

# FOREST RESOURCE MANAGEMENT

## What is this Action Sheet about?

Forests provide us with useful and important raw materials for our livelihoods and economic development. If we maintain these resources through responsible use households, communities and businesses can continue to use them in the future, helping to improve the local and national economy. However, very often, little attention is paid to the importance of sustainable forest resource management, resulting in overexploitation and wanton destruction of the resources upon which we all depend. This Action Sheet aims to share information about responsible forest management, describing the basics of forest management planning and suggesting ways in which forestry practices could be improved in order to achieve sustainable forest management.



*Illegal harvest (Image: ProForest)*

## What is a forest ecosystem?

Forest ecosystems comprise of the trees, smaller plants, animals and non-biological components such as soil, rainfall, temperature and humidity.

Forest ecosystems have the following vital functions:

- Productive functions:
  - Forests provide timber, wildlife, medicine, fuelwood, wild fruit, and spices
- Protective functions:
  - By soaking up rainfall and stopping it from hitting bare soil, forests stop floods, forests protect against soil erosion and silting up of watercourses
  - Forests also often protect areas of cultural importance (e.g. sacred groves)
- Ecological functions:
  - Tropical forests hold the greatest diversity of plants and animals in the world;
  - Forests affect local climate, keeping rainfall and temperatures stable. Forests absorb more heat from the sun than do bare soil or grasses. This heat is re-radiated, warming up the air above the forest, which causes it to rise. The water held in the air condenses into clouds and then falls as rain. Forests also feed water to the air through evapotranspiration (the process by which plants release water through their leaves), adding to local rainfall. The declining rainfall in inland West African countries is thought to be due to the clearing of coastal rainforests;
  - Forests play a vital role in global climate regulation by absorbing carbon dioxide, one of the gases responsible for global warming. Plants naturally absorb carbon dioxide and give off oxygen gas during photosynthesis. Tropical rain forests absorb more carbon dioxide than any other terrestrial ecosystem on earth.
- Socio-economic functions:
  - Forests provide food for rural people;
  - Forests provide fertile soils for farmer's use and suitable conditions for production of cash crops (e.g. Cocoa and Oil palm)
  - Forests provide raw materials for the timber and building industry

## KNOW YOUR FOREST

- Choose a forest reserve in your area
- Describe its location
- Make a list of its:
  - Protective functions
  - Productive functions
  - Ecological functions
  - Socio-economic functions
- Explain why your forest reserve is important

### What is forest resource management?

Forest resource management is the process of ensuring that a forest ecosystem and its values are maintained and improved to provide continuous benefit for society and the climate. It involves planning, taking decisions and implementing these decisions in order to ensure that the vital components of the forest and the roles they play are not lost over time.

### Why is forest resource management important?

Managing forests properly will ensure that their functions and the resources they provide will be maintained and improved to meet present and future needs. If this can be achieved, it may be called sustainable forest management (or SFM).

### What is SFM?

SFM has been described as forestry's contribution to sustainable development. Sustainable development is development that is economically viable, environmentally benign and socially beneficial, and which balances present and future needs. Achieving sustainable forest management is a long-term activity involving careful planning. It also involves time and resources input, which can be very costly initially. However, a number of studies have shown that the benefits of sustainable forest management far outweigh the cost in the medium to long-term.

It is important to note that some people feel that the phrase 'sustainable forest management' should not be used to describe current management systems, as we don't yet know whether they will turn out to be sustainable. Interactions between the flora (plants) and fauna (animals) in a forest ecosystem are complex and often poorly understood. The consequences of actions taken today may only show up in 50 to 100 year's time. Other phrases such as 'good forest stewardship' or 'well managed forests' are often preferred.

## Who should be involved in forest resource management?

Forest management needs to involve all the individuals and organisations that have direct and indirect interest in the future of the forest. These individuals and organisations are normally referred to as stakeholders. A typical forest estate has five main stakeholder groups:

- **Forest managers:** Their interest is to maintain the quality and quantity of forest resources and the ecosystem in general. In most African countries, forest managers work for government agencies. They are paid to represent the state, who have a major interest in the future of the forest, its contribution to the national economy and environment. Forest managers are in charge of allocating areas for forest harvesting and are responsible for planning and undertaking forestry activities.
- **Landowners:** In Africa landowners range from rural chiefdoms to individuals and governments. All those who own forest lands have both economic and cultural interest in the forest. In other words, landowners usually want to benefit economically from the use of the forest, especially from royalties paid for timber harvesting. At the same time, they may have an interest in safeguarding their own use of forest resources (e.g. collecting spices, snails, medicines etc) as well as a cultural interest (e.g. sacred groves). In forest management it is important to identify and define landowners explicitly to avoid later conflicts.
- **Timber Industry:** The timber industry have a largely economic interest in the forest. They harvest timber and engage in commercial activities based on sale of wood products. The timber industry is often perceived to be one of the most powerful stakeholders because they are able to influence decisions over timber harvesting and the use of forest estates.
- **Forest communities:** People living in and around forests are immediately affected by activities in the forest. In most cases they are the first to suffer from the impact of poor forest management and over-harvesting. Because they meet their daily needs with fuel, food, construction materials and medicine from their forest, their livelihoods are inextricably linked with its continued existence and status.
- **Civil society:** Civil society is made up of individuals, groups, and organisations who are only indirectly affected by the forest in question, but who nevertheless have emotional, recreational or altruistic interest in forest conservation. They include environmental NGOs such as Greenpeace, Friends of the Earth, and WWF International. In some African countries, there are national NGOs who promote civil society interest in forest management. The interest of civil society is to protect the environment and local communities from being affected by irresponsible forest management and use.

## What does SFM involve?

For a forest to be managed sustainably, all users and uses of the forest must:

- Comply with the law: Land tenure and use rights, and the right of local communities to non-timber forest products are protected by national and international forestry laws
- Harvest forest products at a rate which does not exceed the forest's capacity to regenerate itself: this will involve management planning and monitoring, protecting the forest from illegal activities
- Protect the environment: this means that the timber industry and other stakeholders should minimise harvesting impacts (e.g. avoid destruction of water courses, soil compaction by vehicles etc.), limit the use of chemicals, manage waste and recycling, and protect wildlife from illegal hunting
- Ensure the well-being of local people: this means that forest stakeholders who are in a position to provide employment to local people and contribute to local development do so, whilst recognising their rights and culture



*A logging trail (Image: ProForest)*

## What information is needed in order to achieve SFM?

Using their technical training, and in consultation with relevant research institutions and stakeholders with local knowledge, forest managers need to develop the following:

- A complete list of the goods and services provided by the forest to people
- A complete list of stakeholders and their interests in the forest
- An understanding of the environmental, social and economic impacts of any activity taking place in the forest and ways in which these impacts can be addressed
- An understanding of the types of flora and fauna the forest contains; their diversity, distribution and the complex relationships existing between them
- For species that are harvested, the forest manager needs to know how much growth occurs each year. This information can be used to make sure that harvesting takes place at sustainable levels – that is, at a level that can be replaced by natural growth. Information on growth and yield levels for many useful forest flora and fauna has often been collected by research institutions, and is available to forest managers.

## How is this information used to develop an SFM action plan?

Through consultation with forest stakeholders, a list of objectives for a particular forest management unit is developed. Forest managers can then use the information they have collected to assess how these objectives can be achieved. The objectives and management activities are then written down in a forest management plan laying out exactly what is to be done, where, when, why and by whom. A management plan must clearly specify realistic, measurable, time-bound and achievable objectives, so that progress towards the objectives can be monitored.

Depending on the size of the operation, management planning is often undertaken at three timescales:

- A strategic plan: the forest management plan for entire forest operation, over a period of 25 years or more
- A tactical plan: Sets out planned management activities, normally over a five-year period, in more detail
- An operational plan, updated each year: details the precise activities to be carried out over the next year, include a list of month by month activities and should provide the direct control over operations

### **Box 2: Basic elements of a forest management plan**

- A good description of the forest, location, condition, including list of trees and animals, their numbers and distribution and whether they are threatened or endangered
- Timber tree management and harvest plan for sustained yield
- Business profitability plan including an accurate prediction of income including any environmental and social cost
- Operational plan describing best practice to ensure all operations in the forest have as little negative environmental or social impact as possible
- A monitoring plan to ensure that objectives are being achieved
- A training plan based on an assessment of skills required for each activity
- A forest protection plan including an assessment of current and potential threats (such as forest fires) and measures that can be taken to reduce these threats
- Detailed guidelines on the use of chemicals and biological pest control to minimise the use of toxic chemicals and where possible replace them with alternatives



*Monitoring forest resources (Image: ProForest)*

### **How is the success of the management plan assessed?**

The only way to be sure that the management plan is being properly and effectively implemented is to monitor its implementation. Monitoring needs proper planning too. The monitoring plan needs to include what needs monitoring, how and when it must be done, who will be responsible, and how the information will be analysed to help further planning and implementation decisions. Monitoring procedures must be consistent and repeatable over time so that results can easily be compared.

## **How are the costs of forest management covered?**

In a commercially exploited forest, the long-term benefits of improved management may enable timber companies to invest in sustainable management systems. National governments may have received support for forestry management programmes from development agencies like the World Bank or national European governments. International conservation organisations are now becoming more and more interested in market-based approaches to conservation where people receive financial rewards for stewardship of natural resources. When the goal is preservation of a forest for watershed protection, carbon storage or biodiversity conservation, such approaches are known as “payment for ecosystem services” (PES). In PES, funding can come from public (government) or private (business) sources. For example, in the Rift-Valley Province of Kenya, the Shompole Community Trust has received funding from the Ford Foundation, European Union Biodiversity Conservation Program and Timber Trade Federation to establish a 10,000 ha biodiversity conservation area. Through the Trust, the local community is paid to provide ecotourism services to the clients of organizations like the Kenya Wildlife Service, African Conservation Center and Art of Ventures.

## **How can we make sure that forests are well managed in our country?**

What you can do depends on what type of forest stakeholder you are, but there are many activities that you can get involved in to promote responsible forest management in your country or locality. If you live near a forest, you could get involved in community forest management. The governments of many African countries have developed ways to work with people living near forests, and they may be able to support the process of developing a community forest management plan through a series of community meetings, the setting up of a management committee, and the signing of official papers to show that the forest is under community management.

As described above, the first step in community forest management is to gather the people who use the forest together, discuss how the forest is currently being used, and talk about what they all want from the forest in future. Make a list of further information that needs to be collected in order to know more about the state of the forest, who uses it and what they need it for. The people at the meeting elect a management committee whose first job is to find ways to collect the necessary information. This can be presented in a report and on a map of the forest showing the different activities that people do in different places. A government forestry officer or an experienced NGO will be able to advise the management committee.

At the next meeting, the topic is ways to protect the forest from degradation. One way is to establish protected forest areas and buffer zones. Everyone agrees to stop using the forest in the protected area, or use it only at certain times of year and for certain activities. A government forestry officer or an experienced NGO may be able to advise how big the protected area needs to be, or how several protected areas can be linked together. In the forest surrounding the protected area, people can continue to use the forest to help earn their living, but their activities should be monitored so that they can be managed with rules made to safeguard the forest for the future. All decisions on resource use are recorded in the community forest management plan, like the one described above.

Growing more trees on farmland can also reduce pressure on wild resources (See Action Sheet 35: Agroforestry and 49: Tree Planting).

If you live in the city, the forest may be far from you but bad practices in the forest may have an indirect effect on you, your family and relatives. Even the next generation of children may well be adversely affected by bad forest and environmental practices. This is why you may want to get involved in promoting responsible forest management. And there are varieties of ways of doing this:

- Signing up to join as an active member of an NGO campaign group
- Educating people about the importance of forests by working with schools and environmental education centres
- Getting involved in tree-planting schemes (See Action Sheet 49)
- Making sure the wood products your family or your workplace purchase are from well-managed forests (See Action Sheet 48: Forest Product Certification)
- Participating in environmental awareness campaigns
- Calling into radio and TV shows to air your views

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## FOR MORE INFORMATION

### CONTACTS/WEBSITES

Center for International Forestry Research (CIFOR)	<a href="http://www.cifor.cgiar.org">www.cifor.cgiar.org</a>
Collaborative Partnership on Forests (CPF)	<a href="http://www.fao.org/forestry/site/2082/en">www.fao.org/forestry/site/2082/en</a>
Commonwealth Forestry Association (CFA)	<a href="http://www.cfa-international.org">www.cfa-international.org</a>
European Tropical Forest Research Network (EFTRN)	<a href="http://www.etfrn.org">www.etfrn.org</a>
Forest Certification Watch	<a href="http://www.certificationwatch.org">www.certificationwatch.org</a>
Forest Stewardship Council	<a href="http://www.fsc.org">www.fsc.org</a>
Forest Trends	<a href="http://www.forest-trends.org">www.forest-trends.org</a>
Global Witness	<a href="http://www.globalwitness.org/indexhome.html">www.globalwitness.org/indexhome.html</a>
Katoomba Group	<a href="http://www.katoombagroup.org">www.katoombagroup.org</a>
International Tropical Timber Organisation (ITTO)	<a href="http://www.itto.or.jp">www.itto.or.jp</a>
Natural Resource Institute	<a href="http://www.nri.org">www.nri.org</a>
ProForest Ltd	<a href="http://www.proforest.net">www.proforest.net</a>
Programmes for Endorsement of Forest Certification Schemes (PEFC)	<a href="http://www.pefc.org">www.pefc.org</a>
Tropenbos International (TBI)	<a href="http://www.tropenbos.nl">www.tropenbos.nl</a>
World Rainforest Movement	<a href="http://www.wrm.org.uy">www.wrm.org.uy</a>
World Resources Institute	<a href="http://www.wri.org">www.wri.org</a>
World Wide Fund for nature (WWF)	<a href="http://www.panda.org">www.panda.org</a>

## DOCUMENTS

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- R. Nussbaum and M. Simula, *The Forest Certification Handbook (2<sup>nd</sup> ed)*. Earthscan, London, 2005. Available to order from [www.proforest.net](http://www.proforest.net)