



Food and Agriculture  
Organization of the  
United Nations

## BRIEF OUTLOOK ON FORESTRY, WILDLIFE AND PROTECTED AREAS IN THE EASTERN AFRICA SUBREGION



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### FAO Subregional Office for Eastern Africa

The FAO Subregional Office for Eastern Africa (SFE) provides support to FAO country programmes in Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda. SFE's mission is to support participatory and sustainable forest management in order to enhance economic, social and environmental well-being in Eastern Africa. The goal is for forestry to contribute to national GDP in the subregion, and at the same time mitigate the effects of climate change and reduce forest degradation.



*Source: FAO SFE (2015). The designations employed and the presentation of material in the map does not imply the expression of any opinion whatsoever on the part of FAO concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.*



## Changes in forest policy, legislation and institutions

Key factors that will undeniably influence future developments in the forestry sector are policy and institutions. With countries in the subregion adopting more or less the fundamentals of democratic systems, efforts are being channelled to support decentralized government administration in ensuring the review of their forest legislation and policies that would better enable local communities to manage their forests sustainably. Systems being put in place consist of participatory approaches that increase local communities' ownership in managing resources and in involving civil society organizations in addressing public interest issues related to, for example, illegal logging, deforestation and creating awareness of forest resource management. However, decentralization processes that occurred in most countries in the subregion have weakened local governments' influence over policies and legal frameworks, diminishing their capacity to manage and administer forest initiatives. There is therefore a need to strengthen the legal and institutional capacities of responsible forestry institutions in order to improve knowledge and mechanisms that will allow them to deal with emerging issues in an effective and sustainable manner.



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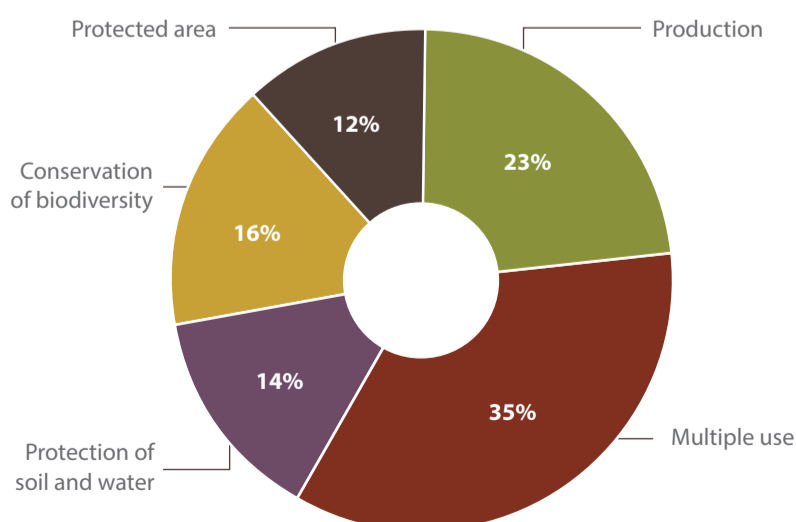
## Forest resources: Situation and analysis

In 2015 the total forested area in the subregion was estimated at 45.32 million hectares, representing an average proportion of 10.2 percent of the land area. Forested areas in the region have been declining as a result of population pressure, high demand for wooded forest products, poor forest management and forest degradation. In order to understand potential forestry contributions to national GDP and climate change mitigation, a look into the countries' primary designated forest functions, forest characteristics and trends in the export value of wood products could help shed light on the current situation in the Eastern Africa subregion.

## Forest functions

The designated functions of forests in Eastern African countries mostly pertain to production, the protection of soil and water, the conservation of biodiversity, the maintenance of protected areas and other multiple uses. In 2015, Somalia, Ethiopia, Rwanda and Djibouti were the only four countries to have reported multiple uses for their forests. Kenya's and Burundi's forest function, on the other hand, mostly involves soil and water protection, while in Sudan it chiefly entails production and conservation of biodiversity. By 2015, Uganda and Sudan were the only two countries to use their forests predominantly for biodiversity conservation and maintenance of protected areas.

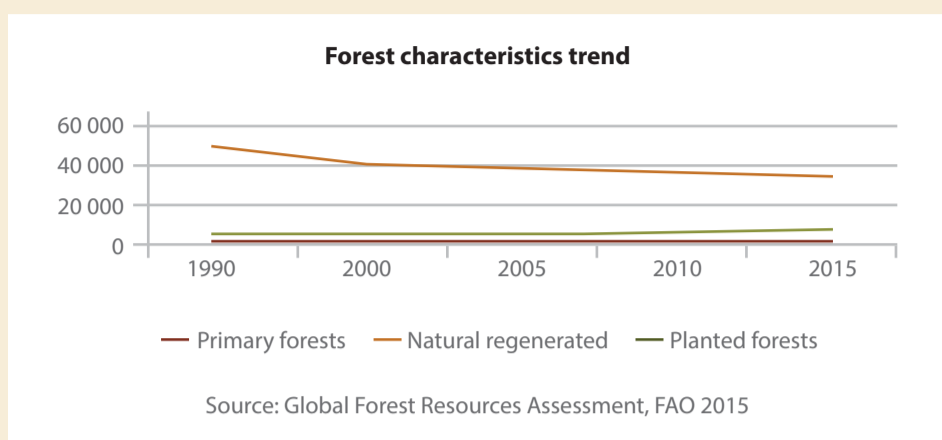
Forest functions of the total forest area in 2015



Source: Global Forest Resources Assessment, FAO 2015

## Forest characteristics

Primary forests in the subregion represented a total of 1.4 million hectares in 2015. As for naturally regenerated forests, a total of 36 million hectares were recorded, while planted forests represented a total of around nine million hectares. A trend that has emerged over the years shows that primary forest has been relatively stable, while there has been a gradual decline in natural regenerated forests and a slight increase in planted forests.



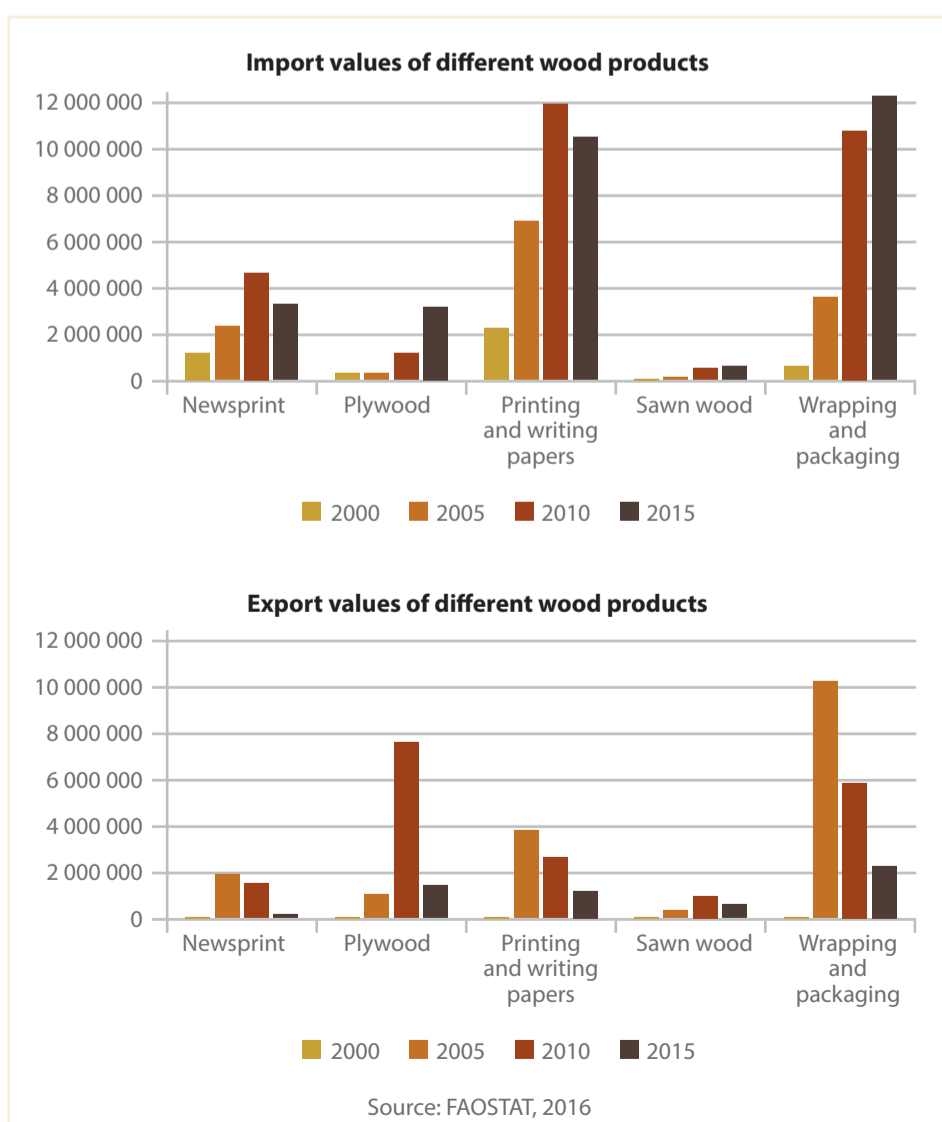
## A high wood fuel demand

The trend of wood removal from 1990 to 2010 shows a sharp increase in wood fuel extraction. Of the total wood removed in the subregion, wood fuel extraction represents over 90 percent. This implies that wood fuel remains an important source of energy in the majority of household across Eastern Africa.

Countries	Total wood removal				Wood fuel removal			
	Total volume in million m <sup>3</sup>				Total volume in million m <sup>3</sup>			
	1990	2000	2005	2010	1990	2000	2005	2010
Burundi	6.42	6.19	9.42	10.73	5.84	5.42	8.54	9.85
Djibouti	0.2	0.29	0.32	0.36	0.2	0.29	0.32	0.36
Ethiopia	-	89.93	97.41	104.21	-	87.47	94.48	101.27
Kenya	18.54	21.64	26.71	27.65	16.79	19.66	25.6	26.4
Rwanda	6.39	5.4	5.5	6.21	6.37	5	5	5
Somalia	6.37	9.34	11.31	13.61	6.26	9.23	11.2	13.5
Sudan	-	-	-	-	-	-	-	-
Uganda	31	37.27	40.12	43.73	29.27	34.09	36.8	39.64

Source: Global Forest Resources Assessment, FAO 2015

Demand for processed wood such as sawn wood, wood panels, newsprint (especially for printing and writing paper) has increased, with the import value of US\$ 37.218 thousand in 2000 increasing to US\$ 179.081 thousand in 2010. The production and export of processed wood are making headway in the subregion and generating income contributing to countries' GDP, especially in terms of wood panels. The export value of wood panels increased from US\$ 882 thousand in 2000 to US\$ 13.944 thousand in 2010.



There is also significant potential in the region for the exploitation of non-timber forest products (NTFP) for local consumption and commercialization. The main NTFPs that can be found in the subregion are medicinal plants, bamboo, gums and resins, and bee products. Other products such as wild fruits, vegetables, bushmeat and fodder can help rural communities survive during difficult periods as an available and vital secondary source of food. At a national level, NTFPs can greatly contribute to national income. From 2005 to 2009, Sudan exported, on average, 32 680 tonnes of gum arabic with a mean value of US\$ 70.36 million (FAO, 2012).

Despite the importance of NTFPs in enhancing environmental conservation, food security and poverty reduction, their potential is still not widely recognized in the subregion, as non-wood forest products are principally used for rural subsistence and for local markets. This, in effect, has caused dependence on wooded forest resources, resulting in deforestation.

### Bamboo initiative

FAO SFE is currently supporting a bamboo initiative in Rwanda which will secure community livelihoods through the promotion and utilization of bamboo resources. Bamboo is a multipurpose non-timber forest product that not only has the capability of generating income through processing, trade and marketing, but also has great conservation capabilities to restore degraded soils and maintain biodiversity.

## Climate change mitigation

Forests have an important role to play in carbon storage, with the capacity to sequester large amounts of carbon from the atmosphere. At a global level, forestry contributes to 17.4 percent of global greenhouse gas emissions, mostly from land-use change. An important component of the climate change mitigation strategy looks into the removal of emissions through carbon sequestration. This can be achieved by converting non-forest areas into forest land use, and by restoring degraded forest areas. In the subregion there has been a slight negative trend in the carbon stock of living forest biomass over the years as a result of forest encroachment caused by agricultural expansion.

Countries	Carbon stock in living forest biomass (million tonnes)			
	2000	2005	2010	2015
Burundi	18	18	25	27
Djibouti	n.s	n.s	n.s	n.s
Ethiopia	254	236	219	n.s
Kenya	484	549	591	634
Rwanda	18	35	39	43
Somalia	439	415	394	376
Sudan	2 291	2 085	2 036	1 973
Uganda	140	124	101	77

Source: Global Forest Resources Assessment, FAO 2015

A more accurate estimation of the biomass and carbon stock can be made by looking at the growing stock in both forest and other wooded land. In the subregion, the growing stock of forests is generally weak. Only Rwanda, Kenya and Burundi are making some headway in their afforestation and reforestation strategies. This could be attributed to their governments' recently strengthened forestry institutions.

Countries	Trend of growing stock in forest in million m <sup>3</sup>				
	1990	2000	2005	2010	2015
Burundi	37	23	22	30	33
Djibouti	r	r	r	r	r
Ethiopia	348	306	285	264	251
Kenya	849	639	725	781	836
Rwanda	70	35	69	79	85
Somalia	207	188	178	169	159
Sudan	1638	1600	1456	1422	1378
Uganda	206	168	149	121	92

Source: Global Forest Resources Assessment, FAO 2015





## Ecotourism

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Ecotourism is wildlife-based tourism in which communities living in close proximity to protected areas are involved in managing natural resources and protecting wildlife in a **sustainable manner**. The concept creates employment and is a source of revenue for communities, which ensures that there is sufficient motivation to preserve, protect and maintain natural resources and wildlife.

Excessive tourism may pose a threat to ecosystems, local economies and indigenous cultures. Not being able to limit the number of tourists may lead wild animals to become accustomed to human presence as non-threatening, which could exacerbate human-wildlife conflicts. Enterprises could moreover take advantage of ecotourism as a way of exploiting local communities for personal gain. In some cases, indigenous communities have been displaced or had their rightful traditional access to natural areas dispossessed.



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## Overview of wildlife and protected areas

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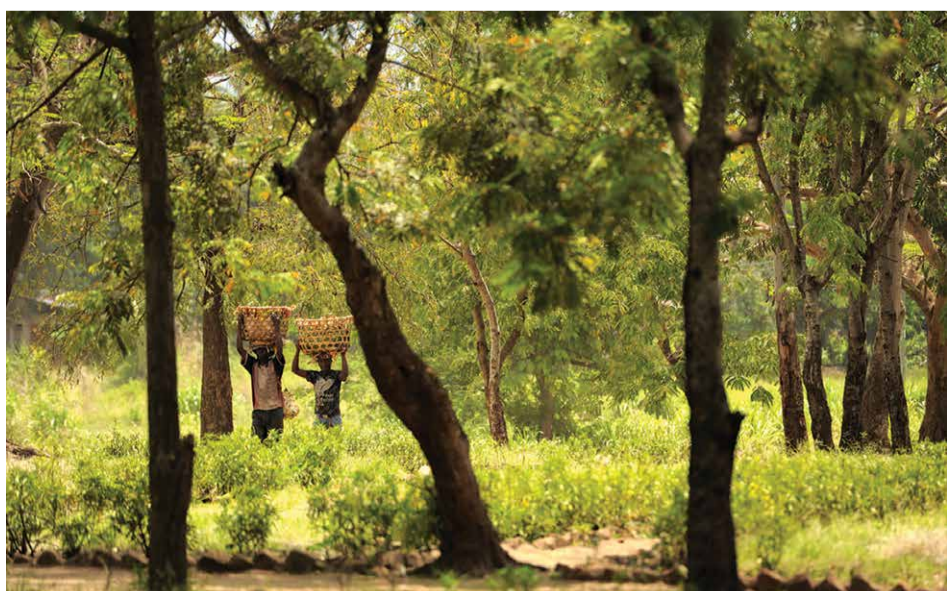
Eastern Africa has the highest percentage of endemic species of mammals, birds, reptiles and amphibians in Africa. During the colonial era, the notion of conservation was brought up and introduced into laws and conventions governing the preservation of fauna and flora – aimed at safeguarding the untamed natural state of the African savannah. This gave way to the creation of conservation areas and parks, also intended for recreational purposes. Wildlife management, especially in Eastern Africa today, uses the approach of conservation through protected areas – a land-use system that ensures the enclosure of land for wildlife and their habitats, and is regulated and managed to achieve specific conservation objectives. The approach has been challenged due to the presence of wildlife in areas also occupied by humans located around and in close proximity to protected areas. This causes great concern for Africa's wildlife as well as communities' access to resources. In most cases, community rights over wildlife do not address the root causes of the problem related to tenure rights, which has implications for the sustainable management of protected areas.

## Human-wildlife conflict

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While pastoralism and farming remain the main sources of livelihood in African savannah and grassland, human population pressure in these areas has, with time, come to compete with wildlife populations for the same declining living spaces and resources, contributing to the modification of the quantity and quality of wildlife habitats. Fragmentation of wildlife ranges into smaller pocket areas usually is the reason behind the incidences of conflicts arising between humans and wildlife.

Large carnivores and herbivores cause inevitable livestock depredation and crop damage, which has resulted in rural farmers and pastoralists regarding wildlife in an increasingly negative light. Vigilante killings of endangered wildlife species are on the rise and are currently ranked among the main threats to conservation in Africa where there are increasing disparities between those benefiting from wildlife through tourism and those paying the cost of living with wildlife.



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Human deaths and injuries are less common than crop damage, but represent the most severe manifestations of human-wildlife conflict. Crocodile attacks are most common in the subregion. These reptiles are found in high numbers across a wide distribution range, and they can live in close proximity to people without being detected. Elephants and hippopotamuses rarely attack humans. In most cases fatal attacks occur when people try to protect their crops at night, or when people come into close contact with these animals on a path near water, or when they encounter injured animals with an impaired sense of caution.

A known and widely used method in mitigating this kind of negative wildlife conflict is through compensation in monetary or in-kind value. The amounts, currencies and rules of compensation have varied greatly between countries over the years, but a general rule has been the inability of practitioners to sustain compensation in the long term, especially when the number of claims increases exponentially in a given period. Studies have shown that compensation schemes are not capable of restoring loss of human life or installations destroyed by wildlife, nor do the schemes take into consideration the impact of such incidents on negative social implications resulting from the loss of livelihood.

## Impact of climate change on wildlife habitat

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There are two important factors that contribute to the modification of the quantity and quality of wildlife habitats. The first is the impact of human activities and the second the impact caused by seasonal modification, climate change and other unpredictable natural hazards. It is these extreme weather events that also hamper the ability to protect threatened and endangered species and habitats. Climate change affects savannah, grassland and steppes in a way that diminishes the productivity of vegetation and composition of grassland species. With the increased occurrence of drought there will be a shift to less productive and more drought-tolerant plant species, which will eventually alter the presence and behaviour of species that feed on these types of vegetation. The end result is the collapse of wildlife species – representing great losses to the ecosystem.



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## Illegal harvesting and trade in wildlife species

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In rural Africa, animals such as antelopes, gazelles and warthogs are seen purely in terms of their meat value. With the continued threat to the safety and food security of communities in terms of crop and property destruction by large mammals, local communities gradually develop a negative attitude towards wildlife. As illegal hunting increases, so does the demand for bushmeat and other wildlife products, resulting in a declining supply. By undermining conservation efforts, these hunters tend to harvest and trade wildlife species illegally as a means to secure livelihood, protein intake and to satisfy the demand for bushmeat. This practice can lead to serious negative economic and social impacts in the long run, affecting wildlife industries and resulting in the loss of potential meat supply through legal hunting.



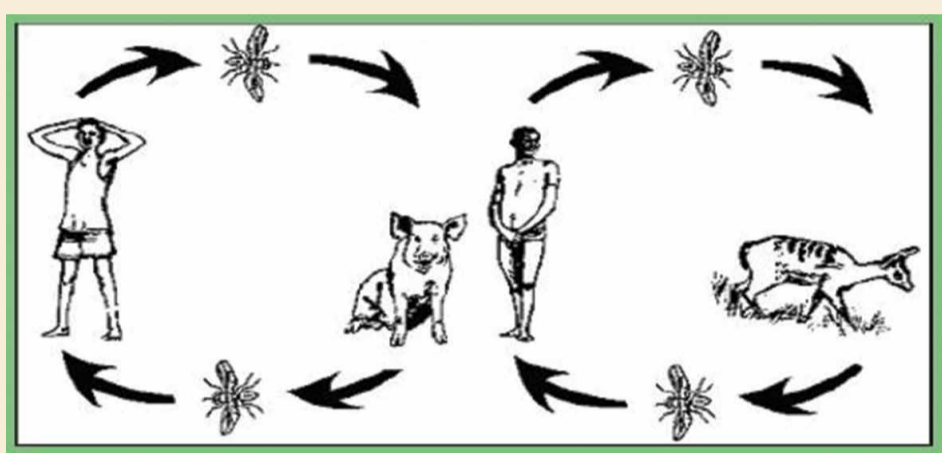
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## Transmission of diseases to livestock and/or humans

*“Serious diseases are also known to have been transmitted by wildlife to domestic livestock through pathogen dissemination from sharing the same grazing areas with wildebeests.”*

- FAO, Forestry Paper 157 -

Serious diseases are known to have been transmitted by wildlife to domestic livestock through pathogen dissemination from sharing the same grazing areas. This has especially proven fatal for cattle in the vicinity of buffalo and wildebeest and can hamper countries' beef production for export as it no longer meets international quality standards. One example of such diseases is the prevalence of the human African sleeping sickness, also known as Trypanosomiasis. It is a vector-borne parasitic disease caused by an infection with protozoan parasites belonging to the genus *Trypanosoma*. They are transmitted to humans by tsetse flies (*Glossina* genus) that have acquired their infection from humans or from animals harbouring the human pathogenic parasites. Studies have shown that wildlife areas are reservoirs of African trypanosomes pathogenic to humans and livestock.



(Source: <http://www.plosntds.org/article/info%3Adoi%2F10.1371%2Fjournal.pntd.0001828> )

## FAO's forestry and wildlife activities in the subregion

*“National land-use planning should be designed through a coordinated approach involving all government departments, especially those dedicated to wildlife and national parks.”*

- FAO, Forestry Paper 157 -

The mission of the FAO Subregional Office for Eastern Africa is to contribute to the economic, social and environmental well-being of Eastern African countries through support of participatory and sustainable forest management, taking account of emerging issues and cross-sectoral policies. Forestry activities that are currently being implemented in the subregion have the following objectives:

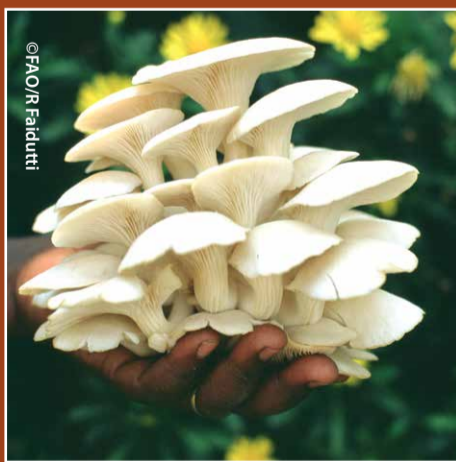
- To improve forest resources management and governance in the subregion through capacity building, and to achieve improved sustainable forest management;
- To increase the area under forests through the promotion of afforestation through agroforestry, farm forestry and activities focusing on reduced deforestation;
- To support subregional and national initiatives in forest health, namely fire and pest management;
- To assist in strengthening the capacity for resources monitoring and development of an effective information system in the subregion, in collaboration with existing regional and subregional organizations (economic bodies, research and academic institutions);
- To improve and strengthen the capacity of forestry education/training institutions and professional networks in the subregion for sustainable forest management;
- To raise the profile of the forestry sector by capturing the realistic value of forestry sector participation in the economy, its contribution to poverty reduction strategies, and enhancing the participation of decision-makers in international processes affecting the sector;
- To assist in value addition of non-timber forests products through the support of small-scale forest enterprises so that they contribute to wealth and job creation, and thus to poverty alleviation;
- To strengthen the technical capacity of key stakeholders and field managers in understanding approaches, as well as raising awareness of potential benefits in mitigating human-wildlife conflicts and VGGT<sup>1</sup> in the subregion;
- To support forestry and climate change programmes such as the Great Green Wall for the Sahara and Sahel Initiative, and the nationally led REDD+ readiness programme that enhances national mitigation actions.

<sup>1</sup> Voluntary Guidelines on the Responsible Governance of Tenure of Lands, Fisheries and Forests in the Context of National Food Security



## Forestry as reported in the country programming framework

Based on the country programming frameworks submitted by countries in the subregion, there is a clear indication that governments have recognized the marginal contribution the forestry sector has brought to national GDP. In conjunction with current environmental constraints posing challenges to food security and the improvement of crop productivity, forestry management has been recognized as an important contributor to meeting countries' need in adapting to or mitigating climate change, creating employment and sustaining livelihoods. The subregion has identified the need to establish protected areas, prevent erosion, intensify crop production, improve forest management practices, conserve and protect watershed areas, all of which involve forestry activities. As these country needs are aligned with FAO's new Strategic Objectives, innovative technologies for the management of natural resources will be proposed and introduced in the areas of agroforestry, conservation agriculture, community-based forestry and watershed management, and the integration of agro-silvo-pastoral systems.



Contact:  
**Mr Edward Kilawe**  
*Forestry Officer*  
Subregional Office for Eastern Africa (SFE)  
Food and Agriculture Organization of the United Nations  
Addis Ababa, Ethiopia  
Email: [SFE-FAO@fao.org](mailto:SFE-FAO@fao.org)  
Web site: <http://www.fao.org/africa/eastern-africa/en/>