Atlas, a MappingForRights (MfR) initiative

In close collaboration with civil society organisations and government agencies, RFUK has been developing and undertaking participatory mapping in the Congo Basin for 15 years, with the aim of supporting indigenous and traditional communities in their efforts to fulfil their rights to land and livelihood.

Mapping for Rights (MfR) is an award-winning, interactive community map project for the Congo Basin, which started in November 2011. The project has supported hundreds of forest communities across the Congo Basin in producing maps of their lands and resources covering over 9 million hectares. Under the Mapping for Rights Programme, the Congo Basin Community Atlas (CBCA) is an interactive digital platform that hosts community-collected data and provide access to third-party datasets on land cover, forests and government land uses following a distributed architecture.

The visualisation and accessibility of this data can help to engage policy-makers, the private sector and the international community in a vital step towards developing forest policy that help secure local communities' rights such as the development of community forests.

## Objectives and tasks of the placement

New web-based Interactive Development Environment (IDE) such as Google Earth Engine offer unprecedented opportunities to access, assess and exploit ready to use satellite imagery and geospatial datasets allowing mapping human settlements, land cover and land cover changes at different time scales and spatial resolutions. We are using very high-resolution imagery to undertake land use planning projects with communities and data from Copernicus Sentinel-1 and Sentinel-2 to test and validate recent forest cover changes for monitoring purposes in Central Africa. We aim at

using the results to support deforestation baseline estimates, analytics, and implement in-house dashboard.

**Responsibilities**

- Research Sentinel-based scripts/algorithms on tree cover changes worldwide
- Create composites and analysis of Copernicus Sentinel 1 and Sentinel 2 data using the Google Earth Engine to derive tree cover loss layers for recent cover changes and work on data visualization in combination with community-generated data
- Derive area-based aggregated indicators on land cover, land cover changes and GHH emissions applied to community forest concessions as well as other type of land uses.
- Write a final report and make a presentation on the findings

**Benefits**

This placement is an excellent opportunity for someone interested in gaining experience with cloud-based image processing and further interaction with web applications.

- The assignment shall be 3-6 months intermittently, with the ability to work remotely and meet regularly.
- The position can be undertaken in conjunction with University studies.
- The candidate will receive support and supervision to perform the assigned tasks.
- Reimbursement of reasonable daily travel and lunch expenses

**Requirements**

- Enthusiastic team player with the ability to work on assigned tasks independently
- Background in earth observation, remote sensing and satellite image processing
- Experience in the manipulation of images and image processing with Python and JS.
- Knowledge or interest in the Congo Basin or African context
- Good command of English and communication skills

To apply, please complete an application form and submit it to jobs@rainforestuk.org with the 'Volunteer internship: Mapping forest cover changes in Central Africa using Google Earth Engine and machine learning' in the subject line. The deadline to apply is 31 August 2019.