

Fire Management Requirements in Ethiopia-The need for international support

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1. Background

Ethiopia has a total population of over 65 million with 3% annual growth rate and a density of more than 90 persons per km² (CSA, 2001). Agriculture is the dominant sector of the economy accounting for about 45% of GDP and 76% of export revenue. It is estimated to provide livelihood for 85% of the total population, and that there are about 9 million predominantly subsistent farm families who, on average, have a holding of 1.5 ha even less per family to cultivate. These farmers occupy about 90% of agricultural output, including most food crops (cereals, pulses and oilseeds), coffee, and virtually all livestock.

Over the last two decades, the Ethiopian economy has performed poorly, with agriculture showing declining rates of growth. Both agricultural and economic growth were constrained by the deteriorating natural resource base of the country, especially in the Ethiopian highlands that house 80% of the population. Agricultural productivity is severely threatened by land degradation involving both soil erosion and declining soil fertility in these highlands. This threat stems from the depletion and degradation of the vegetation cover of the country, especially forests, and exploitative farming practices.

The new economic policy of the Federal Government of Ethiopia (FGE) identifies, among other things, deforestation, land degradation and diminishing agricultural productivity as key problems.

Deforestation is estimated to take place at the rate of 163,000 ha/year from the high forests only. These closed forests are an important timber sources and are confined to inaccessible areas in the South and South Western part of the country. These forests are dominated by broad leaved rain forests with an estimated area of 2.3 million ha and 0.1 million ha of coniferous forests which dominate the highlands

The wood land/savanna type of vegetation which originally covered about 30% of the country in the semi-arid and sub-humid regions have now been reduced to 7.5% of the total area. This vegetation formation had a bio-mass stock of 30m³ per hectare which is now reduced to 10m³/per hectare as a result of the continuous cutting of trees for fuel wood, construction purposes and frequent forest fires.

2 Forest Fire Management Issues in Ethiopia

2.1 Socio-economic issues

The timing of forest fire and the extent of its effect depend on the type of economic activity of the area and the type of forest formation. Pastoralists usually set fire in their range lands in

order to avail fresh grazing and browsing material for their livestock. Fire is therefore used as a management tool in the low land areas where the woodlands and bush lands are used to it.

Every year, very large areas of low land forests and grass land formations are affected by fires, particularly in the drier parts of the country just before the short-rainy season starts.

In the east and north eastern part of the country, the natural vegetation ranges from desert, grass lands and woodland formations with grazing as the dominant form of land use. This vegetation is deliberately burnt in order to induce the sprouting of fresh grazing vegetation for cattle. 66% of the land area benefits from such a practice. Use of fire as an aid to hunting and to control tsetse fly and teak population are among the major causes of forest fire in the lowland areas. The timing is synchronized with the dry season before the March-April rain.

On the other hand, the highlands where rapid population growth cause land hunger, forest fire is used as the major tool to clear forest land and convert to agricultural land. Smoking out wild bees in order to gather honey is also another cause for forest fire. The traditional practices of using fire as a means to cultivating land for agriculture and the enormous demographic growth exacerbate the impact of forest fire. Unlike the woodland formation, the afro-montane forests are not adapted to fires and must be protected from any human made fire activities.

In general the causes of forest deterioration by fire are rooted in poverty which is being constantly fueled by high rates of population growth and economic depression, by low agricultural productivity and the insufficient attention of government policies to the longer term implication of a deteriorating natural resource base.

In addition, the use of many of the forest areas as a common property resource regardless of their suitability to sustain agriculture has contributed to the destruction of forest by fire.

2.1. Fire Management Organization

An adequate fire fighting organization and management system for fire suppression does not exist. There are no trained and equipped personnel for fire fighting and the prevention is mainly through the mobilization of the farming communities. The weak institutional set-up of the sector at all levels to monitor all forested areas and implement preventive measures has limited the prevention mechanisms to be traditional. There are forest protection committees established in each administrative zones but are not functional and effective since there is no budget allocated for fire prevention. The management of forest fires has been poorly organized and uncoordinated. There is no formal unit /institution which are responsible for forest fire management. It is one of the several responsibilities of the Forestry and Wildlife Technology and Regulatory Team within the ministry of agriculture at the federal level and bureau of agriculture at the regional levels. At the federal level, forest protection, including fire issues falls within the responsibilities of the Forest and Wildlife Conservation and Development Team of the ministry of agriculture. At the regional levels, the regional Bureau of agriculture Development is responsible for forest fire protection. However, there is no special force for fire management. It is only activated when there are emergency fire outbreaks. In such cases, both the urban and rural communities are mobilized. There are no especially trained personnel, equipment and financial resources. There is no trained crew or organization for fire fighting. People are mobilized without training in fire fighting and fire fighter safety.

2.2. Fire Reporting and Information System

There is no systematic and accurate reporting on forest fire. There is no reliable statistical data on occurrence of wildfires, areas burned and losses are not available. There is no accurate information on annual fire extent available. There is lack of systematic reporting on forest fire and no data permitting any analysis of causes, risks and the extent of damage for wildfire. There is no efficient communication system to transmit the information to the appropriate organ.

There is no formal fire detection and reporting system and fire is usually reported by telephone if it is at all available. There is no existing fire danger rating system and the application of early warning systems for forest fire management at local, regional and national levels are not in place. Site specific fire weather forecasts are not available either. There is no communication system to transmit the information to the responsible office.

2.3. Policy limitations

There is neither forest policy nor forest fire policy in place. There is no management plan for the remaining forest resources and no systematic fire management structure at any level except forest fire control committees which is not operational mainly due to lack of financial allocation.

There is also little economic incentive for efficient forest management and conservation, and farmers and communities have no interest or reason to conserve forests and protect their environment. People in rural areas and illegal immigrants in particular, consider forests to be free unoccupied areas and settle there to grow crops. Inappropriate institutional structures of forestry at all levels is also another constraint. In addition, the use of many of the forest areas as a common property resource regardless of their suitability to sustain agriculture has contributed to the destruction of forest by fire.

2.4. Technical limitations

Quantitative and qualitative information and data on forest fire for meaningful planning is lacking. There is no inbuilt early warning system established at national level to be used as a source of information and take precaution.

No available human resources capability both in terms of training and equipment
Low levels of awareness at all levels, which impacted the institutions to lack adequate resources and support.

Lack of fire information system such as the acquisition, management and dissemination of appropriate information to the users has also been the limitation.

The sector has no capacity to monitor fire hazards which could be helpful for preparedness.

There is also no capacity to report fire outbreaks instantly, including networking for the detection and reporting of fire location and characteristics.

III. Efforts Made

In order to alleviate the problems of wild fire management, the government through the Ministry of agriculture has introduced an extension package program in different agro-ecological zones which help to boost agricultural production. The program focuses on an integrated land management.

Action focus on increasing productivity on agricultural lands through increasing inputs to farmers and improving the performance of farming and raising productivity. This is due to the fact that the challenge is poverty.

The general public is initiated to view forest fires as a threat to the national economy, since no forest fire prevention campaign can be successful without the general support from the local communities.

From the wildfire incidence of year 2000, a national committee for fire fighting operation was established at the federal level and similar committee is also established at different levels in all zones where wildfire was reported to occur. The committees are responsible in organizing the concerned people and mobilize resources which are indispensable for fire fighting.

The development agents of the ministry of agriculture provide information to the farmers around their stations on the impacts of wildfire on the forest resources and its relation to the production system. They are informed and up-dated on the possible causes of fire and on precautions to be taken during the dry season.

The radio program which is disseminated two times a week provides educational messages and make the local farmers aware of the possible impact.

Implementing TCP in collaboration with FAO

Through implementing TCP, the following outputs were achieved:-

- Forest fire prevention and control systems in Ethiopia evaluated
- Training of 50 experts in the field of fire prevention
- Selected participants trained in designing forest fire management plan
- Training on forest fire policy and planning
- Preparation of a national forest fire management plan

IV. Required Support From The International Community

- Assist in the formation of networking mechanisms among African countries to share experience and collaborate at times of forest fire
- Assist in the development of agreements between African countries for mutual assistance in order to respond at times of emergency actions
- Assist in establishing satellite based fire monitoring system which is integrated through GIS

- Assistance to build information and data base on experiences, capacity, community based fire management practices and develop access to all interested African countries
- Assist in the organization of emergency response team at National level which is equipped both materially and financially
- Assist Ethiopia to become integrated in the African Forest Fire Data Base
- Facilitate the sharing of Experiences in forest fire danger rating
- Provide assistance in organizing forum to bring all stakeholders to exchange views and raise awareness on the impacts of frequent forest fire. The strategy for public awareness raising may include, the preparation and distribution of posters in different languages, the design and distribution of logos and car stickers and the production and distribution of school materials for training.

Reference

1. Anonymous (2001). Statistical Abstracts. Central Statistical Agency, Addis Ababa.
2. MoA (2000). Proceedings round table conference on integrated forest fire management in Ethiopia. MoA. Addis Ababa, Ethiopia. 2000.