Mapping the health of forest reserves in Ghana

Little was known about the state of Ghana’s forest reserves over the past 20 years. New maps are helping to fill these gaps and open up new opportunities for restoration.

Focusing efforts for maximum impact

Ghana’s deforestation rate remains at around 2% per year and forest degradation is known to be widespread. While the government is taking steps to restore lost forests, there is still a good deal of uncertainty about where restoration and REDD+ efforts should be focused for maximum impact. According to Ghana’s 2010 REDD+ readiness proposal, the principal drivers of deforestation and degradation are agricultural expansion, timber harvesting, urban sprawl and infrastructure development, mining and mineral exploitation. While forest reserves are intended to be protected from these threats, there is clear evidence of agricultural encroachment and illegal logging taking place.

Before investing in efforts to restore forest cover in degraded reserves, we need to know where degradation and forest loss has occurred and which reserves should be prioritised for restoration. IUCN and partners undertook
an updated spatial assessment of the condition of Ghana’s 266 forest reserves, which cover a total of 2.5 million ha. This produced new, up-to-date maps of the condition of Ghana’s forest reserves using a combination of remote sensing technology, specialist expertise and local in-depth knowledge of communities living near the reserves. The maps will be useful tools for identifying which reserves are most in need of restoration.

Participatory mapping

In Ghana, mapping was accomplished through a participatory, triangulation approach for forest reserve mapping, with forest stakeholders updating satellite imagery maps of forest cover, and experts consulting with district forestry staff and local communities to obtain a higher resolution spatial assessment. This merged the ‘best of science’ (GIS data) with the ‘best of local knowledge’ (multistakeholder workshops and community consultations). National expertise was provided by, among others, the Resources Management Support Centre of Ghana’s Forestry Commission and the Centre for Remote Sensing and Geographical Information Services of the University of Ghana.

The benefits of robust maps

The mapping complemented a recent assessment of FLR opportunities in Ghana. This earlier assessment, involving IUCN and several partner organisations, mapped restoration opportunities in areas outside of the forest reserves. It also involved the production of carbon abatement curves to rank the restoration interventions according to their net economic benefits per ton of carbon sequestered.

Beyond identifying many areas in need of restoration, the most important result of this mapping project was the knowledge and skills gained by the stakeholders involved. The enhanced capacities of Forestry Commission and Resources Management Support Centre staff will be very useful when the time comes to review and update this map. For the Centre for Remote Sensing and Geographical Information Services staff, already well versed in mapping techniques, the major benefit has come from their interactions with local communities. These interactions not only enabled them to improve the accuracy of their maps, but also gave them valuable insights on how knowledgeable local communities are about their local forests.
Specific outcomes

• The forest reserve conditions map has already been used in the planning of several infrastructure projects (construction of a dam and erection of electricity pylons) to ensure these interventions do not impact forest reserves.

• The restoration opportunities map (and associated analyses on net economic benefits per ton of carbon sequestered) has revealed two regions of the country – Brong Ahafo and Western – as having particularly high potential for carbon sequestration through FLR. On the basis of these findings, the Ministry of Land and Natural Resources, with support from the World Bank, prioritised these two regions for Ghana’s Forest Investment Programme. The forest reserve health map confirmed that these two regions also contained badly degraded forest reserves and were therefore high priority areas for restoration interventions.

• Together the restoration opportunities map and the forest reserve health map contributed to the selection of the Brong Ahafo and Northern Regions for Ghana’s Emission Reduction Programme. The maps showed significant areas within these two regions as having high potential for cocoa-based agroforestry and shea production.

• Detailed restoration opportunity maps were also generated for two REDD+ pilot sites in Ghana: Wassa Amenfi Landscape in the Western Region and Portal Forest Estates Landscape in the Central Region. These maps, incorporating refinements to the national restoration opportunities map, helped farmers in these landscapes understand the opportunities available to them and choose appropriate types of restoration interventions.

New knowledge

These maps are powerful tools to help guide the work of decision-makers and planners, not only in the context of REDD+ and forest investment, but also across other sectors (including infrastructure development).

The detailed knowledge held by district-level forest staff and local communities regarding the state of their forests is an invaluable resource for national-level planning of forest-related investments and interventions.
References


Further Resources


- IUCN web archive [http://www.iucn.org/content/iucn-maps-health-ghana%E2%80%99s-forest-reserves](http://www.iucn.org/content/iucn-maps-health-ghana%E2%80%99s-forest-reserves)

- Mapping FLR Opportunities in Ghana (powerpoint) [http://www.profor.info/sites/profor.info/files/docs/Ghana%20FLR%20PRESENTATION%20PROFOR.pdf](http://www.profor.info/sites/profor.info/files/docs/Ghana%20FLR%20PRESENTATION%20PROFOR.pdf)

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