Participation in Sustainable Forest Management: Linking Forests and People in Kenya

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Abbreviations and Acronyms

ASAL  Arid and Semi-Arid Lands
CFA   Community Forest Association
FAO   Food and Agricultural Organization (of the UN)
GDP   Gross Domestic Product
ICR   Implementation Completion Report (World Bank)
IIED  International Institute on Environment and Development
IRW   Industrial Round Wood
KFS   Kenya Forest Service
K Sh  Kenyan Shillings
km    kilometer
KWS   Kenya Wildlife Service
MAI   Mean Annual Increment
mm    millimeter
m³    Cubic meter
NACOFA National Alliance of Community Forestry Associations
NRC   Non-Resident Cultivation
NRM   Natural Resource Management
NWFP  Non-Wood Forest Products
PFM   Participatory Forest Management
PPM   Pan African Paper Mills
PROFOR Program on Forests (World Bank)
SEA   Strategic Environmental Assessment
US$   United States Dollars

Exchange rate: US$1.0 = K Sh 70
All monetary units are US dollars unless otherwise specified.
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Preface

The purpose of this Forest Policy Note on “Participation in Sustainable Forest Management” is to provide just-in-time advice to the Ministry of Environment and Natural Resources (MENR) as well as to the newly created Kenya Forest Service (KFS) to further advance the ongoing forest sector reform in Kenya.

The Forest Policy Note will contribute to the commencement of the forest component in the forthcoming Natural Resource Management (NRM) Project (2007–2012). The NRM project is funded by a World Bank Specific Investment Loan.

The Forest Policy Note provides guidance on the way forward using the options provided for “Participation in Sustainable Forest Management” in the subsidiary forest regulation currently being prepared as part of the implementation of the Forests Act (2005).

The NRM project provides support to the forest sector reform emerging from the Forests Act and the establishment of the KFS in February 2007. The forest sector reform emphasizes participation by the private sector and communities in sustainable forest management with the KFS.

The Forest Policy Note is based on analytical work in the forest sector initiated by the World Bank in 2004 and confirmed with a concept note review in October 2006. The aim of the forest sector analytical work was to seek options to again engage the World Bank in the forest sector in Kenya. The focus was on the forest industry, partnerships, and commercial forest production.

In collaboration with the Program on Forests (PROFOR) and the World Bank–World Wildlife Fund Forest Alliance, studies have been carried out as part of the Economic and Sector Work on socioeconomic issues in relation to the forest sector reform. The International Institute on Environment and Development (IIED) prepared reports on developing partnerships for sustainable forest management (Mayers 2005 and Vermeulen; Walubengo 2006) focusing on the forest industry and the suppliers of industrial round wood and fuelwood.

A Strategic Environmental Assessment of the Forests Act was prepared as a stand-alone project (February 2007), also contributing to the development of the NRM project.

The Forest Policy Note has a different emphasis from the initial analytical sector work. The perspective of the NRM project is toward the MENR and the KFS. The aim is to harness the options provided by the Forests Act for participation in sustainable forest management by forest industry, other members of the private sector, communities, and farmers.

Follow-up on the recommendations and any other activity related to implementation of the Forest Policy Note in relation to the NRM project is subject to the final decision, approval, and action by the KFS.
Executive Summary

1. **This Forest Policy Note was prepared to provide input to the ongoing forest sector reform in Kenya on participation in sustainable forest management.** It offers recommendations on possible priority forest policy actions within the forthcoming Natural Resource Management (NRM) Project. The latter focuses enhancing the capacity of Kenyans to manage the natural resource base and resources available to poor and vulnerable communities. By outlining priority actions, such as improving the forest information base and establishing accountability mechanisms, while at the same time seizing the opportunities for engagement of local communities and private investors, the Policy Note outlines a set of actions critical for increased participation in sustainable forest management. In this respect the Policy Note supports the World Bank’s Country Assistance Strategy (CAS) and the more recent CAS Progress Report. The latter emphasizes the Bank’s strategy on growth and poverty reduction, but gives enhanced attention to equity and governance. The Forest Policy Note complements previous World Bank–supported analytical work in the forest sector since 2004, including a Strategic Environmental Assessment of the 2005 Forests Act. Taking into account the importance of forests and woodlands in rural areas and the opportunities offered in the 2005 Forest Act for increased stakeholder participation the Policy Note as well as the forthcoming NRM Project are closely aligned the Bank Group’s strategic emphasis on growth and poverty reduction with enhanced attention to equity and governance. **focusing on**

**Kenya forest sector reform**

2. **The conditions for growing trees for industrial round wood, fiber, and energy in forest plantations are excellent in Kenya.** Kenya also has irreplaceable environmental value in its indigenous forests, mainly around the five water towers (Mt. Kenya, Aberdare Range, Mau Range, Cherangani Hills, and Mt. Elgon) delivering environmental services, in particular water resources. The Arid and Semi-Arid Lands (ASAL), covering about 80 percent of Kenya’s total area, has woodlands and bush providing livelihood opportunities for the rural population. In the ASAL, wood and other non-timber forest products and services from woodlands sustain livelihoods for the 20 percent of the population living there.

3. **The official figure for the area with closed forest cover in Kenya is 1.7 percent of the land area.** Indigenous forests cover about 1 million hectares (ha) and the plantation forest area approximately 100,000 ha. The contribution of the forest sector to Kenya’s GDP, according to economic surveys, was about 1.1 percent, or US$175 million, in 2005. There is potential to enhance the value of the direct and derived production of goods and services from the forest sector.

4. **The Forests Act (2005) expands coverage to include forests and woodlands on trust land and in private ownership.** According to the Forests Act, all forests in Kenya are required to have a management plan. The KFS is responsible to ensure that management plans are prepared for state forests but the actual preparation of a management plan can be outsourced.

5. **The establishment of the semi-autonomous KFS in February 2007 provides new opportunities for partnerships in the forest sector.** The KFS can enter into forest management agreements with Community Forest Associations (CFAs) and representatives of the private sector on state forest land. KFS also has a role to support development of the forestry industry and develop new market opportunities for environmental services. The KFS will collect revenue from the forest sector and cover part of its current expenses and development budget.
6. The Forests Act opens up possibilities for participation by communities and the private sector in the management of state forests. The objective is to improve the efficiency of sustainable forest management and protection of forests. Management agreements are the basis for forest-management and forest-industry partnerships between producers of wood and industrial and other private sector users of wood and fiber. Partnerships can be between producer associations (for example, communities, farm forest producers, or charcoal makers) and industry and trading partners. The aims are to make market information available; plan and secure stability in supply and demand; and augment the opportunity for investment in the forest sector by individual farmers, community organizations, the private sector, and the KFS.

Developments in the forest sector

7. The forest sector in Kenya in the past few decades has been subjected to structural change in the forest industry, excessive resource exploitation, and land use conversion. A logging ban was initiated in 1999 as a result of uncontrolled exploitation of state forest plantations and pressure on indigenous forests. A few larger forest industry companies (Pan African Paper Mills (PPM) and Rai Plywood) were allocated timber licenses for raw materials in the state plantations. PPM is depending on an annual intake of a minimum of 0.5 million m³ of pulpwood from within a range of 100 km of its mill. The location of the pulp mill in western Kenya makes imported pulpwood a less attractive option. A large part of the sawmill industry collapsed and thousands lost employment. The sawmill industry is currently operating at modest capacity with inputs mainly from farm forests. Sawmilling capacity was in excess of the allowable cut before the logging ban and a reduction was required.

8. Farm forest producers experienced improved domestic market opportunities and prices as a result of the state forest logging ban. The logging ban has had a positive impact on incentives for investments in farm forestry and revealed the potential of farm forestry to supply timber, poles, and energy. However, in some areas the use of trees from farms has become unsustainable and now even the smaller sizes are harvested. In other locations, the forest industry has less capacity to absorb the potential farm forestry supply.

9. The demand from industry for wood for fiber and energy is intense in some locations. Demand for wood energy is growing from the tea sector, where the energy source for boilers has shifted from fossil energy to biomass, reducing energy costs by more than 50 percent. The tea sector is mostly located at the lower base of the water towers, often adjacent to the indigenous forests.

10. At the household level, the consumption of charcoal in Kenya is substantial, although production and trade is currently not legal. The estimated value of charcoal production and trade is K Sh 32 billion (US$450 million) with most of the value generated in trade. The value is comparable to that of the tea industry and reveals the economic potential of legalizing charcoal production and trade if based on a sustainable supply of raw material. In the ASAL, the production of charcoal is an important contribution to income, especially as an option in case of drought and crop failure. Charcoal production also adds value to cattle grazing by controlling growth of the bush and improving grazing potential.

World Bank analytical work and Natural Resource Management Project

11. The World Bank in 2004 initiated analytical work in the forest sector, including the present Forest Policy Note (as a formal element of the Economic and Sector Work). In addition to organizing a forest investment forum, analytical work included studies on production of industrial round wood and financial analysis of plantation management and partnerships between
the private sector and producers of timber and fuelwood. An emphasis of the analytical work has been on opportunities in the forest industry sector, and in particular, on partnerships involving the private sector and wood producers.

12. **A Policy Note for the World Bank is just-in-time advice to a client on a range of development topics.** This Forest Policy Note provides guidance on (a) a process for moving forward with the options provided for participation in sustainable forest management in the subsidiary forest regulations being prepared as part of implementation of the Forests Act; (b) the transformation of the Forest Department into the KFS; and (c) the inception of the World Bank Natural Resource Management (NRM) Project (2007 to 2012). The NRM project includes a forest component with a World Bank credit of approximately US$21.5 million for a six-year period. While the perspective of the previous analytical work was on partnerships with an emphasis on forest industry, the Forest Policy Note emphasizes participation in sustainable management of state forests. A reason for the adjusted focus is that the MENR and the KFS are the clients of the forest component of the NRM project.

**Participation in sustainable forest management**

13. **A draft version of subsidiary regulation for the Forests Act on “Forest Rules: Participation in sustainable forest management” has been prepared (January 26, 2007).** The subsidiary regulation lays out the possible management agreements that can be developed for participation by the private sector and Community Forest Associations (CFAs).

14. **In developing participation in forest management, the different types of forests, their inventory, and capacities of partners are considered.** Management purposes—protection and use—depend on the forest type and location. Plantations are the main producers of commercial tree crops and also serve some environmental purposes. Commercial development of forest plantations will be the backbone of future forest sector development for economic purposes. Indigenous forests located in the five water towers mainly protect water resources. Indigenous forests are valued primarily for external reasons and the consumptive use of timber may be limited or prohibited. Regulated use of non-timber forest products for marketing or household consumption is feasible. Farm forestry is established mainly for commercial purpose as another farm crop and part of integrated farm management. Farm forestry can supply logs, poles, fuel, and fiber. Establishing tree crops on farms may alleviate pressure on natural forests in communities adjacent to indigenous forests. Finally, woodlands in the ASAL are used for some wood products, mainly for energy (charcoal) and for minor forest products.

15. **The capacities and roles of actors determine the strengths and outcomes of participation in forest management.** Essential conditions must be met for participation in forest management to deliver results. The capacity for management and supervision of partners that are participating in forest management must be developed. The KFS has the mandate to regulate the use of and to protect forests, and is responsible for management of gazetted forests. The roles and responsibilities of the KFS are being developed, as are the procedures for sharing these responsibilities. Communities living adjacent to forests and using forest resources are potential partners in the management and protection of forests. The private sector is a key partner for the economic development of forest resources. The involvement of the private sector requires access to credit, and to land or forest resources. The World Bank Forest Strategy (World Bank 2004) notes that forests have significant commercial value and the private sector will often be a principal financial actor in forest management and wood production. Incentives are determined by the cost-and benefit-sharing mechanisms included in management agreements. The conditions in the management agreements will determine the willingness of potential partners to participate and invest. Transparent procedures are required for the allocation of management rights and transparent
rules are required for entering into and revoking management agreements. Standards for concession
management by the forest industry and joint forest management with CFAs are the basis for
allocation and supervision of management agreements. Further detail and specifications are to be
included in the management plans for each location. Inventories of available resources and
assessments of allowable removals determine the revenue that can be generated.

Recommended priority actions in the NRM project on participation in forest
management

16. Several forest policy issues can be addressed in Kenya but they must be
prioritized for efficient use of available resources and for effective action. The same applies to
the NRM project, that is, low priority does not imply exclusion but merely postponement of action.
Building on past experience and the opportunities provided under the new Forests Act and forest
sector reform, the recommendation is to develop and implement feasible models and procedures for
participation in forest management taking into account the objectives of the forest policy and the
capacity of the involved partners. Examples for the inception phase could include the following
priority actions.

17. The NRM project supports the forest sector reform through the following
activities:

NRM project: Subcomponent 2.1

- Inventory of commercial and vulnerable forest resources and inventory of economic resources
  and zoning for priority uses, including watersheds. Information is critical for decision making
  on the suitability of forest areas for various management agreements. Initial focus could be on
  potentially vulnerable sites (indigenous forests) and economic resources (plantations).
- Improved KFS revenue assessment and collection. An assessment of the feasibility of revenue
  collection from forest management agreements and closing the funding gap of KFS is required.
  Appropriate cost- and benefit-sharing mechanisms need to be developed for participation in
  concessions, for timber licenses, and for joint forest management.

NRM project: Subcomponent 2.2

- Piloting models for joint industry and CFA concessions. The purpose of the pilots is to develop
  joint management models with the forest industry and communities in relevant plantation sites.
  Communities are engaged in non-resident cultivation, production of seedlings, planting, and
  other forest employment, and protection (from fire and theft).
- Development of standards for joint forest management. Approaches and benefit- and cost-
  sharing mechanisms for CFAs need to be developed, mainly in the target areas of the NRM
  project.
- Farm forestry. A rapid inventory of farm forestry resources, production and investment
  constraints, and potential production is needed. Information must be developed and shared for
  the planning of forest sector supply and demand.

NRM project: Subcomponent 2.3

- Industry forum. Resources must be allocated for policy-relevant mini-surveys and other fact-
  finding assessments in collaboration with forest industry associations, for example, a survey on
  available and potential sawmilling capacity, efficiency, investment requirements, and location
  of industry development compared with future availability of wood resources.
- Facilitate information on financing opportunities. Develop an investment opportunity portfolio
  for forest sector business opportunities. Initiate follow-up of pilot assessments on payments for
environmental services. Identify potential concession areas, and prepare and notify concession tenders.

Follow-up on the recommendations of the Forest Policy Note and any other activity related to the note and the implementation of the NRM project is subject to final decision, approval, and action by MENR and KFS.
1. Forest Sector Reform in Kenya and Participation in Sustainable Forest Management

The ongoing forest sector reform and the milestones achieved so far are important factors that provide promise for change in the forest sector. Government, civil society, and industry all have been stakeholders in a long process. The reform process is moving toward implementation of the new Forests Act and the establishment of the Kenya Forest Service. Participation by stakeholders in the use of, management of, and investment in forest resources, production, and service delivery provides an opportunity for sustainable forest management and use.

Forest sector reform at a glance

1.1 The ongoing reform of the forest sector is a response to the current and past situation and addresses policy, regulatory, and institutional changes. Institutional development of the forest sector in Kenya gained momentum with passage of the Forests Act (2005), which was gazetted in February 2007, and the establishment of the Kenya Forest Service (KFS) as mandated by the act.

1.2 Development of the Forests Act followed a decade of economic and environmental crisis in the forest sector. The forest sector reform, with influence from civil society, promotes new ways of addressing management of forest resources in Kenya.

1.3 The Forests Act enables decentralized control of forests through management agreements, that is, partnerships between the KFS, the private sector, and Community Forest Associations (CFAs). The aim is to involve stakeholders in the decision making, management, and protection of the forest resources in Kenya, as well as in sharing the benefits and costs.

1.4 The key elements of the forest sector reform and new Forests Act are

- opportunities to involve the private sector and communities in forest management through management agreements;
- expansion of the mandate to cover not only gazetted forests but also any forest, woodlands, or trees outside gazetted forest land (the Forests Act, however, does not include a definition of forests); and
- establishment in February 2007 of the KFS, an independent government agency replacing the Forest Department.¹

1.5 Subsidiary legislation is being prepared and currently includes the following:

- Rules for “Participation in sustainable forest management” (draft, January 26, 2007)
- Rules for “Charcoal production, transportation and marketing” (draft, February 19, 2007).

1.6 The draft forest policy (MENR 2006) provides guidance for implementation of the Forests Act. The broad objective of the draft forest policy is to “increase the forest and tree cover in the country to ensure an increasing supply of forest products and services meeting the needs of present and future generations.”

¹ Appointments to the Board of the KFS were effective February 2, 2007 (Gazette notice 1189, The Kenya Gazette, February 16, 2007). The inauguration of the KFS Board was March 14. The KFS Board will select the Director for KFS, be responsible for the execution of the KFS mandate, and endorse subsidiary legislation.
The Kenya forest sector at a crossroads

1.7 **Forest sector reform in Kenya is at a turning point after a decade of problems.** Forest resources have been used unsustainably, illegally, and randomly without management planning or accountability. Below-cost stumpage sales of plantation forests subsidized the wood supply of a few major stakeholders in the forest industry. An over-mature forest plantation stock has emerged but is of poor quality because of neglectful forest management. Illegal logging and lack of management have resulted in forgone revenue from forest plantations. A backlog of reforestation has resulted in areas of state forest land being without tree cover. The brief reintroduction of the non-resident cultivation (NRC) system has helped reduce the reforestation backlog. Large plantation and indigenous forest areas were excised for invalid reasons, for example, as political handouts leading up to national elections. Developments in the forest sector were driven by political agendas. Loss of local indigenous forests resulted from a decline in other wood resources, low forest-sector employment, and population growth. The effects have included changes in land use from conversion of forest land and lower availability of forest and water resources. The sawmilling sector and domestic production of sawn wood collapsed, leaving thousands of people without employment. Pressure has been put on vulnerable indigenous forests conserving biological diversity and water resources. Destruction of forest cover in the five water towers is ongoing and well-documented (DRSRS and KFWG 2006). Political involvement and patronage of certain stakeholders has resulted in inefficient allocation of rights to forest resources, corruption in the forest sector, and excision of gazetted forests. A logging ban may have reduced the off-take but did not diminish a growing demand for forest resources. The ban has distorted the pricing and supply of industrial round wood (IRW). Poor governance in the forest sector and the faltering reputations of forest officials and industry has caused problems, such as making bank credit to forest industries difficult to obtain. Problems with forest governance resulting from political pressure and weak control have resulted in mismanagement of the assets of the forest sector.

1.8 **The Forests Act provides new opportunities.** The forest reform opens up possibilities for communities and industry to participate in forest management, thus reducing the direct involvement of the KFS. But the Forests Act also extends the mandate of the KFS to include all forest resources. The forest sector reform provides the legal and institutional means for change, offering the KFS a chance to change the image of the forest sector. The KFS is committed to delivering change in the management of forest resources in collaboration with forest sector stakeholders. The new Forests Act and ongoing forest sector reform provide a window of opportunity for improvements in policy and regulation.

1.9 **The Kenya Forestry Master Plan (KFMP), developed in 1991 and approved in 1994, contained sufficient analysis to identify the key problems and provide policy recommendations.** More than a decade later, the future of the Kenyan forest sector now depends on how the new Forests Act, its subsidiary legislation, and institutional reform are implemented. The KFMP was never implemented and several issues it identified continue today. However, the KFMP is recognized by the KFS as the forest sector plan for Kenya and the objective is to update the KFMP for that purpose.

1.10 **Experiences with the implementation of the logging ban are mixed.** A key policy intervention resulting from the problems in the forest sector was the logging ban, which resulted in closures in the sawmilling industry and loss of employment. The ban reduced excess capacity in the sawmilling sector but also closed most of what could have been sustainable capacity. The logging ban did not reduce the demand for forest resources but shifted that demand onto other sources, including farm forests. The logging ban weakened forest management forest, such as through pruning and protection, because there was no income to be had from it. See box 1.1.
Box 1.1 The logging ban in the state forests

A key influence on timber supply, management of state forest plantations, and the structure of the forest industry in Kenya has been the Presidential logging ban in state forest plantations introduced in 2000 as a result of lack of control and irregularities in the state forest sector.

In November 1999, the government declared a 90-day suspension on timber harvesting in all state forest plantations (Legal Notice No. 171 of November 17, 1999). The purpose was to address concerns that harvesting and management was unsustainable. Furthermore, government revenue was being lost. Immediately following the end of the suspension, an indefinite Presidential ban on timber harvesting was imposed in March 2000 (Legal Notice No. 18 of February 4, 2000).

An exception was made for the supply to a few larger companies—Pan African Paper Mills and Rai Plywood (including Comply and Tim Sales). During the logging ban these companies had permission to harvest wood because of the alleged importance for the national economy of the forest industry. The supply of IRW to these companies has been subsidized, that is, sold below the stumpage price that could have been obtained in a competitive market. This is regarded by other stakeholders in the industry as being an unfair allocation of resources and a subsidy of part of the forest industry.

An assessment in 1999 found backlogs in plantation establishment and management. Although the logging ban helped to stop unsustainable exploitation of the forest plantation, it has not offered a long-term solution. An assessment in 2004 found that state plantation forests included about 27,000 ha of over-mature and 11,500 ha of mature stands out of an estimate total area of 120,000 ha. The backlog of forest management is attributed to shortages of funding and labor but also to the ban. The ban has indirectly resulted in depreciation of the commercial timber value of the plantations because of lack of stand management.

As a result of the logging ban most sawmills and related enterprises were closed and 30,000 to 150,000 people lost employment. Most sawmills closed and others reduced capacity to lower operating costs. The average number of staff on small sawmills dropped from 50 in 1999 to 5 in 2005. In Nakuru district, just 4 out of 205 sawmills remained operational. A shortage in timber supply resulted in price increases with a subsequent rise in the costs of construction. Timber utilization efficiency increased and waste was reduced. Imported timber and wood products increased from 7,000 m³ in 1999 to 3,884,000 m³ in 2002.

The logging ban has boosted demand and prices for other sources of IRW and in particular improved the economic potential of private farm forestry. How lifting the logging ban will influence the profitability of farm forestry is uncertain.

Source: Based on Kagombe et al. (2005).

World Bank forest sector support

Prior Bank operations did not achieve expected results. The World Bank previously supported the forest sector in Kenya through the Forestry Development Project, which closed in January 1998.² It focused on improving the efficiency and financial viability of timber production from industrial plantations, and establishing a framework for the forestry sector’s long-term development. It was envisioned that the private sector would have a major role in implementation of the above mentioned framework, and resources were to be provided to develop a mechanism for involving the forest industry and leasing long-term rights for industrial plantation management on gazetted forest lands to improve efficiency. The government rejected the option of

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² Credit No. 2198-KE (US$ 19.9 million) was approved December 1990, and made effective October 1992. The credit was closed January 1998. The Implementation Completion Report (ICR) is dated January 1999.
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private sector involvement, which led to an inadequate project design that failed to take into account sector shortcomings requiring major policy, legal, and institutional reforms. The interest of a primary stakeholder, the timber industry, had been left at the periphery. The indigenous forest and conservation measures, part of the original intent of the project, were excluded, leaving social and environmental values external to the project. As a result of the unsatisfactory performance of the sector the Bank withdrew its support to the forest sector.

1.12 The Implementation Completion Report (ICR) (World Bank 1999) for the Forestry Development Project included findings and lessons from its design and implementation:

- **Revenue capture.** Despite considerable investment in improved information, such as in plantation inventory, revenue from the sale of timber declined considerably. The problem was fundamentally related to the low level of collection of royalties rather than their assessment. Revenues were only collected sporadically.

- **Wood supply decline.** The government argued that plantation management leasing was not an option, but there were no improvements in the components to secure efficiency or financial viability of industrial plantations. The sawmillers reported a decline in the supply of IRW, and other factors related to plantation management discouraged investment in the forest industry.

- **Governance and institutional reforms.** Operations have to address issues such as governance, institutional sustainability, and expenditure management (accountability). The project design failed to use the opportunity to include commitments to policy, legal, and institutional reforms as part of the credit. Such reforms might have enhanced the likelihood of an increased payoff and financial sustainability of the project after project completion.

- **Addressing the forest industry and investments.** The ICR revealed that plantation establishment was only a first step toward sustainable timber supply and ongoing revenue flow, as shown by the impacts of poor management, weak policies, and the loss of 20,000 to 30,000 ha of industrial plantations during project implementation.

1.13 Over the past five years, the policy framework was improved as an outcome of the project and a revised forest policy was introduced. The assessment of a decade ago was done in a different context than exists today. Resource availability has changed, and further declines in the resource base and increasing environmental impacts of forest clearing have been experienced. But the long reform process has had strong ownership, revealing a commitment to institutional and structural change.

1.14 At the same time, with the Country Assistance Strategy (CAS) of 2004, the Bank introduced a strategy of reengagement closely linked with the Government’s Investment Program for the Economic Recovery Strategy (IP-ERS), which was strengthened more recently, with the CAS Progress Report (March 2007). Reviewing the changes over time and opportunities, the Bank feels that support to an ongoing forest sector reform process has the potential to generate better results. Taking into account the importance of forests and woodlands in rural areas and the opportunities offered in the 2005 Forest Act for increased stakeholder participation the Policy Note as well as the forthcoming NRM Project are closely aligned the Bank Group’s strategic emphasis on growth and poverty reduction with enhanced attention to equity and governance.

The forest resources of Kenya

1.15 The extent of forest and woodland resources is difficult to quantify, as there is no reliable data available. The official figure for the forest area in Kenya is 1.7 percent of the land area.
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This figure covers the gazetted forest reserve. The total forest area is probably larger because some forests are not gazetted. A definition of forests is not included in the new Forests Act.

1.16 **The mandate of the act extends beyond the gazetted forest area.** The forest area includes (i) the gazetted state indigenous and plantation forests; (ii) forests on private land, including farm forests; and (iii) forest on trust land, including scrub and woodlands in the Arid and Semi-Arid Land (ASAL) areas. The location of the forest area in relation to potential demand for forest products is as important as the inventory of wood and other resources and the potential for sustainable harvesting. Opportunities for participation in forest management and scope for revenue sharing are subject to the available forest resources, including forest area and inventory.

1.17 **The total land area of Kenya is 569,251 km² (56.9 million ha).** About 80 percent of the land and 20 percent of the population is in the ASAL, with low levels of precipitation. The ASAL area is covered by woodlands and grasslands. The 20 percent of high potential land is used for farmland, forests, and other uses, and is home to 80 percent of the population of 30 million (Gatundu 2003). According to the FAO Global Forest Resources Assessment (2005), the gazetted forest area comprising indigenous forest and plantations accounted for 906,000 ha in 2005, which is 1.6 percent of the total land area. It was 1.7 percent in 1990. According to the KFMP (MENR 1994), the combined area of gazetted forest land was 1.7 million ha in the beginning of the 1990s, but with forest cover on only 1.22 million ha. The area of non-gazetted forest area was 0.18 million ha. The total forest area in the beginning of the 1990s was thus 1.4 million ha or 2.4 percent of the land area.

1.18 **The indigenous forest area according to the KFMP covers about 1.2 million ha.** It encompasses the coastal forest, including mangroves, and mountain moist forest and the five water towers (Mt. Kenya, Aberdare Range, the Mau Range, Cherangani Hills, and Mt. Elgon). A large share of the indigenous forest area is in national parks and managed under a joint management agreement with the Kenya Wildlife Service (KWS) since 1991. National parks cover 5 percent and National reserves 2.7 percent of the land area in Kenya (Matiru 1999) and include a large part of the area within the water towers, including indigenous forest.

1.19 **Forest plantations, like the tea plantations, were often established as buffers near the indigenous forests.** The total plantation area for IRW production reported by the Kenya Forest Resource Assessment was estimated at 120,000 ha (Wass 2000). The plantation area was down from 160,000 ha in the 1970s (Kagombe and Gitonga 2005) and 148,000 ha reported for 1995 (Wass 2000). The forest plantation area has been reduced as a result of increasing pressure for farming land and excisions (that is, degazettement) for public amenities such as schools and

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3. The international definition of a forest area, as used by FAO, is any area with a crown cover of 10 percent or more.
4. The annual precipitation in dry lands is less than 300 mm and in semi-dry lands between 300 and 1,000 mm.
5. Other sources state the forest area is 1.7 million ha (Sedjo 2004; Vermeulen and Walubengo 2005; MENR 1994). According to a report by the Kenya Land Alliance (1999), the area under forest in Kenya was estimated at 2.4 million ha of which 1.64 million ha was gazetted.
6. The 120,000 ha supposedly under plantation forest in 1999 included 78,000 ha actually with trees, but due to lack of staff and resources there was a replanting backlog (Wass 2000). Vermeulen and Walubengo (2006) estimate that of a forest plantation area of 120,000 ha, about 90,000 ha was with tree cover, of which 36,000 ha may be economically over-mature. It is likely that just about 50,000 ha of the plantations estate are currently suitable for commercial forestry (D. Walubengo, Forest Action Network, personal communication, February 2007). An assessment from 1996 (Price Waterhouse 1997) estimated the forest plantation area to be 95,650 ha. Of this, 79,706 ha (83 percent) was less than 30 years and 51,041 ha (53 percent) less than 20 years old, and thus not likely to be mature for harvesting until after 2007 (annex 1 of this Forest Policy Note).
hospitals or other land allocation. Nevertheless, depending on the viewpoint the excisions in the mid 1990s could also be describe as outright land theft and subsequent forest destruction driven by political pressure and special interest groups.

1.20 The backlog of reforestation has been substantial. Kagombe, Gitonga, and Gachanja (2005) noted that the backlog of reforestation in 1999 was 46,000 ha, but it had been reduced by ongoing reforestation during the logging ban to 19,400 ha in 2004. The quality of the reforestation is disputed and some of the replanted areas may never come into forests (FOMAWA 2006). The plantation forest area may thus have increased from about 80,000 ha in 1999 to about 100,000 ha in 2003 because of reforestation efforts resulting from the reintroduction of the non-resident cultivation (or shamba) system. Kagombe, Gitonga, and Gachanja (2005) estimate the following:

- Area of mature forest plantation area (22 to 30 years) to be 11,500 ha with a volume of 3.7 million m³, of mainly pine and cypress
- Area of over-mature stands (older than 30 years) to be 27,300 ha with a stock of 9.6 million m³
- Area of younger plantations (younger than 22 years) to be 62,000 ha. There is a backlog of commercial thinning on 20,000 ha with an estimated volume of 2.0 million m³

1.21 The production of the forest plantation area could be between 1.5 and 2.0 million m³ annually. However, the production and value of the current plantation area is diminished as a result of neglected forest management (pruning and spacing) and lack of control over illegal removals.

1.22 The Forests Act extends coverage to include all forests and woodlands, not just gazetted forests. The KFMP of 1994 estimated this additional wooded area to be 37.59 million ha, composed of woodlands (2.14 million ha), bush lands (24.75 million ha), and wooded grassland (10.70 million ha). FAO classified more than 38 million ha or 67 percent of the land area in Kenya as forest and woodlands. Wooded areas in the ASAL are about 35 million ha or 62 percent of the land area. The area of private holdings is estimated in the FAO “Global Forest Resources Assessment” (FAO 2005) to be about 78,000 ha of non-gazetted forest area and about 3.5 million ha of woodlands.

1.23 The contribution of the forest sector is about 1.1 percent of GDP according to economic surveys. The GDP for Kenya was US$16.1 billion in 2005, which makes the contribution from the forest sector to GDP about US$175 million.

1.24 Economic contribution of Non-Wood Forest Products and services are underestimated. The economic revenue from informal trade in charcoal and the gathering and subsistence use and trade of fuelwood, wildlife, honey, and medicinal herbs accruing from the forests and woodlands might be substantial, but are not all included in the national accounts. Economic contributions from forest environmental services, such as watershed protection from the five water towers, are included indirectly in the national accounts, for example, through production

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7. In a regulated forest estate of 100,000 ha and a potential commercial Mean Annual Increment (MAI) of 15 to 20 m³/ha. The harvest is from annual clearing of 4,000 ha (with an average rotation age of 25 years) and from commercial thinnings.
8. A “baseline study to determine the contribution of forests to the national economy” is included in the 18-month inception phase of a forthcoming project “Miti Mingi, Maisha Bora” (Support to Forest Sector Reform in Kenya) supported by Finland.
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in the horticultural and agricultural sectors, but these contributions are not directly credited as a service delivered by the forest sector.

Production of forest goods and services

Production of and demand for Industrial Round Wood (IRW)

1.25 The potential production of IRW comes mainly from state plantations and farm forests. FAO (2005) in the “Global Forest Resources Assessment” estimates that the annual consumption of IRW in Kenya grew from about 2.0 million m³ in 1990 to about 2.4 million m³ in 2005. Part of the demand is satisfied by imports, for example, from Democratic Republic of Congo and Tanzania.

1.26 The demand for IRW is set to increase. Spears (2005) estimates the annual demand for IRW in Kenya might increase from 2.0 million m³ to 2.5 million m³ through 2015. IRW demand is expected to be 1.75 million m³ (70 percent) for lumber, furniture, joinery, and wood-based panels while 0.75 million m³ (30 percent) will be for paper products.

1.27 Industrial plantation and farm forestry are important for the supply of IRW. The supply could come from an area of about 100,000 ha of commercially managed state forest industrial plantations sustaining a domestic supply of 2 million m³ IRW per year. That is assuming an optimistic Mean Annual Increment (MAI) of 20 m³/ha/year. Another 0.5 million m³ of IRW can be produced from farm forestry. The IRW input for lumber, furniture, joinery, and wood-based panels is from relatively slower growing species and the main source could be state forest plantations. The species used for low-value products like fuel and pulpwood could be grown as farm forestry crops based on the shorter time horizon and faster capital turnover for the faster-growing species.

Fuelwood and charcoal

1.28 Wood for energy surpasses the demand for IRW 10-fold. FAO (2005) estimated that the use of wood for energy is about 10 times larger than the 2.4 million m³ production of IRW. It is roughly one m³ of wood for energy per person annually. The production of fast-growing small-sized wood for poles, fuel, and pulp is a viable option for small landowners but seldom for poor people without land or resources to invest. In the ASAL, the economic and sustainable use of wood resources provides options to improve livelihoods in large marginal areas.

1.29 A national charcoal survey (ESD 2005) found the following in Kenya

- 1.6 million tons of charcoal are produced annually (requiring an input of about 10 to 15 million m³ of wood).
- K Sh 32 billion (about US$450 million) is generated in total annual income from charcoal (K Sh 20,000/ton). This is almost equal to the income generated from the tea industry. Government revenue from legal production could amount to more than K Sh 4 billion (in value added taxes to Treasury).
- 200,000 charcoal producers and 500,000 traders are involved in charcoal trade.
- Some 82 percent of the wood for charcoal came from own farm or private land, while 13 percent came from public (government or county council) land and 5 percent from communal

9. The introduction of the exotic species Mathange (Prosopis juliflora) in the ASAL was well-intended but the tree has become an invasive species.
land. The low share from state land has been questioned because there is believed to be widespread illicit exploitation of fuelwood and charcoal from state forests.

- Over 90 percent of charcoal producers are using inefficient, traditional earth kilns with recovery rates as low as 10 percent.

1.30 **Regulation of the charcoal industry is as big a challenge for the forest sector as the management of forests.** Recommendations to develop and regulate the charcoal sector were outlined by ICRAF (2005). Current status follows each recommendation.

- Develop policies and regulation for profitable and sustainable charcoal production. (Charcoal production is included in the Forests Act and subsidiary regulation is being prepared.)
- Provide finances and staff for implementation of the charcoal policy and regulation and extend support to commercial tree farming. (An implementation plan has yet to be developed by the KFS.)
- Develop and implement short- and long-term plans for massive tree planting. (Expansion of farm forestry and the plantation forests is expected.)
- Facilitate research for the development of efficient and affordable kilns for small-scale charcoal producers. (Efficient kilns are being developed by nongovernmental organizations and consultants. Investments in efficient kilns are more likely under legalized production and trade.)

1.31 **Subsidiary legislation is being drafted under the Forests Act with rules on charcoal production, transportation, and marketing** (draft dated February 19, 2007):

- The forest rules for charcoal explore sustainable charcoal production with a Certificate of Origin of the supply of wood. One aim is to establish wood lots to supply the wood needed for charcoal production.
- No commercial charcoal production will be allowed using kilns with a conversion rate of less than 20 percent; currently, illegal earth kilns deliver an estimated 90 percent of production. With legalized production, low-cost investments can be made in available technology to improve efficiency above the required level.
- The KFS must encourage commercial charcoal producers, transporters, and traders to form associations.

1.32 **Fuelwood for industry is also in demand.** Demand is localized and evidence (from Meru district, for example) reveals unsustainable exploitation of industrial fuelwood sources around tea factories. The conversion of tea factory boilers from oil to wood has increased demand for industrial fuelwood and reduced energy costs by more than 50 percent.

The tea industry (Kenya Tea Development Agency or KTDA) has tried in the past to obtain land from the Forest Department for fuelwood production. The new Forests Act provides the industry with some encouragement. The tea industry is concerned about the sector’s public image when fuelwood leads to resource depletion.

1.33 **The demand for wood for energy may also lead to economic potential to generate income for the poor and revenue for the government.** However, the availability of “free” wood may hinder the profitability of fuelwood plantations. Fuelwood plantations cannot compete with fuelwood collected for free. Only if fuelwood becomes scarce and costly to collect or regulations reducing collection are enforced can fuelwood plantations become profitable. Annex 2 includes economic considerations on wood production for fuelwood and charcoal.
**Pulpwood**

1.34 **The pulp industry in Kenya faces multiple challenges.** The only paper mill in Kenya is the Pan African Paper Mill (PPM) located in Webuye, Western Kenya. PPM depends on local resources; obtaining pulpwood from external sources by the sea is not an option. PPM has a pulpwood shortage. As a rule of thumb, breakeven considerations require that the transportation distance be within 100 km of the mill (J. Wanyiri, KFS, personal communication, February 2007). However, biomass for pulpwood is sourced from farther away. Residues from sugar cane production are also used.

1.35 **The demand for pulpwood is a minimum 0.5 million m³ annually,** and it could be sustainably produced in a pulpwood plantation of about 25,000 ha, assuming a Mean Annual Increment (MAI) of 20 m³/ha/yr at a production cost of at least K Sh 0.5 billion annually.¹⁰ A supply of pulpwood at market prices, or production costs from growing in a plantation, may be higher than the breakeven price for raw materials at the mill. The payment for collected industrial wood for fuel and fiber is low. According to sources, PPM currently pays “peanuts” for wood from plantations and from other producers and collectors.

1.36 **Farm forestry can supplement pulpwood demand.** Farm forestry producing fast-growing trees may deliver the products to PPM (within the economic transportation distance), the tea factories, for charcoal (when legalized), or local fuelwood and poles. A farm forestry producer can have many markets for low-grade products depending on location but low-value products cannot withstand high transport costs, for example, fuelwood compared with timber logs.

1.37 **Producing low-quality products only for fiber or energy may not, in the long run, be the most efficient use of land.** Growing trees for a low-value product may not be as profitable as growing a higher-value product, such as timber, where part of the production (precommercial thinnings and sawmill off-cuts) can be used for fuelwood and other wood products.

**Other products and services**

1.38 **Forests in Kenya are a source of non-wood forest products,** for example, honey, wildlife, and medicinal herbs, for adjacent communities and local markets. Non-wood forest products range from those produced within the limited forest area to the larger woodlands of the ASAL. Other uses include livestock grazing in woodlands. The use of forest areas for products other than timber is particularly important for the 20 percent of the population living in the ASAL because they have few other livelihood alternatives. However, perhaps more than 90 percent of households in Kenya rely on forest-based goods and services in one way or another for their livelihoods.

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¹⁰ The government royalty rate (replacement cost) of K Sh 700/m³ is, in theory, an estimated minimum production cost. The royalty rate is a minimum selling price and does not include a rent to land. Annex 2 shows that the production costs per m³ of fast-grown wood for pulp or energy might be at least K Sh 1,000 /m³ at the forest gate. The stumpage cost of raw material for PPM could be at least K Sh 500 million annually, not including the cost of transport to the mill. KTDA pays on average K Sh 1,000/m³ for fuelwood delivered at the tea factory.
Policy, regulatory, and institutional challenges

1.39 **Low participation in the forest reform process has been a constraint.** The motivation has been low for participation in sustainable forest management, protection of the forest resource, enforcement of regulations, and investment in management and reforestation. Constraints in policy formulation and unclear regulations have thus far limited the participation of communities and the private sector.

1.40 **Solving the institutional, policy, and regulatory challenges is central to making participation in forest management feasible.** The greatest institutional challenge is the development of joint management models and procedures that will result in management agreements and foster participation, so that forest policy objectives can be achieved.

1.41 **The new Forests Act separates regulatory and economic functions.** The KFS as the manager is being detached from the Ministry of Environment and Natural Resources (MENR) as a regulator. In the MENR, a Forest Policy Division will be established, which will be responsible for policy formulation and oversight; setting national standards and guidelines for sustainable development; formulating and harmonizing legislation and statutory regulation; sector planning and coordination; cross-sectoral engagement, integration, and coordination; monitoring and evaluation; sector budgeting and fund mobilization; and fulfillment of international obligations. Thus, even with the establishment of the KFS, the MENR will continue to have a significant role in forest policy development, oversight, and implementation.

1.42 **The new Forests Act has made participation in forest management more feasible but does not guarantee that it will happen.** Guidance, targets, and procedures for implementation remain to be developed. Various regulations called for by the Forests Act (section 59) will be formulated and further define the operational terms for participation in forestry. The ongoing logging ban in state forest reserves must be lifted to allow logging through concession agreements or management agreements with CFAs. The future role of the KFS and its capacity to support participation in forest management, a willingness to implement benefit and cost sharing, and commitments to partnerships are yet to materialize in a KFS strategy. Safeguards of private sector investments and legal enforcement of delegated rights in management agreements and investments are needed.

1.43 **Introduction of participation and partnerships is not a panacea** for the challenges facing the forest sector in Kenya. In addition to skills, motivation, and investments required from the private sector and communities, the government must demonstrate policy commitment and willingness to share responsibility for and revenue from forest management.

1.44 **The implementation of participation in forest management will address a number of issues** relevant to forest sector reform:

1.45 **The FD must be institutionally and operationally transformed into the KFS.** The Forest Department may be reluctant to transfer resource rights and management decisions because the MENR and the KFS, as the FD’s successor, will retain overall responsibility but lose some direct control. Participation by external stakeholders will take time to develop, and the ultimate results are unknown. This reluctance to transfer rights and management can be eased by developing

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11. The logging ban has been administered as if no logging operations would be permitted, although commercial thinnings would have been exempted (A. Maina, KFS, personal communication, February 2007).
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appropriate approaches and initiating pilot implementation projects. Defining requirements in the management agreements can allay fears about external participation.

1.46 **Deficits in the supply of wood and fiber in the required amounts, locations, sizes, and species must be dealt with.** Despite Kenya’s favorable climate and location for wood production, the economic activities of the forest industry fall short of providing a secure supply of wood, fiber, and energy. Participation in forestry may help ensure efficient and sustainable forest management and production, but further investment is also needed.

1.47 **Communities have high expectations for sharing in the benefits of participation in forest management.** Forest management agreements with CFAs will assign rights and responsibilities, but not all forests will yield adequate sustainable return to make participation in forest management attractive for communities and meet their current expectations. The rights of communities to use forest resources are currently taken de facto where government control is absent but may now be granted legally with possibly insignificant change for local communities.

1.48 **Mechanisms for sharing costs and benefits need to be developed.** Management agreements will require mechanisms for sharing costs and benefits. Revenue sharing, as well as sharing management responsibilities, is a critical element in partnerships with industry and communities alike.

1.49 **Plantation forests have not been commercially managed for a decade and economically valuable forest resources are lost.** The backlog of forest management and renewal of mature stands is an immediate forest-planning challenge. The logging ban stopped much of the illegal use, but also reduced sawmilling capacity, employment, and incentives and resources for management and the value of the plantation forests. The temporary capacity required to deal with a short-term logging backlog may not be available, and should not be sustained when the backlog is cleared.

1.50 **Farm forestry has revealed significant production and income potential.** Wood and fiber resources produced on farms are not part of the planned supply of wood and fiber to industries and the markets are not well-developed. Farm forestry is impeded by the prevailing permit system for felling and transporting timber; the system is used inconsistently and is a disincentive and constraint for smallholder forestry. The extension services provided by the FD to farm forestry during the logging ban has been “forestry” focused rather than “farm” focused.

1.51 **New opportunities for forest products and uses in the ASAL can be explored.** The importance of secured user rights for communities to forest resources in woodlands in the ASAL has not been addressed previously, but new opportunities emerge in the Forests Act and its extended coverage over trust lands and further involvement of local government authorities.

1.52 **Issues of transparency and accountability must be addressed to encourage participation.** Transparent mechanisms for allocating and revoking rights to forest resources must be developed, to ensure adequate investment and participation by industry and communities.

**Comparing the new and the former Forests Acts**

1.53 **The new Forests Act of 2005 replaces the repealed Forests Act (CAP 385) of 1962 (revised 1982 and 1992).** The Forests Act (CAP 385) allowed for the following: Forest reserves and nature reserves could be established through gazettement and canceling. Forest reserves on government land were managed by the Forest Department (FD), while those on trust land were managed by the local authorities. These include both indigenous and plantation forests. Licenses could be issued for various uses and forest royalties and fees could be set under forest rules. Certain activities were prohibited in forest areas and procedures were established for enforcing the (former)
Forests Act and penalties for breach. Rules for regulating sale and disposal of forest products, including rights of local people for certain uses and access, were set.

1.54 **The new Forests Act (2005) addressed limitations identified in the former Forests Act.** The new Forests Act is modernized to address current economic and social realities. Key changes in the new Forests Act compared with the former Forests Act relevant for participation in forestry follow: KFS was established as a semiautonomous agency with a Board of Directors. All forest areas, including nongazetted forests and woodlands, are included while the former Forests Act concerned only gazetted forests. This change brings on new opportunities for community participation in use and management of forest resources in ASAL and private forest land and woodlands. New funding mechanisms, including the Forest Management and Conservation Fund, were provided for. Levies can be charged for environmental services, extension services, and royalties. Options were made available for management agreements for plantation forests through concessions or other agreements and other incentives for community and private sector involvement. The new Forests Act includes a chapter on community participation (sections 46–49). Rights can be provided to CFAs to enter into management agreements in state forests or local authority forests. The MENR and the KFS are now responsible for regulating charcoal production and trade.

**Opportunities in the Forests Act for participation in forest management**

1.55 **The Forests Act makes provision for participation in forest management:** Collaboration between the KFS and stakeholders in management agreements is included in the Forest Regulation on “Participation in sustainable forest management” (draft January 26, 2007). The KFS is to provide regulatory and technical assistance to enhance forest users’ and producers’ organizations, and to improve communication between these organized forest sector partners. Information is to be made available about investment opportunities in the forest sector for forest enterprises with forest-based goods and services involving potential partners.

1.56 **Partnership arrangements in the forest sector are not defined** in the Forests Act 2005. The Forests Act, the Forest Policy (2006), and subsidiary regulation provide opportunities for participation in forest management. According to the Forests Act (section 35.1), “Every state forest, local authority forest and provisional forest shall be managed in accordance with a management plan that complies with the requirements prescribed by rules made under this Act.”

1.57 **New opportunities to share and/or delegate management responsibilities emerge.** Management plan preparation is the responsibility of the KFS on state forest land and of local authorities on trust land. But the Forests Act (section 35.4) makes it possible for the KFS and local authorities to discharge this responsibility by adopting a management plan prepared by another person, organization, or company.

1.58 **Start-up of new management regimes is being piloted.** The Forest Department’s “Framework for Forest Sector Reform” recommends that the government introduce pilot-scale schemes for the commercialization with concessions of 25,000 ha of state forest plantations and Participatory Forest Management (PFM) in a further 15,000 ha (Spears 2005).

1.59 **Sharing as a tool to engage with stakeholders.** A strategic plan for the KFS is now under preparation. The opportunities involve the sharing of decision making, management, and costs and benefits from forestry among the involved stakeholders. Opportunities are emerging mainly for state forest reserves and private farm forests but also for woodlands on trust land (with local authority administration).
1.60 **The key elements in the forest sector reform** are (a) increased stakeholder involvement in regulation and management of the forest sector and private sector investments (see table 1.1 for a summary of forest management arrangements enabling stakeholder involvement); (b) provisions to reduce political interference in regulation and management of the forest sector; and (c) revised institutional arrangements. Forest management and regulatory functions are transferred from the former Forest Department to the KFS. Some forest policy functions are transferred to MENR.

1.61 **Improving the forest information base is key.** Inventories of state plantations and indigenous forests are required for national forest management planning, but these inventories will be long-term activities. Annex 3 provides an overview of sections of the new Forests Acts relevant to participation in forest management.
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Management agreement</th>
<th>Products and services</th>
<th>Duration</th>
<th>Payment</th>
</tr>
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<tbody>
<tr>
<td>Private sector</td>
<td></td>
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<tr>
<td>Concession</td>
<td>Competitive bidding. Bids are made after prequalification. Bidders submit a sealed bid and a concession management plan.</td>
<td>Long-term forest management, reforestation (investments), and logging. The forest management plan must be revise at least every five years. A model concession agreement to be prepared by the KFS.</td>
<td>Up to 30 years (subject to renewal).</td>
<td>An advance payment is made before commencing operations. A performance bond is posted.</td>
</tr>
<tr>
<td>Timber license</td>
<td>Through competitive bidding with a reserve price. Bidders submit a felling plan and a sealed bid with a fixed payment. Potential bidders first go through prequalification.</td>
<td>Timber in areas identified suitable for commercial harvest in the KFS strategic management plans. The KFS decides every year on the area of state forest suitable for private sector harvesting. Can be temporary while establishing a concession agreement.</td>
<td>Up to one year. Timber licenses used to be up to five years.</td>
<td>The bid price is paid to the KFS before commencing harvest in a unit. A performance bond is posted.</td>
</tr>
<tr>
<td>Joint management</td>
<td>Calls for applications are announced and selection is based on technical and financial capabilities. (Not to be confused with a “Joint Forest Management Agreement” with a CFA)</td>
<td>The primary purpose is forest conservation and allowing non-consumptive uses. Limited consumptive use may be allowed if it is sustainable. An option for development of tourism facilities. Applies to state plantations and indigenous forests (previous draft only included indigenous forests).</td>
<td>Not stated.</td>
<td>Cost and benefit sharing mechanism to be included in the joint management agreement.</td>
</tr>
<tr>
<td>Permit</td>
<td>Case by case when an individual makes an application to the KFS.</td>
<td>Various uses of forest goods or services in state forests. The principal activity is not commercial timber harvesting. A likely potential use is in charcoal production and trade. Community user groups may be targeted.</td>
<td>Up to six months.</td>
<td>Fees and other charges based on the activity of the permit.</td>
</tr>
<tr>
<td>Contract</td>
<td>The KFS may enter into contracts with suitable qualified persons to perform specified activities</td>
<td>Forest management, construction of roads and buildings, preparation of management plans, nurseries, and the like.</td>
<td>Not stated.</td>
<td>Payment is from the KFS to the service provider. No title to felled timber can be granted to</td>
</tr>
<tr>
<td>Instrument</td>
<td>Management agreement</td>
<td>Products and services</td>
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<tr>
<td></td>
<td>activities (service providers). Allocation is by tender.</td>
<td>Contract for forest management and logging if the KFS is entering into log auctions.</td>
<td></td>
<td>a contract holder if the contract includes tree felling.</td>
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<tr>
<td></td>
<td></td>
<td>Contracts for management and reforestation in the case of timber licenses.</td>
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<td></td>
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<td>Contracts can also be entered with other state agencies such as the KWS.</td>
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</tr>
<tr>
<td>Special license</td>
<td>Case by case when an individual makes an application to the KFS.</td>
<td>For activities inside a state forest that yield public benefit, for example, transportation, communication, energy, water supply, research and education.</td>
<td>Not stated</td>
<td>Not stated.</td>
</tr>
</tbody>
</table>

### Community participation

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Management agreement</th>
<th>Products and services</th>
<th>Duration</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest management agreements</td>
<td>Agreement with CFAs that wish to conserve and use forests for purposes of livelihoods or cultural or religious practices. If more than one CFA applies for the same area they will be encouraged to collaborate.</td>
<td>The KFS shall propose areas suitable for forest management agreements and license CFAs. The KFS shall develop sample community forest management agreements and plans.</td>
<td>Not stated</td>
<td>Schedule of fees, if any, included in agreement. Indigenous forests are mainly for conservation rather than use. The revenue potential may be limited.</td>
</tr>
<tr>
<td>Non-resident cultivation</td>
<td>Agreement between the KFS and a CFA to allow its members to engage in non-resident cultivation in adjacent forest areas. Plots allocated to individuals through a balloting system. The allocation should give priority to the poor and vulnerable members of the community.</td>
<td>Cultivation of crops during the initial phase of establishment of an industrial plantation. Similar to the former shamba system. Only applicable to areas intended for the establishment of industrial plantations. Not allowed to sublet or sell the use right for an allocated plot.</td>
<td>Not stated</td>
<td>Advance payment of an annual rental fee upon allocation of the plot and subsequently every 12 months. Can be combined with PFM agreements with a CFA and plantation concession management.</td>
</tr>
</tbody>
</table>

*Source: Authors’ compilation.*

*Note: The table includes instruments for participatory forest management in the Forest Rules (draft January 26, 2007). The Forest Rules initially apply to state forest land but will also apply to trust land, subject to approval by the Minister of Local Government.*
The Forests Act includes several sections providing opportunities for forest management agreements. Table 1.2 is an overview of sections of the Forests Act that emphasize management agreements.

Table 1.2 Forests Act 2005: Sections on management agreements

<table>
<thead>
<tr>
<th></th>
<th>Indigenous forest</th>
<th>Forest plantations</th>
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<tr>
<td><strong>State forest reserve land</strong></td>
<td>Section 36: The Director may enter into agreement with any person for the joint management of any forest</td>
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<td>Section 40: Concession in state forest</td>
<td>Section 37.2: License, concession, contract, joint agreement of state plantations</td>
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<td>Section 41.3: Joint management of state indigenous forest for other purposes than logging</td>
<td>Section 40: Concession in state forest</td>
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<tr>
<td><strong>Local authority area (trust land)</strong></td>
<td>Section 36: The Director may enter into agreement with any person for the joint management of any forest</td>
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<td>Section 39: Management agreement for any forest the jurisdiction of local authorities</td>
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*Source:* Authors’ compilation.
2. Options for Participation in Forest Management

A key feature of the Forests Act (2005) and the ongoing forest sector reform in Kenya is the provision for developing participation in sustainable forest management. Participation and partnerships in forestry have occurred in different forms in Kenya, but further development of model approaches will likely be required. Participatory forest management and agreements with the private sector were limited in the past, but offer further potential. While there is scope for gains, both for community livelihoods and supply of raw materials and energy, there are also constraints related to capacity, organization, and financing.

Background to participation in forest management

2.1 Participation in forest management can fulfill several purposes: enhancing the contribution of the forest sector to rural livelihoods and to national development goals for poverty reduction; improving protection, management efficiency, and sustainability of the state forest estate; and securing the supply of Industrial Round Wood (IRW) to the forest industry and securing the supply of industrial wood fuel.

2.2 The key goals of participation in forest management follow:

- Improvement of local livelihoods through Participatory Forest Management (PFM) involving local communities in the management and use of indigenous forests, plantations, and woodlands as common property resources for protection, management, and production of wood, non-timber forest products, and environmental services;

- Commercialization of the plantation forest sector to enhance the supply of domestic IRW by involving private sector operators through concessions and investment;

- Harnessing the potential for private farm forestry production of timber, poles, pulpwood, and fuel.

2.3 Several countries are “privatizing” forest tenure, forest management, and provision of services in the forest sector through partnerships (Mayers 2005). (See box 2.1 for a summary of different arrangements for stakeholder engagement in forest management.) A forest management agreement includes at least two parties and may also have a third-party component; for example, the government can support private sector partnerships with small-scale farm forest producers, and third-party certification schemes can help validate private sector concession on state forest land.
Box 2.1 Experience with participation in forest management in other countries

PFM with the involvement of community organizations has developed in various forms. For example, in India and Nepal, allocating rights of forest user groups to manage and use local forest resources and converting the use of the forests from “open access” exploitation to “common property” management have contributed to improved livelihoods for poor people. Local communities can also contribute to the protection of forest resources against fire and illegal use once they have obtained certain rights to the resources.

One experience emerging from PFM and partnership agreements with the private sector in Eastern and Southern Africa is that the conditions for sustainable PFM are difficult to meet without substantial and continued external assistance—from a donor, for example. The experience from Eastern and Southern Africa reveals the linkages with PFM regulation of title and user rights to land. Wiley and Mbaya (2001) explore the impact of land relations on the involvement of communities in forest management in the region.

In Tanzania, PFM is implemented along two lines: community-based forest management on Village Forest Reserves on Village Land, and joint forest management with joint management agreements in state Forest Reserves, for example, in watershed protection forests, for a limited period of 15 years. The area under PFM is more than 3.6 million ha covering about 10.8 percent of the forest estate. An estimated 1,821 villages are involved in PFM. Under joint forest management, only a fraction (149 out of potential 719 villages) of the potential management agreements have been signed because of uncertainty about the mechanism for sharing costs and benefits between the government and the villages. PFM was introduced with Tanzania’s revised Forests Act in 2002 (Forestry and Beekeeping Division 2006).

South Africa employs outgrower schemes to supply pulpwood to large-scale private pulp mills (such as SAPPI Ltd. and Mondi Business Paper). South Africa’s forest plantation area is 1.5 million ha, mainly in private ownership. The outgrower scheme has focused on Kwa-Zulu Natal province and the supply is less than 10 percent of mill throughput. A key motivating factor in South Africa for the industry to engage in outgrower schemes is that available land for forest plantations is limited because of regulations for protection of water resources. An estimated 11,300 to 14,800 individual small-holders with an estimated area of 25,500 to 37,800 ha are involved in tree growing with company support (Mayers and Vermeulen 2002).

In Uganda, one program—the sawlog production grant scheme—provides grant assistance to individual and corporate investors in tree planting. In the first two years 2,700 ha have been planted. The program is supported by the European Union and information is available at www.sawlog.ug. The privatization of forest plantations in Uganda has not provided the expected sustainable flow of income to the forest department, and as a result created a financing gap for the public forest sector rather than closing it.

Partnerships in community-based natural resource management are also extended to experience with management of other natural resources, for example, watersheds and wildlife resources.

Source: Authors’ compilation

2.4 Participation in forest management includes a wide range of contracts and informal agreements between companies, communities, smallholders, and government agencies. The participation in management of forest resources includes various grades of involvement and user rights from state to private ownership of land and stumpage (see annex 4).

There are two main types of participation in the forest sector in Kenya, as follows.

2.5 Participation in forest management of state forest reserves involves sharing of resource tenure, decision making, management, and revenues from gazetted forests through
PFM or concession management. Joint Forest Management has been developed in many countries, including Kenya. The tenure of state forest resources, including woodlands, and management obligations may be transferred to local community-based organizations. The logging and management of state forests can be transferred to a private company concession through competitive bidding. With long-term concession agreements the incentives for management increase. The concession agreement can include provisions for user rights and involvement of local communities.

2.6 The assurance of supply for wood-based industries or industries depending on wood fuel is an incentive for them to develop partnerships with producers. Partnerships between wood-producing smallholders and larger agribusiness companies to supply the industry with raw materials are entered into in return for seedlings, technical support, and market access. Continued market transactions between a producer of forest products and a forest industry can develop into an “informal” partnership relation.

Opportunities for participation in forest management

2.7 For the government, the delegation of tenure and user rights, are the key elements of participation in forest management, this includes including decision making, management responsibility, and benefits sharing.

The types of participation and partnerships in the forest sector include the following:

- **PFM**, which can be divided into two different types: Community Based Forest Management (CBFM) and Joint Forest Management (JFM). The difference between the two is important, but not widely understood. CBFM takes place on village or private land, with the forest (or trees) owned and managed by a village council, a group, or an individual. Most costs and benefits relating to management and utilization are borne by the owner. JFM takes place on “reserved land”—land that is owned and managed by either central or local government. Villagers usually enter into management arrangements to share responsibilities for the management with the owner.

- **Farm forestry.** Forest farms can enter into partnership with forest industry to receive knowledge and small investments in return for a supply of IRW and fuelwood. Associations of farm forest producers can also contract with the KFS and private service providers to provide extension services.

- **Outgrower schemes.** Such agreements can be entered into between farm forests and forest industry and other wood-consuming sectors, for example, for production of fuelwood for tea producers.

- **Long-term concessions.** Concession agreements between the state and primary forest industry or forest management entrepreneurs for the management of commercial state forests can be critical for sustainable forest management, but system and attitude changes are required to make concession agreements transparent and efficient.

- **Partnerships between community-based forest enterprises and locally based sawmills.** This type of partnership can reduce potential conflicts with local communities and provide employment opportunities.

- **Development of ecotourism facilities in forest areas.** About 200 different locations are identified by the KFS as potential sites for further feasibility assessment and potential involvement of private sector investments (A. Maina, KFS, personal communication, February 2007).
2.8 The scope for participation in forest management in Kenya is outlined in detail in several reports prepared by IIED (Mayers 2005; Vermeulen and Walubengo 2006) for PROFOR/World Bank. The main emphasis of the IIED reports is on private sector partnerships to secure the supply of IRW and fuelwood from state plantation forests and farm forestry for industry use. Participation in Sustainable Forest management in the Forest Policy Note is expanded to include community-based forestry or PFM in more detail (see figure 2.1), including opportunities on arid and semi-arid woodlands.¹²

2.9 The introduction of PFM in Kenya will be complex and there are uncertainties about where, how and if PFM can work and different opinions about its purpose. Expectations are already raised among communities for their unconstrained access to and use of forest resources. These expectations have to be adjusted through learning, cost-benefit mechanisms, feasibility assessments, and piloting.

¹² A community is defined as a group of persons, users, or households at the local level joined in an agreed on community-based organization. The organization can be established as a CFA according to democratic principles and with bylaws and elected representatives. The community can include a whole village or users of a given forest resource. There are risks of local “elite capture” and exclusion of all potential beneficiaries, for example, the destitute and women, and regulation should seek ways to avoid this.

The community-based organization acts as the custodian of the forest resource and holders of given user rights and management obligations according to a management agreement. The net revenue gained by the community-based organization or its members can be used at its own discretion, for example, as agreed in bylaws, for local investments and services that may not be directly linked to forest management.
Figure 2.1 The forest participation and partnership triangle

Kenya Forest Service (KFS)

KFS – industry
- Concession management, timber license, forest land lease
- Forest Industry Forum

CFA/Farm Forestry – KFS
- (optional third party)
- Joint forest management agreements
- Protection of indigenous forests
- Non-resident cultivation
- Purchase of extension services from KFS (or private service providers).

Third party agreements
- Certification of forest management and trade
- Producer association support (CFA, farm forestry, charcoal)
- Joint forest industry–CFA concessions
- KFS-initiated resource inventory and demand-supply planning

Forest industry

Community (CFA) or farm forestry

Industry – CFA or farm forestry (KFS optional third party)
- Farm forestry supply agreements and outgrower schemes
- Non-resident cultivation in concessions and on private forest land
- Lease of private land for forestry

Source: Authors’ compilation.

Note: The figure combines the partners and various examples of participation in sustainable forest management.

2.10 Community and forest-industry partnership approaches are available. A Forest Investment Workshop co-organized by the World Bank and PROFOR (November 2004) identified
several community and forest industry partnership-based approaches for possible pilot testing (Spears 2005):

- An integrated natural resources management partnership between government and local communities for management of community-owned sawmill and government plantations in the Ukambani region;
- Participatory management by communities in the government plantation areas in the Aberdares near Nyeri (supported by Kenya’s Green Belt Movement);
- Engagement of smallholders in Western Kenya as outgrowers of pulpwood and fuelwood in demand by PanAfrican Papers Mills (PPM);
- Engagement of smallholders as outgrowers of fuelwood required by small tea growers and tea factories; investments by larger-scale tea and coffee companies in timber and pole outgrower and community schemes;
- Concession partnerships between sawmilling companies and local communities for rehabilitation of existing sawmills and management of specified areas of government plantations under long-term concession agreements;

Annex 5 includes options identified for participation in forest management in Kenya. In summary, the key potential avenues for development of participation in forest management in Kenya are:

- Joint Forest Management (JFM) with CFAs for common property management of indigenous forests, some plantations, and woodlands and use of small wood products and non-wood forest products (NWFP);
- Concession management of commercially productive plantation forests to enhance the efficiency of production of IRW and investments in reforestation. The involvement of local communities can be an option in a concession agreement;
- Farm forestry with potential private production and supply of timber, pulpwood, and energy in close collaboration with private sector industry.

2.11 Participation in forest management involves several stakeholders, all of whom must benefit from management agreements and partnerships to supply IRW and wood for energy. The possible forest management agreements and their involvement of stakeholders are included in table 2.1. Some of the opportunities and constraints for participation in forest management in Kenya are addressed in table 2.2. The experience of private sector partnerships has been explored by IIED in studies commissioned by PROFOR/World Bank. 13

13. See Vermeulen and Walubengo (2006) for further elaboration on examples of partnerships in the forest industry.
Table 2.1 Options for models and stakeholders for participation in forest management

<table>
<thead>
<tr>
<th>Participation option</th>
<th>Forest management and use stakeholders</th>
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<tbody>
<tr>
<td></td>
<td>Communities</td>
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<tr>
<td><strong>PFM</strong></td>
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<tr>
<td>Community-government partnership on</td>
<td>• Management of forest as common property.</td>
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<tr>
<td>• gazetted forest plantations and indigenous forests (joint forest management)</td>
<td>• Exclusion of outsiders and protection against fire.</td>
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<tr>
<td>• ASAL woodlands on trust land for fuelwood and NWFP</td>
<td>• Obligations according to management plan.</td>
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<td></td>
<td>• Benefits from sustainable use of minor forest products and fuelwood access.</td>
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<tr>
<td><strong>Long-term concession</strong></td>
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<tr>
<td>State–private sector partnership on gazetted state forest plantations and lease of forest land.</td>
<td>• Option to include local user rights to NWFP and the like in management agreement.</td>
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<td></td>
<td>• Employment opportunities.</td>
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<td></td>
<td>• Non-resident cultivation.</td>
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<tr>
<td><strong>Small-scale farm forestry</strong></td>
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<tr>
<td>Private-community partnership linking small-scale farm forests (&lt; 50 ha) with forest industry or other private sector (tea factories, for instance).</td>
<td>• Individual households in the community.</td>
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<td>• Optional employment and management for poor people.</td>
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<tr>
<td><strong>Large-scale farm forestry</strong></td>
<td></td>
</tr>
<tr>
<td>Private – private/community partnership - large-scale farm forests (&gt; 50 ha) linked with forest industry.</td>
<td>• Access to collect minor forest products and fuelwood.</td>
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<td>• Optional local employment.</td>
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<td>• Charcoal production on ranches (clear bush and improve grazing).</td>
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### Table 2.2 Opportunities and constraints for participation and partnerships in forest management

<table>
<thead>
<tr>
<th>Type of participation and partnership</th>
<th>Opportunities and scope</th>
<th>Constraints and risks</th>
</tr>
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</table>
| **PFM** – on gazetted state forests (plantations and indigenous) and non-gazetted woodlands | • Access to land and livelihood opportunities otherwise legally available to communities.  
• Community provides management and protection services.  
• Can help disadvantaged groups by giving preferential access and rights. | • Restricts access for previous users.  
• Risk that communities are more interested in land tenure and agricultural use than forest management.  
• Lack of community capacity for forest management.  
• Social exclusion in CFAs due to elite capture. |
| **Concession management** – on gazetted state forest plantations | • Employment opportunities in forest management operations and mills.  
• Rehabilitation and commercial value of plantations, increase in net revenue to government.  
• Potential social returns from plantation use, for example, with non-resident cultivation. | • High KFS revenue expectations ignoring operating margin, costs for management, and reforestation (guidance on the assessment of the bidding price is provided in annex 6)  
• Collaboration between concession holder and local communities required.  
• Requires long-term commitment from both concession holder and government. |
| **Outgrowers for pulp and fuelwood production** – farm forestry on private land (vertical organization) | • Policy constraints are few.  
• Short rotations attractive to farmers (for example, eucalyptus and bamboo).  
• Good growing conditions.  
• Pulp mills, tea, coffee, horticulture, and tobacco companies already have experience (but for shorter time periods).  
• Support to farmers with seedlings and extension service and secured market.  
• Demand for fuelwood and poles.  
• Fuel substitution from oil to wood with a possible Clean Development Mechanism (CDM) link | • Transaction costs of agreements.  
• Time lag for income generation to be covered by industry at a cost.  
• Contract growing bypasses the market. Partnership not balanced with weaker organization of producers in farm forestry.  
• Environmental concerns about impacts of eucalyptus, for example, to water use.  
• Returns to farmers may be insufficient (subject to transport distance to processing plants and product prices).  
• Poor public image of pulp production; one pulp wood buyer only. |
Participation in Sustainable Forest Management
Forest Policy Note, Kenya

<table>
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<tr>
<th>Type of participation and partnership</th>
<th>Opportunities and scope</th>
<th>Constraints and risks</th>
</tr>
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</table>
| Outgrowers and joint ventures for timber production – farm forestry on private land (horizontal organization) | • Trees tend to secure the tenure of private land rights.  
• Potential for higher net returns to farmers and using trees as savings.  
• Farmers have experience growing trees already suitable for timber species.  
• Options for primary forest processing. | • Difficult for farmer to know timber market prices.  
• Time lag for farmers and interim loss of land for crops, which makes the partnership more feasible for larger and more resourced land owners.  
• Incentives to remove indigenous vegetation for exotic species. |


2.12 Participation in forest management has the potential to contribute to economic development and poverty alleviation in Kenya through engagement of local communities and promotion of investments by the private sector. Secured and legalized access to forest products including collection of NWFP may be important for local livelihoods. The logging ban has prevented most legal forest operations in state forest reserves, but secured the market for farm forestry. There are opportunities to reactivate the commercial forest sector and enhance the supply of raw materials and create employment opportunities.

2.13 Improved efficiency in the forest sector is expected to enhance the supply of production inputs of sawn wood, pulpwood, and wood fuel for the manufacturing industries, that is, small sawmills, PPM, plywood factories, and for other sectors, for example, fuelwood and packaging material for the tea sector.

Experience with participation in forest management in Kenya

2.14 The management and use of forest and woodlands resources has already experienced formal and informal partnerships between the government, represented by the Forest Department (FD), communities and the private sector (box 2.2). An example is the non-resident cultivation (NRC) or shamba system (box 2.3). The abandonment of NRC in 2003 resulted in some NRC areas being left unattended, with poor plantation reforestation resulting. NRC will be reintroduced with the new Forests Act and regulation on community participation in forest management. Non-resident cultivators will be required to be members of a CFA. To succeed, the NRC system requires close supervision; evidence shows that lack of supervision may have been a problem for government reforestation compared with the private sector (FOMAWA 2006).
Box 2.2 Experience and opportunities with private sector partnerships in forestry in Kenya

The assessment in the World Bank economic and sector work of the potential for partnerships in forestry in Kenya focused on commercial production and partnerships with the private sector. Vermeulen and Walubengo (2005) identified solid wood products (sawlogs, poles, and woodcarving supplies), pulp (long and short fiber), energy (biomass for furnaces, charcoal, and domestic fuel), and other products (wattle for tannin). The aim of the partnerships is to secure a sustainable supply from either state or private farm forests to the industry while providing employment and income to local producers.

Forest industry partners comprise the following:

- **PanAfrican Paper Mill** is the only pulp mill located in western Kenya. PPM continued to obtain supply from state forest plantations during the logging ban. PPM has an input of 500,000 m³ of pulpwod, and 250,000 m³ of fuelwood after switching from oil as energy for its furnaces. PPM has a register of 2,000 small-scale farmers within 100 km of the pulp mill who can grow and deliver wood for pulp and fuel on a potential growing area of 400–500 ha. A partnership has begun where the farmers receive seedlings at subsidized prices, extension services, and assurance to market the produce. However, this arrangement does not guarantee prevailing market prices.

- **Rai Plywoods** is the only plywood factory in Kenya. Supply comes from state forest plantations, where Rai Plywoods is involved in forest management, harvesting, and transport from forest plantation to mill. Rai Plywoods has six nurseries producing 5 million seedlings annually. There are options to secure supply from farm forestry and develop partnerships with large-scale farm forestry producers and organizations of small- and medium-scale producers.

- **Sawmills** are small and were plenty. A large share of the capacity has declined as a result of the lack of legal supply during the logging ban. Sawmills purchase timber inputs from state forests or from private farm forestry, but there is also scope for small-scale operations to be linked with CFAs and the supply to larger forest industries. The local wood market and processing are key links in the value chain.

Other industries are demanding wood for fuel and packaging:

- **Kenya Tea Development Agency** (KTDA) produces over 700 million tons of green tea leaf annually. Its 54 factories’ boilers run on wood with an annual input of 615,000 m³ of fuelwood. KTDA is willing to provide subsidized seedlings and extension services but prefers an open market for fuelwood to tight contractual arrangements. KTDA has for several years tried to lease state forest land for fuelwood production. Other tea producers are James Finlay Limited and Kakuzi Limited. The tea company also produces forest products such as fuelwood and poles.

Other wood products and uses include the following:

- **Thuiya Enterprises** is a charcoal company working in collaboration with farmers to supply wood for charcoal production. Charcoal production from state forests (plantations and indigenous) and public land is currently illegal and only farm-produced charcoal is legal.

- **Kenya Vegext EPZ Limited** processes wattle bark tannin for export. The factory can produce 25 tons per day but operates below capacity. Vegext is interested in contractual arrangements with farmers for wattle production.

- **Supply of small-scale use of valuable species for wood carving** can provide livelihood options for wood carvers. The estimated annual use for wood carving is 18,000 m³.

Partnership forestry also concerns a range of non-wood forest products collected and managed by CFAs for sale or their own consumption.

*Source: Vermeulen and Walubengo 2006.*
Box 2.3. The non-resident cultivation (NRC) or shamba system for plantation establishment

NRC is a system of PFM for establishing forest plantations where farmers were allowed intercropping in new forest stands for the initial years of establishment. If done with adequate supervision, NRC can benefit all involved parties and protect the forest stand in the critical establishment phase, for example, by keeping out browsing animals and reducing competition from weeds. The system is a modified version of the Taungya system, which was introduced to Kenya in 1910, initially to convert natural forests to plantations.

The system was practiced from 1910 to 1975, and farmers were resident workers of the Forest Department. In 1975 the system was revised and the shambas were then rented from the Forest Department. The number of farmers cultivating the forest land increased and there was little understanding or incentive to protect the young forest. The system was banned in 1988 and all forest residents were evicted from the forest areas.

Despite the problems, the abandonment of the shamba system along with the subsequent reduction in Forest Department staff in 1994 led to a labor shortage and a backlog in reforestation. The shamba system was reintroduced in 1994 as NRC, that is, farmers were allowed to cultivate the land but not to take up residence. The system was abandoned again in 2003 because it created incentives for farmers to delay the tree growth to extend use of the land. Because of the logging ban, no new areas were available for reforestation.

2.15 There are few actual and documented experiences with communities in PFM (assigning user rights and management influence to forest communities) in Kenya. Apart from NRC, there are few examples of community forestry and PFM, the coastal forest in Arabuko Sokoko supported for a longer period by the US Agency for International Development being one.

2.16 The forest sector is linked with other public sectors:

- **Wildlife.** One challenge for future coordination is the joint management of forests and wildlife, and the collaboration between the KFS and the Kenya Wildlife Service (KWS) (box 2.4). About 60 percent of the gazetted forest is located in national parks and game reserves, while a large share of the wildlife is roaming outside the protected areas. The KWS and the KFS will both be semiautonomous agencies and the requirement for a mechanism for sharing of revenue and expenses between the two services from the gazetted forests may be required.

- **Water.** Management of forests is also linked to protection of water resources. Coordination is required with the Water Act (2002) over the management of forests in water catchments—CFAs and Water Resource Users Associations. There are no clear links between forest conservancy committees and planned catchment area committees under the Water Act. Institutional partnerships across sectors may be required in the management of indigenous forests in watersheds. The establishment of community watershed management associations could overlap with potential CFAs in the same area with similar objectives.
Box 2.4 Wildlife in forests, forests in game reserves

The Wildlife Conservation Act does not allow for exploitation of natural resources in national parks, while the Forests Act does allow exploitation of wildlife and other non-wood forest products in forest reserves. The wildlife policy specifies nonconsumptive use of forest resources in the national parks. The main sources of income are from tourism. There is a policy of benefit sharing with adjacent communities to alleviate their pressure on the resource. The draft Wildlife Bill (1998) and the currently discussed wildlife policy provide for the establishment of Community Wildlife Associations.

About 60 percent of the gazetted forest reserves are under some form of joint management with the KWS. A Memorandum of Understanding was established in 1991 between the KWS and the Forest Department on the joint management of forests and wildlife, including wildlife habitats outside national parks.

Conflicts have emerged, for example, around Mount Kenya, where areas have been double gazetted for protection of wildlife and forests. The conflict has been partly solved by designating areas either for the main purpose of wildlife or for forests. The establishment of the KFS opens the way for potential contracts with the KWS for management of gazetted areas and sharing of infrastructure. The contract option was not available previously because the Forest Department was a government agency.

Source: Based on draft World Bank 2007b.
3. Implementation of Participation in Forest Management

The opportunity to participate in forest management is part of the forest sector reform in Kenya. Participation in forestry is one of the tools that will help to achieve the objectives of the forest policy, specifically Cost-efficient supply of raw material from sustainable forest management, contribution to improved livelihoods, and management of the environmental services of the forests.

Approaches to participation in forest management

3.1 The importance of trees and forests is widely recognized. Closed canopy forests in Kenya are limited but woodlands are abundant. The products and services from trees and forests have an important role in the economy and for the environment. The purposes of forest management include protection and use, depending on the forest type and location:

- One of the primary functions of indigenous forests located in the five water towers is protection, particularly of watersheds, a public good. The values are external and the consumptive use of timber is limited. Regulated use of non-wood forest products (NWFPs) is feasible. Mechanisms for transfer of benefits to compensate for costs of delivering environmental services are considered.
- Farm forestry is established for commercial purposes to supply timber and fiber. Establishing tree crops on farms can alleviate pressure on natural forests in communities adjacent to indigenous forests.
- Plantations are the main producers of commercial tree crops while also serving some environmental purposes. Plantations are on public and, increasingly, private land. The commercial development of plantations is the economic backbone of the forest industry sector.
- The woodlands in the arid and semi-arid lands (ASAL) provide some wood products, mainly for energy, and minor forest products, for example, beekeeping.

3.2 The roles of different actors will have to be addressed:

- The Ministry of Environment and Natural Resources (MENR) and the Kenya Forest Service (KFS) have the mandate for regulating all forests and the KFS has responsibility for the management of all gazetted forests. The capacities, functions, and responsibilities of the KFS are to be further developed.
- Communities living adjacent to forests and using forest resources are partners in the management and protection of forests. There are options to involve forest-adjacent communities in forest management, but participatory forest management (PFM) is complex and capacity, regulation, agreements, and supervision are required.
- The private sector is a key partner for the economic development of forest resources. The forest sector is diverse and many of the previous forest enterprises have ceased to exist. Other sectors, like the tea sector, are also important wood users and potential producers of wood fuel. The World Bank Forest Strategy (World Bank 2002) notes that forests have significant commercial value and the private sector will often be a principal financial actor in forest management and wood production.
3.3 It is recommend to develop and test feasible models and procedures for participation in forest management. This would build on the available experience and the opportunities provided under the new Forests Act, the forest policy, and the forest sector reform. In addition, it would take into account the objectives of the forest policy and capacity of the involved partners.

The key areas expected to yield significant results comprise the following:

- PFM with community forest associations (CFAs) in indigenous forests, woodlands, and plantations including non-resident cultivation (NRC) of industrial forest plantations;
- Concession forest management agreements for state forest plantations;
- Joint management agreements, mainly for tourism opportunities, in state forests;
- Farm forestry development, for example, planning of supply, extension services, and local organization of tree growers;
- Development of forest enterprises and financing opportunities, in charcoal production and processed Industrial Round Wood (IRW), for example

Participatory forest management

3.4 PFM will be implemented through agreements between CFAs and the KFS regarding the management and use of state indigenous and plantation forests. The approach can also be extended to woodlands on trust land with agreements between CFAs and local authorities. The purpose is to develop community-based management and use of forest resources and to share management responsibilities.

3.5 KFS is to develop and test procedures and models for a PFM agreement for CFAs (Forest Rules on Forest Utilization and Management, draft January 26, 2007). Guidelines for PFM have already been drafted and piloting is ongoing.

3.6 Definitions of the mechanism for cost and benefit sharing as well as the management requirements of the CFA and responsibilities of the KFS are critical. Revenue potential other than for timber may be limited in indigenous forests and plantations. USAID is piloting the development of cost- and benefit-sharing mechanisms in two CFAs and these results will be critical for future management agreements. Models for CFA business plans are to be developed.

3.7 The KFS has identified five pilot CFAs (Arabuko Sokoke, Ngare-Ndare, Eburu, Mukugodo, and Rumuruti Forests). However, others could be included to avoid further delaying CFAs that might be ready. Efforts should be made to focus on defined cluster areas to pilot PFM with CFAs, and at least one pilot CFA management agreement should be undertaken in each of the 11 forest conservancies. Monitoring will be implemented according to indicators and performance criteria in forest management agreements and CFA management plans and will include off-take of resources, management interventions, and financial management.

3.8 The organization of CFAs should be supported and capacity developed with assistance from nongovernmental organizations (NGOs), both local organizations and a national apex organization. The National Alliance of Community Forestry Associations (NACOFA) has already been established with support from the Forest Action Network and the Kenya Forests Working Group. NACOFA can be an important partner for the KFS in organizing and communicating with CFAs.

3.9 Institutional capacity needs to be built. The KFS’ capacity to develop and regulate management agreements for joint forest management with CFAs must be assessed and built. A
number of development partners and NGOs are active and harmonization and coordination of their efforts are required. Defining the role of the KFS as regulator and supervisor in PFM could be done in collaboration with NACOFA.

**Long-term concessions of plantation management**

3.10 **Agreements will be made through tender of long-term concession logging, management, and reforestation of state plantation forests between the KFS and private sector operators.** In addition, the KFS together with the forest industry is to develop model approaches to concession management. Pilot testing could consider options and conditions for community involvement locally. In order to become operational, appraisals of cost and benefit sharing, including an assessment of government revenue potential for concessions, must be undertaken to project income and set realistic reserve prices.

3.11 **Taking into account the past experience, there is a need of addressing challenges in this particular partnership.** Before entering into a long-term agreement the following issues need to be deal with:

- Concession management plans and business plans must be developed, identifying obligations for management, protection, and reforestation and management costs thereof.
- Monitoring will be performed according to indicators and performance criteria in the concession management plan, including monitoring of off-take of resources, management interventions, and financial flow.
- Although land concessions on forest land for private investment in forest plantation are in demand by the forest industry, the practice is discouraged by the KFS because the leases may be handled by the Commissioner of Lands, and risks of conversion into other uses are high.\(^{14}\)
- Models for implementation of joint concessions involving both local sawmills and CFAs must be developed. Communities may be involved in NRC, production of seedlings, and forest protection. KFS’ capacity to manage forest concessions must be assessed and developed.
- An alternative model for the KFS is to tender a contract for forest management and logging but to keep the title for timber. Production can then be sorted and auctioned in smaller and specialized lots to involve more potential buyers and seek maximum revenue.
- KFS’s role as regulator and supervisor in concession forestry must be defined.

**Farm forestry**

3.12 **Farm forestry will play a role in the development of wood supply and income opportunities from investments in trees on private farm land.** Farm forestry differs from PFM because the decision maker is a family rather than a group. Private producers and forest industries demanding IRW and other sectors demanding fuelwood should develop model agreements. MENR and KFS policy on support to farm forestry must be developed and the resource potential must be assessed. Extension models for farm forestry must be devised. In addition, afforestation of wood lots and plantations in areas where land is available on farms should be supported, and plans developed for integrated agro-forestry where agricultural land is limited. This should also assist in the development of the regulatory framework for sustainable production and incentives for farm

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14. The option for land leases was included in the Forests Bill (2005) but removed in the Forests Act (2005). There were concerns in the Parliament that land leases could result in land-use conversion.
forestry, including the provision of support for the development of farm forestry producer organizations for marketing and own extension.

3.13 **The role of the KFS as a regulator and supervisor in farm forestry must be defined.** Partnerships between the private sector and communities or farm forestry will occur when market conditions are appropriate and the partners are motivated. The role of the KFS is to simplify the regulation of resource use, transportation, and marketing without compromising the objectives of the forest policy.

**Development of the forest enterprise industry and forest investments**

3.14 **Partnership agreements must be devised to develop processing** of wood products, charcoal, and NWFP including support to community-based processing and marketing. As a platform the proposal for the establishment of a forest industry forum is made (World Bank 2007b) to improve industry organization, performance, and dialogue with the KFS. Organizations such as the Timber Manufacturers Association already exist, but none of these are represented on the KFS Board.

3.15 **Scoping and facilitation of investment opportunities could be a mandate for the KFS information center.** The KFS information center (supported by the NRM Project) may focus on business opportunities for forest enterprises and prospective investors, plantations, forest roads, tourism (joint management), and processing (the KFS owns three sawmills).

3.16 **Certification of third parties for forest management is an option** when preparing concession management agreements and plans with community involvement and sustainable production. Because most timber is used domestically, whether independent certification of a production line can add much value to timber is questionable.

3.17 **Financing opportunities may occur through involvement of institutional investors** seeking secure long-term investments, the potential for hedging funds with forests (less vulnerable to market variations because cost of holding is low), and with optional inclusion in an “environment” portfolio. Pursuit of these opportunities will require a dedicated investment manager with knowledge of forest investments.

3.18 **Payment for environmental services may expand the line of marketable services** from forests, for example, watershed protection and carbon sequestration. The feasibility of payment arrangements must be further assessed before a funding flow can be made. Development of niche market opportunities for NWFP may require general investment and marketing assistance.

3.19 **Legalizing charcoal production and trade presents an opportunity** to tap into an existing process with a value equal to tea production and revenue potential for the KFS equal to timber production. Most of the value added is in charcoal trade rather than production. A clearer mandate is now with the KFS to regulate and secure revenue from charcoal, including the mandate to ensure that the sources of wood used for charcoal are sustainable.

3.20 **The role of the KFS in participation and partnerships in forestry needs to be further clarified** as follows:

- Forest management agreements, including cost- and benefit-sharing mechanisms and revenue potential from outsourcing the management of forest stumpage and land in gazetted forests;
- Regulatory and facilitating functions in forest management, licenses, and trade in forest products and services;
- Technical services provided (if any) for forest management planning, reforestation, logging operations, and marketing;
The MENR and the KFS developing forest policy and regulations to control and enhance opportunities for partnerships

3.21 The emphasis is on “loose” rather than “formal” partnerships with industry

- Horizontal organization of producers (CFAs, farm forest producers, and charcoal producers, for instance) is recommended because it supports building equal partnerships in the market. Producer organizations may be involved in marketing, policy influence (through national apex organizations), and sourcing own extension services.
- Vertical organization such as outgrower schemes with delivery contracts are not directly recommended because these reduce opportunities for farmers and bypass market links. These agreements may be optional locally or when required for communities to investment in farm forestry.

Monitoring and evaluation

3.22 The purpose of monitoring and evaluation of participatory forestry is to ensure achievement of the objectives of the Forests Act and forest policy. Functions are divided such that the MENR will monitor and the KFS will deliver on results.

The baseline for monitoring and evaluation in the forest sector includes the following:

- **The forest sector plan** is an updated version of the Kenya Forestry Master Plan (KFMP) from 1994.
- **National standards for sustainable forest management** for both concession forestry and PFM will be covered by future subsidiary legislation. A future upper benchmark may be a national Forest Management and Certification Standard, which is in progress for Kenya.
- **Management agreements and management plans** are used as reference for reporting and assessment of performance. Management agreements subject to management plans shall include indicators for removal of resources, management obligations, and investments. Structured reporting will be undertaken by concession holders and CFAs and monitoring will be undertaken by the KFS.
- **KFS strategic plan and performance indicators** are to be prepared by July 2007. The KFS strategic plan will form the basis for assessing the operations and achievements of the KFS.

3.23 The following evaluation and reporting mechanisms will be used:

- Delivery against targets in the forest policy and the KFS strategic plan (to be developed) will be measured.
- Regular forest resource assessments will occur, primarily focusing on the most valuable resources, for example, initial attention to plantation forests for concessions and farm forestry resources. The forest resource assessments will contribute to regular updates of the KFMP.
- Annual assessments will be made of forest management agreements based on mandatory reporting by partners on areas and resources exploited, and deviations from management plans. The costs of management reporting are the responsibility of the holder of the management agreement and the KFS can charge for the costs of control.
- An annual report will be prepared by the KFS including revenue captured compared to revenue budgeted. Annual assessments will be made of service delivery by KFS to concession holders, CFAs, forest industry, and farm forestry and the costs thereof.
- Regular assessment and documentation of lessons learned and outcome for the economy, for livelihoods, and for development targets, including reduction of poverty, will be made.
Financing participation and partnerships in forestry

3.24 **The financial viability of participation in sustainable forest management is a precondition** for the development of partnership arrangements and motivation for the involved partners. The incentives (monetary and non-monetary) for participants in forest management should at least equal the return from a perceived (and legal) alternative. The main revenue potential is from the commercialization of state forest plantations. The potential revenue generated for concession holders and the KFS is described in annex 7. The revenue for communities from PFM arrangements may not be from the sale of timber but mainly from improved user rights and access to forest products for own consumption and perhaps employment. The forest sector revenue generated from participation in forest management will cover (a) management and operating costs including investments; (b) revenue sharing with partners (sharing of forest rent), including operating margin for forest managers and industry, and income for CFAs; and (c) public revenue (concession royalty and fees, and production taxes).\(^\text{15}\)

3.25 **There is an initial financing shortfall for KFS.** The SEA (World Bank 2007b) identified a financing gap for the KFS for implementation of forest sector reform but it is expected to be covered after a few years when revenues are generated from the plantation forest concessions. The KFS is responsible for collecting all revenue and charges due the government for forest resources, produce, and services (Forests Act, section 5.j). The SEA estimates that the KFS budget after initial investments will balance at K Sh 3 billion annually. The KFS is planning on an initial budget of K Sh 3.5 billion with approximately K Sh 2.2 billion for staff and K Sh 1.2 billion for programs. Annual revenue is initially expected to be K Sh 0.7 billion but is expected to rise to K Sh 2.0 billion. The revenue expectations are uncertain and may be revisited.

3.26 **The budget gap will be covered by the government and development partners.** The KFS argues for a continued budget from the government for the continued provision of public goods, that is, extension services and forest conservation. Over the next five years, KFS revenue should increase and the government budget decrease until a stable balance is reached.

3.27 **Immediate income generation is feasible but not sustainable.** The uneven age-class structure of the plantations and sensitivity to market variations makes immediate income feasible but does not secure a sustainable level. The KFS may need to develop investments to level out variations in available stumpage, or concession could be charged an even area-based fee. The budget assessment is subject to a KFS strategic plan and targets, a KFS business plan, and full oversight of the KFS responsibilities. These are forthcoming.

3.28 **Participation in forest management means that the partners (forest industry and CFAs) will have to earn their part of the revenue.** The KFS will have to share user rights as well as revenue. Investments from the forest industry, communities, or other partners will have to be financially attractive and earn returns to the investor before the KFS can gain any revenue share. The transaction costs associated with achieving participation and partnerships in forestry may justify temporary external donor assistance. In the long run, the financial flows and incentives have

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\(^\text{15}\) A challenge will be to implement the provision for payment for environmental services, for example, water resource conservation and carbon sequestration. If possible to collect, the revenue will then have to be plowed into forest management to cover the costs of producing the services. It is uncertain whether the environmental services can also generate an economic rent, that is, whether the purchaser will be charged in excess of the “production costs” of the environmental services.
to be sustainable. There will also be transaction costs for monitoring and enforcing the management agreements for participation in forest management. These costs could be internalized in the agreements as part of the revenue-sharing formula.

3.29 **The KFS can be paid for provision of regulatory and technical services by users.** This requires that a service be delivered, and may only cover the costs of provision, although extension also has elements of a public service. Some technical services may be competitive because these may also be purchased from private providers. There are efficiency gains from outsourcing management and involving communities that could add to the revenue to be shared. As a result, the relative share for the KFS of the forest sector revenue might decrease but the absolute revenue may increase.
<table>
<thead>
<tr>
<th>Stakeholders and institutions</th>
<th>Roles and functions</th>
<th>Economic incentives</th>
<th>Financing source and mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers (individuals)</td>
<td>Developers and users of agricultural land. Dependent on water supply. Investors in farm forestry. Users of forests for grazing.</td>
<td>May exert pressure at the forest frontier because of incentives for land use conversion. May not be aware of economic contributions from forests to agriculture.</td>
<td>Incentives not to expand use of land but rather to engage in more intensified use of existing land as an off-set, for example, through technology transfer. Financing of trees on farms.</td>
</tr>
<tr>
<td>Local communities</td>
<td>Users of the forests for timber, fuel, and NWFPs. Use forests for cultural purposes. Involved in NRC.</td>
<td>The goods and services of the forest provide supplementary income and nutrients. The access to resources is a buffer for income or output shocks in agriculture.</td>
<td>Compensation for loss of opportunities by investment in alternative income sources. Sustainable income from forest management agreements.</td>
</tr>
<tr>
<td>Stakeholders external to the project locally and nationally</td>
<td>External services such as watershed protection, climate change, and development of pharmaceutical drugs, or indirectly as well-being and existence values from nature protection, provide on- and off-site local and national costs and benefits.</td>
<td>External impacts to be compensated by the beneficiaries to be taken into account. In small communities there may be some self-regulation among stakeholders. Other options are compensation by the beneficiaries for at least the “production” costs, for example, costs of mitigating carbon emissions or watershed protection.</td>
<td>An internal transfer mechanism may shift incentives from gainers from external impacts (for example, downstream agriculture and hydropower) to the producers (for example, upstream managers of watersheds). Grants from bilateral assistance; voluntary contributions and NGOs; trade in carbon off-sets; the coverage of identified incremental costs (by the Global Environment Facility); an internal Forest Conservation and Management Fund is established in the KFS.</td>
</tr>
<tr>
<td>Forest management sector</td>
<td>Supply technology, employment, and investments to rural areas. Produce raw materials (fiber and energy) for the economy.</td>
<td>Governance, regulation, and monitoring required to keep the industry from rent seeking and illegal logging.</td>
<td>Private sector investment programs subsidized by the government, investment guarantees, access to raw material and land, or tax breaks.</td>
</tr>
<tr>
<td>Forest industry (processing sector) can also include forest management</td>
<td>Investment in efficiency in wood processing including technology transfer and testing. Employment opportunities and demand for local services.</td>
<td>A business environment that enables long-term investments (political and economic stability paired with a raw material supply).</td>
<td>Private sector investment programs subsidized by the government; investment guarantees.</td>
</tr>
<tr>
<td>Forest departments at the provincial and national level</td>
<td>Role as the forest policy and management executive branch of the government. Improved regulation of the forest sector.</td>
<td>Income potential from efficiency gains in forest management, improved efficiency in the forest industry, and from marketing other products than wood.</td>
<td>Implementing agency and often the administrator of disbursement of available funding to the sector.</td>
</tr>
<tr>
<td>National and institutional financing institutions</td>
<td>Provide financing for profitable investments in the private sector.</td>
<td>Need for better understanding of the financing profile and asset value of forest investments.</td>
<td>Supplier of private sector equity, institutional funds, or national intermediaries for international funding.</td>
</tr>
<tr>
<td>Government</td>
<td>Forest policy mandate is with the MENR. Possibility to design national forest policy programs and to coordinate forest with other sectors and with macroeconomic development.</td>
<td>Contribution of the forest sector to the national economy.</td>
<td>The government decides on budget allocation. Government has the choice to retain forest revenues to forest management and investments. The government is the counterpart for sector loans and grants.</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.
Development Partner collaboration and harmonization on partnership forestry

3.30 The ongoing reform process is expected to bring about change, an assumptions supported by several Development Partners through their re-engagement. Development partners support activities in (a) forest sector reform (USAID, government of Finland, and World Bank), (b) PFM (USAID, World Bank, African Development Bank, Japan International Cooperation Agency (JICA), and the Government of Finland), (c) indigenous forest management in the water towers (African Development Bank and World Bank), and (d) collaboration of the KFS with forest industry and concession management (World Bank).

3.31 A donor group on the forest sector is active (a summary of donor activities is shown in table 3.3). A harmonized sector plan is needed for donor support provided to the forest sector. This may emerge with the forest sector program and a strategic plan for the KFS.
### Table 3.2 Donor-funded projects in the Kenya forest sector related to partnerships

<table>
<thead>
<tr>
<th>Donor</th>
<th>Project</th>
<th>Contents</th>
<th>Implementing organization</th>
<th>Issues related to partnerships in forest management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>“Miti Mingi, Maisha Bora” (Support to Forest Sector Reform in Kenya) 18-month inception phase (2007–08)</td>
<td>Support to forest sector reforms and information (baseline assessments, monitoring and evaluation), and identification of ASAL PFM activities</td>
<td>MENR and KFS. Consultancy company (tender) and KFS. In tender.</td>
<td>Identification of community-based forest management in ASAL.</td>
</tr>
<tr>
<td>AfDB</td>
<td>Green Zone Project (2006–11). Forest component loan: K Sh 1.7 billion (US$24 million)</td>
<td>Focus on forest activities in the “green zone” of the five water towers</td>
<td>KFS and Nyayo Tea Zone Development Cooperation</td>
<td>Target of 48,000 ha of PFM in indigenous forest.</td>
</tr>
<tr>
<td>FAO</td>
<td>National Forest Program Facility; FAO-Netherlands Partnership Program (FNPP)</td>
<td>Assistance to participation in forest management.</td>
<td>FAO and the KFS</td>
<td>Preparation of forest rules on forest management agreements; development of PFM guidelines; testing of PFM guideline in three sites (during 2007); review of regional experience with outgrower schemes</td>
</tr>
<tr>
<td>World Bank</td>
<td>Natural Resource Management project (2007–12). Forest component credit about US$20 million.</td>
<td>Forest sector institutional reforms, community participation, and benefit sharing. Community and private sector investment in commercial forestry.</td>
<td>MENR and the KFS (for forest component)</td>
<td>Initial focus on Kakamega, Mt. Elgon, the Aberdares, and Upper Tana with emphasis on PFM; establishment of the KFS information center to involve communities and the private sector in development and management of production forests.</td>
</tr>
</tbody>
</table>

*Source:* Authors’ compilation.

*Note:* Other donor-funded support activities include activities supported by the EU and by UNEP, UNDP, IFAD, and ICRAF with support from various donors.
Gap analysis and identified risks

3.32 Gaps in achieving the forest sector reform objectives for partnerships in forest management are outlined below:

- Access to finance for private and public afforestation and other rehabilitation of the forest sector will be difficult to obtain. There is no long-term credit in Kenya except for housing. Forest industry and logging operations have little possibility to obtain finance from banks because of previous loan defaults by operators when the logging ban was suddenly introduced.

- Uncontested assumptions about possible revenue for the KFS may make the option for management agreements unattractive if these agreements make no allowances for revenue for the partners as well. The KFS is focused on future revenue generation but may be overlooking that the CFAs and forest industry are also expecting an income.

- The Forests Act provides opportunities for change but does not mandate it, that is, there are no required actions according to the forest policy or forest regulation. No timetables or performance criteria for participation in forest management have been established.

- Control measures and capacity for regulation of sustainable resource use are inadequate, but the management agreements can be used for monitoring.

- Low capacity for PFM exists among CFAs with possible management agreements. The factors required for successful PFM are not yet identified or addressed in PFM procedures.

- Development of experience and procedures for implementation of payment for environmental services will require some expense. The options for payment for environmental services may require that the system for sustainable management of the forest sector in Kenya be in place, that is, delivery of environmental services is subject to operational and sustainable management of forests.

3.34 There are several main risks of partnership forestry under the new Forests Act. There is a risk that conflict will emerge if only government and industry benefit from participation and partnership forestry while the communities do not gain or become involved in resource management. The KFS is under more pressure to generate revenue than to facilitate community and forest industry involvement in forest management. The commitment and future role of the KFS is uncertain. The KFS has been influenced by political patronage and pressure that may carry on despite a commitment to transparency in allocation and management of forest resources. The reform process and the operations of the KFS Board were delayed as a result of expectations building up before the December 2007 general elections in Kenya. A political change could also bring a change in the KFS Board. There are risks of local elite capture and exclusion of poor people in decision making and benefit sharing.

3.35 The success of participation in sustainable forest management is subject to sufficient motivation and incentives for the involved partners. The constraints to partnership forestry are addressed by the rules and regulation established by the government, assessments of the feasibility of proposed partnership forestry agreements, good practice and guidelines, the content and enforcement of management agreements, and transparency in the delegation of rights from the government to other stakeholders.

3.36 The conditions that will enable participation in forest management are varied. Revenue and other benefits generated must be sufficient as incentives for the involved partners. The benefit- and cost-sharing mechanisms must be transparent and fair. Partners must be equals in the partnership. Local CFAs and farm forest producers may become more organized and strengthen
their positions in partnerships with forest industries and the government. The formation of a district level and national apex organization for CFAs; a farm forestry association; a forest industry forum; and associations of charcoal producers, transporters, and traders will create a stronger basis for partnership collaboration. Participation and partnerships in forest management must be built on market opportunities. Contractual agreements such as outgrower schemes between industry and suppliers for longer-term investments are not immediately recommended because of the possibility of bypassing the functions of the market, resulting in inefficiencies. Resources available through investments and external assistance for the transaction costs of establishing partnership forestry agreements must be adequate. Some certainty about the value of the forest resource and the security of investments is needed. Rules and regulations or lack thereof may discourage private sector involvement in forest management. Capacity for forest management at the community level must be available.

3.37 There are several other options for participatory forestry, although these are not addressed in the Forest Policy Note as an initial priority. These options include the following:

- **Payment for environmental services.** This topic will be further developed in the NRM project, but initial pilot schemes among several donors, including the World Bank, on water resources and carbon may initially have to be developed and tested.

- **Tourism facilities.** These are options that can be initiated provided procedures for contracting and business models are developed. This will be an issue to be developed as part of the potential investment portfolio for the forest sector.

- **Dryland forests.** The dryland areas are outside the main scope of the NRM project but are addressed by the activities supported through the World Bank Arid Lands Resource Management Project as well as the support provided by Finland and JICA to the forest sector.

- **Non-timber forest products.** The potential of these NWFPs can be developed as part of the CFA forest management agreements. For small-scale enterprises, basic business models can be developed but further feasibility assessments of market potential are required.

- **New forest products.** The potential for new products, such as bamboo, is a possibility for testing but it is not a specific topic for participation in forest management.

**Proposed actions for NRM project**

3.38 **The World Bank’s Natural Resource Management (NRM) Project in Kenya includes water resource management, catchment management, and management of forest resources.** The NRM project has a total budget of US$77.5 million and it is funded as a Specific Investment Loan with a total IDA credit of US$68.5 million, of which US$21.5 million is allocated for the component on management of forest resources.

3.39 **The NRM project will focus on the watersheds of the Tana and Nzoia Rivers.** Project investment will focus on (a) the upper catchment of the Tana River in Eastern Aberdares and Mt. Kenya, and (b) the Kakamega forest and Mt. Elgon river catchments of the Nzoia River.

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Participation in Sustainable Forest Management
Forest Policy Note, Kenya

The second component of the NRM project concerns management of forest resources and it has three subcomponents:

Forest sector institutional reforms. The assistance is for reforms to transform the Forest Department into the KFS. The subcomponent will, among other things, assist to enhance forest governance and improve revenue capture. It will also assist a phased forest resource assessment. Support can be provided to forest policy development and implementation by the MENR.

Enabling community participation and benefit sharing. The Forests Act promotes stakeholder participation, but it does not clearly identify rights and responsibilities of concerned parties. Assistance will be provided to identify and prioritize an array of participation models to implement the legislative framework and improve benefit sharing. Initially the focus is on Kakamega, Mt. Elgon, the Aberdares, and Upper Tana. The support will emphasize participatory forest management. The third component will finance investments in livelihood-enhancing community projects in micro watersheds of the Upper Tana catchment.

Community and private sector investment in commercial forestry. The Forests Act is aiming at reviving the forest industries in Kenya and at developing links with forest products processing, harvesting, and management to generate increased rural income. Assistance will be provided for institutional support to engage communities and the private sector in the development and management of production forestry. It will be achieved by establishing and operating the KFS information center. Funding is provided to ensure transparent systems for concession allocation and other management agreements. The funding will also be used to motivate and manage private investments in sustainable forest management.

3.40 The KFS will provide technical leadership of the component through the appointment of component leaders for the three subcomponents. In the areas of intervention the KFS staff will work closely with forest staff at the Forest Conservancy. At the community level, the activities are facilitated through CFAs. Through the formation of bilateral and tripartite partnerships, transparency and accountability are expected to improve management of the forest sector.

The remainder of this section provides an outline of initial actions for collaboration between the KFS and the World Bank within the NRM project.

3.41 NRM project, subcomponent 2.1

- Inventory of commercial and vulnerable forest resources. A rapid resource inventory will be made of economic resources and zoning for priority uses including IRW production, fuelwood supply, and watershed services. Information is critical for decision making and for deciding on suitability of areas for various sources of partnership forestry. Initial focus could be on potentially vulnerable sites (indigenous forests) and economic resources (plantations).

- Improved KFS revenue assessment and collection. An assessment must be made of the feasibility of revenue collection from partnership forests. Appropriate cost- and benefit-sharing mechanisms must be developed for participation in concessions, timber licenses, and joint forest management. Support must be provided for capacity development of economic appraisal and feasibility assessments in the KFS.
3.42 NRM project, subcomponent 2.2

- Development of standards for joint forest management. Approaches and benefit- and cost-sharing mechanism for CFAs in the target areas of the NRM project must be devised. Model forest management agreements must be developed.

- Piloting models for joint industry and CFA concessions. The purpose of pilots is to develop joint management models with industry and communities in relevant plantation sites. Communities are engaged in NRC, production of seedlings, planting, and other forest employment, and protection (fire and theft).

- Fuelwood production. Feasibility assessments must be undertaken jointly with the KFS and the tea industry and other wood fuel–using industries on the production of sustainable fuelwood in plantations.

- Farm forestry. Rapid inventory must be conducted of farm forestry resources, constraints, and potential production. Information for the planning of forest sector supply and demand must be gathered. Forest producers should be encouraged to organize.

3.43 NRM project, subcomponent 2.3

- Forest industry forum functional. Resources should be allocated for policy-relevant mini-surveys and fact-finding reports in collaboration with forest industry associations, for example, a survey on available sawmilling capacity, efficiency, investment requirements, and location of industry development compared with future IRW supply.

- Facilitate information on financing opportunities for forest enterprises. Develop investment opportunity portfolio for forest-based enterprises. Initiate follow-up on pilots on payments for environmental services. Identify potential concession areas, and prepare and notify concession tenders. One-stop investment information could be developed, for example, Web based.

3.44 Follow-up on the recommendations of the Forest Policy Note and any other activity related to the note and the implementation of the NRM project is subject to final decision, approval, and action by the KFS.

Table 3.3 further elaborates upon focus areas.
<table>
<thead>
<tr>
<th><strong>Plantation forestry management</strong></th>
<th><strong>Economics</strong></th>
<th><strong>Impacts</strong></th>
<th><strong>Risks</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop and test standards for management and marketing of plantation resources—concession, timber license, log and stumpage auctions, land lease.</td>
<td>• Management efficiency gains and utilization of an economic plantation resource.</td>
<td>• Efficiency gains in forest management.</td>
<td>• Exclusion of full costs and operating margin for private operator as well as for the KFS in feasibility assessment.</td>
</tr>
<tr>
<td>• Forest plantation inventory and use classification for various options (classes A, B, and C)</td>
<td>• Appraisal of revenue potential from plantations.</td>
<td>• Information on supply of IRW to forest industry and demand for IRW.</td>
<td>• Forest industry has little interest in forest management.</td>
</tr>
<tr>
<td>• Pilot concession with joint small or medium sawmills and CFAs. Integrate NRC in forest concession.</td>
<td>• Revenue potential for the KFS and abandoning below-cost timber sales.</td>
<td>• Management of plantation resources and reforestation.</td>
<td>• Uncertain inventory makes allocation and reserve price assessment uncertain.</td>
</tr>
<tr>
<td></td>
<td>• Wider emphasis than just concession management, for example, includes timber license and auction systems.</td>
<td>• Long-term rights to concession or timber licenses can be used as collateral for investment credits.</td>
<td>• Lifting of the logging ban could result in uncontrolled logging.</td>
</tr>
<tr>
<td></td>
<td>• Further capacity for economic analysis in the KFS.</td>
<td>• Revenue potential for the KFS.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Joint forest management of indigenous forests by communities</strong></th>
<th><strong>Economics</strong></th>
<th><strong>Impacts</strong></th>
<th><strong>Risks</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pilot watershed management with CFAs and Water Resource User Associations in Upper Tana.</td>
<td>• Delivery of water protection services and rehabilitation of indigenous forests.</td>
<td>• Communities involved in management and protection of indigenous forest resources.</td>
<td>• Uncertainty about CFA capacity for management of forests.</td>
</tr>
<tr>
<td>• Contribute to development of standards for joint forest management by CFAs in indigenous forests.</td>
<td>• CFAs as producers of services for reforestation and forest protection services.</td>
<td>• With available incentives environmental services are produced in forests, for example, catchment protection.</td>
<td>• Insufficient revenue potential for CFAs in indigenous forest management.</td>
</tr>
<tr>
<td>• Develop and implement approaches to CFA-led reforestation and rehabilitation of indigenous forests.</td>
<td>• Cost- and benefit-sharing mechanism for joint forest management in indigenous forests. Optional combination with plantation forests.</td>
<td>• Potential downstream impacts on river flows, agriculture, and livelihoods from protection of water resources.</td>
<td>• Communities engage in unregulated timber harvest outside an agreed on forest management plan.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Low scope for low-cost replication if costs of pilots are excessive.</td>
</tr>
<tr>
<td>Farm forestry</td>
<td>Actions</td>
<td>Economics</td>
<td>Impacts</td>
</tr>
<tr>
<td>---------------</td>
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</tr>
<tr>
<td></td>
<td>• Inventory of farm forestry resources, for example, based on issued licenses.</td>
<td>• Provide incentives for local organization of farm forestry producers, for example, for marketing and extension services.</td>
<td>• Complementary supply of IRW and fuelwood from small-scale producers.</td>
</tr>
<tr>
<td></td>
<td>• Develop a national farm forestry production and marketing strategy and policy.</td>
<td>• Facilitate credit availability for financing of farm forestry.</td>
<td>• Collaboration in local producer associations can improve marketing and quality of extension services.</td>
</tr>
<tr>
<td></td>
<td>• Support establishment of local farm forestry producers associations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forest industry development</th>
<th>Actions</th>
<th>Economics</th>
<th>Impacts</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Develop a forestry industry forum. Dialogue with industry on regulation of forest sector.</td>
<td>• KFS facilitation of information on investment opportunities.</td>
<td>• Revitalization of part of the previous sawmilling industry contribution to added value in the forest value chain and local employment.</td>
<td>• There are different objectives, sizes of companies, and influence among private sector operators. There may not be a common voice of the forest industry.</td>
</tr>
<tr>
<td></td>
<td>• Mapping of sawmilling capacity with industry and compare with resource availability.</td>
<td>• Improve production efficiency and markets while reducing transaction costs.</td>
<td>• Ensuring that development of the forest industry is located where the inventory predicts future availability of IRW.</td>
<td>• Limited access to credit for investments in sawmills and forest operations without secured sources of supply.</td>
</tr>
<tr>
<td></td>
<td>• Wood fuel plantations as one focus area, for example, with tea producers.</td>
<td>• Facilitate financing, for example, identify opportunities for third-party investments. Investment interests from the tea industry.</td>
<td>• New forest-based enterprises emerging.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Value chain of wood products and standards for costs of production and most profitable use.</td>
<td>• Support development of forest management professionals and service providers.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charcoal production and marketing</th>
<th>Actions</th>
<th>Economics</th>
<th>Impacts</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Pilot one or two cases of sustainable charcoal production.</td>
<td>• Potential substantial revenue source from legalized and sustainable charcoal production.</td>
<td>• Potential in the ASAL for enhanced income generation.</td>
<td>• Those currently benefiting from illegal charcoal trade may maintain an influence on production and trade.</td>
</tr>
<tr>
<td></td>
<td>• Value chain analysis of charcoal production and trade.</td>
<td>• Economic development potential for ASAL.</td>
<td>• Keeping grazing land clear of bush, which is a service valued by cattle ranchers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The policy for and regulation of charcoal in the NRM project and the implementation in, for example, the World Bank Arid Lands Resource Management Project.</td>
<td>• Improved efficiency of kilns due to legalized production and investment in production.</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Authors’ compilation.  Note: Proposed activities supported by the forest component in the World Bank NRM project.*
References and Other Resources


Forestry and Beekeeping Division. 2006. “Participatory Forest Management in Tanzania, Facts and Figures.” Leaflet produced by Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar Es Salaam, July.


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Annexes
Annex 1: Plantation area in 1996: Area according to year established

Source: Data compiled from Price Waterhouse (1997).
Annex 2: Economic considerations of fuelwood production

The price of charcoal at the producer is about K Sh 70–100 per 40-kg bag, or 1,750–2,500 K Sh/ton. The price when it reaches the final user is K Sh 20,000/ton (ESD 2005). Because the price of timber is not included in the calculation, the price of charcoal is assumed to equal the cost of time used to collect wood, kiln establishment, actual burning, and earnings to the charcoal producer. With efficiency of 10 percent (common for most earth kilns [EDS 2005]), wood consumption is 10 tons per ton of charcoal. The value of a ton of firewood is thus K Sh 175–250/ton. An example of how to calculate the cost of fuelwood production is provided in table A2.1.

The Kenya Tea Development Agency in the Meru district purchases a stack of firewood (4 ft x 4 ft x 4 ft) for K Sh 120. The tea factory is costing its own labor and transport to the tea factory at K Sh 300/stack (Carsan and Holding 2006). Assuming wood density of 0.5 ton/m³ and fixed volume of a stack of 40 percent, the stack would weigh about 350 kg. The value of a ton of fuelwood sold at the farm gate is thus about K Sh 340/ton. The farmers travel to the factory (on average 50 km) to collect their payment (Carsan and Holding 2006), which is an additional cost. Locally, a farmer can sell a smaller stack (4 ft x 3 ft x 3 ft) for K Sh 200 (Carsan and Holding 2006). This stack could weigh about 195 kg, so the price is about K Sh 1,025/ton.

If there is local demand for fuelwood, as from tea factories, the income may be higher from selling fuelwood than the alternative of making charcoal. However, the supply of fuelwood may not be sustainable, and there are sources who note that Meru is being cleared for fuelwood as a result of high demand from local tea factories.

Table A2.1 Cost of producing fuelwood in a short rotation fuelwood plantation

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>Cost (K Sh/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land preparation and clearing</td>
<td>10,000</td>
</tr>
<tr>
<td>2,000 plants/ha(a): planting and plant holes 12 K Sh</td>
<td>24,000</td>
</tr>
<tr>
<td>Stand tending at 100 person days/ha x 100 K Sh/day for three years</td>
<td>30,000</td>
</tr>
<tr>
<td><strong>Total investment cost (establishment)</strong></td>
<td>64,000</td>
</tr>
<tr>
<td>Harvest in year 8 of 150 m³/ha x 300 K Sh/m³</td>
<td>45,000</td>
</tr>
<tr>
<td><strong>Total production cost (sum) not including land rent</strong></td>
<td>109,000</td>
</tr>
<tr>
<td>Land rent 5,000 K Sh/ha/year for 8 years (cost of land as a production factor)</td>
<td>40,000</td>
</tr>
<tr>
<td><strong>Total production cost (sum) including land rent (farm gate)</strong></td>
<td>145,000</td>
</tr>
</tbody>
</table>

*Source:* Authors.

*Note:* The factors and costs used here are examples for further consideration. Suggestions for improvements are welcome. The calculation would also apply to pulpwood.

a. Normal plantation establishment for timber is spaced at 2.5 m x 2.5 m or 1,600 seedlings/ha. With spacing 2.25 m x 2.25 m there will be 2,000 plants/ha with potentially higher production.

**Replacement cost:** Investment costs for production (427 K Sh/m³) = 854 K Sh/ton.

**Production cost:** Production cost (without land rent) (727 K Sh/m³) = 1,454 K Sh/ton.

**Total production cost:** Production cost and land rent at farm gate (967 K Sh/m³) = 1,934 K Sh/ton.

The above costs are at farm gate. The transportation costs are K Sh 3/ton/km when transportation is contracted (according to KTDA).
The findings include the following:

- Plantations for fuelwood are unlikely to be able to profitably compete with a “free” resource collected in the forests and woodlands.
- The opportunity costs of collected fuelwood increase if it becomes scarce (more time used for collection) or if collection is regulated and access is restricted.

When available sources of fuelwood become scarce and the time used for collection increases, fuelwood plantations may become profitable. Production from fuelwood plantations can be a more secure and sustainable supply.

**Application**: The Forests Act\(^{17}\) applies to all forests and woodlands on state, local authority, and private land (section 2).

**Kenya Forest Service**: The Act establishes the Kenya Forest Service (KFS) (section 4.1). The functions of the KFS (section 5) are, among others, the following:

- Manage all state forests (section 5.b)
- Draw up or assist in drawing up management plans for all indigenous and plantation state, local authority, provisional, and private forests in collaboration with the owners or lessees (section 5.g)
- Provide forest extension services by assisting forest owners, farmers, and associations in the sustainable management of forests (section 5.h)
- Enforce the conditions and regulations pertaining to logging, charcoal making, and other forest utilization activities (section 5.i)
- Collect all revenue and charges due to the government in regard to forest resources, produce, and services (section 5.j)
- Develop programs and facilities in collaboration with other interested parties for tourism, and for the recreational and ceremonial use of forests (section 5.k)
- Collaborate with other organizations and communities in the management and conservation of forests and for the utilization of the biodiversity therein (section 5.l)
- Promote the empowerment of associations and communities in the control and management of forests (section 5.m)
- Manage forests on water catchment areas primarily for purposes of water and soil conservation, carbon sequestration, and other environmental services (section 5.n)

**KFS Board**: Management of the KFS is carried out by a Board with eight public service members and eight members appointed by the Minister not being public members (section 6. and 6.2). The functions of the Board include the following:

- Consider all management agreements including the granting of management licenses for state plantation forests (section 7.f)
- Negotiate for financial and other incentives for the advancement of the forestry-related activities of private persons, companies, communities, nongovernmental organizations, and local authorities (section 7.g)
- Establish and review policies and rules for marketing of trade in forest produce (section 7.h)
- Prescribe criteria for access to assistance for owners of private forests (section 7.m)

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- Approve the provision of credit facilities and technical training for community-based forest industries and the provision of incentives to persons who exploit wood and non-wood forest products sustainably (section 7.0)

**Forest conservancy areas:** The Board will establish forest conservancy areas for proper and efficient management of forests (section 13.1). A forest conservation committee is established in each conservancy area (section 13.2). The functions of the committee are, among others, the following:

- Inform the Board on the ideas, desires, and opinions of the people within the forest conservancy areas in all matters relating to the conservation and utilization of forests within such area (section 13.3.a)
- Review and recommend to the Board applications for licenses and renewals thereof (section 13.3.c)
- Regulate the management of forests at the relevant conservancy area, including the setting of charges and retention of income (section 13.3.d)
- In consultation with the Board, assist local communities to benefit from royalties and other rights derived from flora and fauna traditionally used or newly discovered by such communities (section 13.3.e)

The members of the forest conservation committee consist of (section 13.4.a-g)

- a chairman appointed by the Board,
- a representative of the provincial administration,
- the forest officer in-charge, a member nominated jointly by the timber industry operating in the area,
- four members knowledgeable in forestry matters nominated by forest associations operating in the conservancy area (at least one shall be a woman and one a youth),
- an agricultural officer, and
- an environmental officer.

**Forest management and conservation fund:** A Forest Management and Conservation Fund is established (section 18). Among its purposes are

- the maintenance and conservation of indigenous forests,
- the promotion of commercial forest plantations, and
- the promotion of community-based forest projects.

**Customary rights:** The customary rights are ensured (section 22) and nothing in the act shall be deemed to prevent any member of a forest community from using, subject to such conditions as may be prescribed, such forest products as it has been the custom of that community to take from such forest otherwise than for the purpose of sale.

**Private forests:** An owner of a private forest may apply to the KFS for registration (section 25.1). The registration will entitle a private forest owner to receive technical advice from the KFS and loans for development of the forest, subject to availability of funds (section 25.2).
Management of forests: Partnership agreements for management of forests are subject to the following:

− The Director may, with the approval of the Board, enter into an agreement with any person for the joint management of any forest (section 36.1).

− All plantation forest owned by the state shall be managed by the KFS on a sustainable basis with the primary objective being the production of wood and other forest products and services for commercial purposes (section 37.1).

− The Board may call for applications from interested persons for management of a state plantation forest through a management agreement (license, concession, contract, or joint agreement) (section 37.2-5). Before entering into an agreement the Board shall call for an independent inventory of the forest and other relevant data to enable it to determine the true value of such forest (section 37.6).

− A local authority may, upon application from a company, a government agency, a forest community, a professional association, an educational institution, a nongovernmental organization, a cooperative society, or an individual, after approval by the Board enter into an appropriate management agreement for all or part of any forest in its jurisdiction (section 39.1).

− The Board can, by license, grant concessions for the utilization of a forest (section 40).

− The Board may enter into a joint management agreement for the management of any state indigenous forest or part thereof with any person, institution, government agency, or forest association (section 41.3).

Community forest association: A member of a forest community may, together with other members or persons resident in the same area, register a community forest association (CFA) under the Societies Act (section 46.1).

A registered CFA may apply to the Director for permission to participate in the conservation and management of a state forest or a local authority forest (section 46.2-3).

The functions of the CFA are, among others, to

− protect, conserve, and manage the forest pursuant to a management agreement (section 47.1.a),

− assist the KFS in enforcing the provision of the act in particular in relation to illegal harvesting of forest produce (section 47.1.d),

− enter into partnerships with other persons for the purposes of ensuring the efficient and sustainable conservation and management of forests (section 47.1.e), and

− help in fire fighting (section 47.1.g).

CFA management agreement: The management agreement between the Director and the association confers on the association all or any of the following forest user rights (section 47.2):

− Collection of medical herbs

− Harvesting of honey

− Harvesting of timber or fuelwood

− Grass harvesting and grazing

− Collection of forest produce for community-based industries
− Ecotourism and recreational activities
− Scientific and educational activities
− Plantation establishment through non-resident cultivation
− Contracts to assist in carrying out specific silvicultural operations
− Development of community wood and non-wood forest-based industries
− Other benefits which from time to time may be agreed upon between an association and the service.

An association may, with the approval of the Director, assign any or all of its rights under a management agreement to a suitably qualified agent on mutually agreed terms (section 48.1).

**Rules and regulations:** The Minister may, on the recommendations of the Board, make rules for or with respect to any matter for carrying out or giving effect to the act (section 59.1). The rules that may be made include the following:

− Controlling the harvest, collection, sale of, and disposal of forest produce (section 59.2.a)
− Prescribing the amount of royalties or fees payable under this act (section 59.2.b)
− Regulating the use and occupation of state forest land (section 59.2.c)
− Specifying the circumstances in which licenses, permits, leases, concessions, and other agreements may be applied for, granted, varied, refused, or cancelled (section 59.2.d)
− Regulating the felling, working, and removal of forest produce in areas where trees may be felled or removed (section 59.2.e)
− Providing for compulsory use of property marks by the KFS, local authorities, and owners of private forests for the purpose of identifying wood sold from state, local authority, provisional, and private forests (section 59.2.k)
− Regulating the establishment of forest-based industries (section 59.2.o)
− Providing measures that enhance community participation in the conservation and management of forests at the local level (section 59.2.p)
− Providing for the establishment of new forest areas (section 59.2.q)
− Regulating production, transportation, and marketing of charcoal (section 59.2.r)
− Prescribing the manner of nomination of representatives of forest associations to the conservancy committee (section 59.2.s)

**Register:** The Director shall maintain a register of all licenses issued, private forests registered, local authority forests, all associations participating in forest management and conservation, and all forest management plans (section 60.1). All registers under this section shall be open to the public during official office hours (section 60.2).
## Annex 4: Gradations in participation from full state to private ownership

<table>
<thead>
<tr>
<th>Tenure</th>
<th>Forest ownership</th>
<th>Forest management</th>
<th>Duration</th>
<th>Public forest revenue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forest stand</td>
<td>Forest land</td>
<td>Logging operation</td>
<td>Forest management</td>
<td></td>
</tr>
<tr>
<td>1. Public management with timber yard and forest gate sales</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>n.a.</td>
<td>Rents are captured in the public management operations, but production may be inefficient. Log auctions an option.</td>
</tr>
<tr>
<td>2. Timber sales of standing timber under short-term leases (lease of logging)</td>
<td>Public</td>
<td>Private (stumpage tender)</td>
<td>Public</td>
<td>One year</td>
<td>Timber licenses and stumpage sale through tender. Stumpage values (forest rents) less management costs and operating margin.</td>
</tr>
<tr>
<td>3. Forest concession (lease of logging, requiring forest management and reforestation)</td>
<td>Public</td>
<td>Private (tender)</td>
<td>Contract condition</td>
<td>Period at least equal to rotation, but optional renewal</td>
<td>Stumpage values (forest rents) less capitalized investments, forest management cost, and an operating margin.</td>
</tr>
<tr>
<td>4. Lease of land for forestry</td>
<td>Private</td>
<td>Public (lease)</td>
<td>Private (self-interest)</td>
<td>One rotation or longer</td>
<td>Annual land rent equal to alternative land use or expected return from forestry, net of operating margin.</td>
</tr>
<tr>
<td>5. Privatization of forest and land</td>
<td>Privatized (sale or auction)</td>
<td>Private</td>
<td>Private</td>
<td>n.a.</td>
<td>Based on asset value of timber and land (value of expected land rents and stumpage value).</td>
</tr>
</tbody>
</table>

*Note: n.a. = Not applicable. The table shows the gradual steps from full public ownership and management [1] to private [5]. State forest management [1] is not going on in Kenya at present. Timber license [2] and concession management [3] are included in draft Forest Rules for management agreements. The lease of land for forestry [4] is suggested by the industry, but may not be feasible because it might imply a transfer from the KFS to the Commissioner of Land and a risk of land conversion. Privatization of forest land [5] occurs when state plantations are privatized for forest management. That is an unlikely scenario in Kenya, where state forest has been excised (degazetted), but for other land uses than private forestry.*
## Annex 5: Options for participation in forest management in Kenya

<table>
<thead>
<tr>
<th>Participation option</th>
<th>Approach</th>
<th>Actors</th>
<th>Cost- and benefit-sharing mechanism</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concession management of state forest plantations</td>
<td>Management agreement between KFS and private sector operators. Transfer of management rights and obligations to private sector as agreed in a forest management agreement and plan.</td>
<td>Private forest management companies, which can be subsidiaries of larger forest industries. Sawmills traditionally have the license for logging, that is, stumpage sales, but are not usually engaged in forest management, although they may become more so engaged. Responsibilities of contractor and KFS will be included in management agreement and will determine the bidding price.</td>
<td>A bid will be made according to expected market value less logging costs, forest management costs, forest protection costs, reforestation, and an operating margin (profit). The potential main source of KFS income, but revenue expectations have to be adjusted because management and investment responsibilities are transferred.</td>
<td>Develop a concession allocation and management model and pilot its implementation. Develop concession business model. Feasibility assessment of different models, financial returns, and allocation of costs and benefits required. Appraise royalty potential. Determine a “fair” concession fee and the reserve price KFS might set.</td>
</tr>
<tr>
<td>Timber license (stumpage sales) in forest state plantations or indigenous forests</td>
<td>Private sector logging service delivered and purchased license to timber removal Can be used as a kick-start for concession management, for example, for clearing over-mature plantation stocks as well as commercial thinnings.</td>
<td>Same as for concession management. Mostly contracted to sawmills. KFS is responsible for management operations, forest protection, and possibly reforestation.</td>
<td>Payment is royalty based, that is, a share of the expected stumpage value (price of timber less logging costs) less the operating margin. Temporary KFS revenue when clearing the mature stock. Funding required for managing backlog and</td>
<td>Develop timber license as a variation of a concession management model. Use an annual timber sale to involve contractors without forest management skills or interest. Subdivide stumpage sales in smaller lots and disburse</td>
</tr>
<tr>
<td>Participation option</td>
<td>Approach</td>
<td>Actors</td>
<td>Cost- and benefit-sharing mechanism</td>
<td>Action</td>
</tr>
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<td>----------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Private sector cultivation of state land for plantation forestry</td>
<td>Access to lease of land designated for forestry. Lease of forest land (without trees) for cultivation is a variation of a concession model without an initial stumpage. The KFS can involve the private sector and investors. The caveat is that land leases will come under the jurisdiction of the Land Commissioner and risks of permanent land-use change could be high.</td>
<td>Forest and tea industries are keenly interested in leasing bare state forest land for timber and fuelwood production. Investors with capital and an interest to grow timber. The management may be subleased, for example, involving local communities and contractors. Forest resources are used by institutional investors to stabilize assets for venture capital, that is, for risk spreading for longer-term investments, and to offer a “green” portfolio.</td>
<td>Lease according to bid above reserved land rent. The land rent is the expected return to land for forestry or the best alternative use. The private producer will capture the return to capital invested and his skills in producing tree crops. KFS will not be able to collect timber royalty on top of land lease without title to timber. Responsibilities of contractor and KFS will be included in a management agreement and will influence the bidding price. Secure land rent revenue to KFS.</td>
<td>Develop a concession model agreement for bare land concession to private sector. Assess reserve price of land rents. KFS to get involved in forest management only for monitoring whether requirements in management agreement is followed. Relevant to attract institutional investors with an investment package. An investment opportunity can be marketed and developed by private forest enterprise. These can be national or international.</td>
</tr>
<tr>
<td>Farm forestry</td>
<td>Building on existing interests of farmers to grow trees for income. Main product is fast grown fiber and biomass. In areas</td>
<td>Farmers growing short rotation tree species. Market based but option to support farm forestry to become stronger and equal</td>
<td>Costs and benefits accrue to the individual farm producer—the owner of the land and investor in the crop.</td>
<td>Support to development of farm forest producer associations to deliver extension, secure market access, encourage species</td>
</tr>
<tr>
<td>Participation option</td>
<td>Approach</td>
<td>Actors</td>
<td>Cost- and benefit-sharing mechanism</td>
<td>Action</td>
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<tr>
<td></td>
<td>adjacent to pulp mills and tea factories, there is a potential market. From further distance the demand is for fuel and charcoal or poles and class one (small diameter) saw logs.</td>
<td>partners with forest industry and tea companies. Role of KFS is limited to ensuring that the regulatory framework is working, for example, a simplified permit system for operations and transportation. KFS is a regulatory service provider.</td>
<td>Cost of extension, marketing, and services purchased as a group of farm forest producers may be shared, for example, as a levy on sales. Minimum revenue potential for KFS unless active role in extension. Overall role of KFS to be defined.</td>
<td>diversity (other than eucalyptus), and gain competitive prices. Horizontal organization of producers. Options for marketing and own private branch of extension. Many smaller farm forestry plots when added up may provide a sizeable resource flow.</td>
</tr>
<tr>
<td></td>
<td>Applying tested models, such as the experience in sugarcane, tea, and tobacco with outgrowers in Kenya, and with pulpwood from South Africa</td>
<td>Farmers growing short rotation tree species under contract to the actual or potential purchaser.</td>
<td>Costs and benefits accrue to the individual farm producer with some sharing of investment costs (and potentially benefits) with the industry. A below-market price agreement would be an incentive for the industry, but a disincentive for the producers. Probably as efficient if the industry only provided credit for the investment, access to seedlings, and extension. No revenue potential for KFS except income for cost recovery of services delivered.</td>
<td>Determine whether outgrower schemes relevant and needed. It may work well in specific cases (private-private agreements) but will not be relevant for a large rollout. Relevance and option for market security may be overstated. There will be a demand for products for various other uses, for example, for fuel and charcoal. An outgrower scheme involves vertical integration that bypasses the market mechanism. Outgrower schemes may develop at local initiative by the larger forest industry.</td>
</tr>
<tr>
<td>Participation option</td>
<td>Approach</td>
<td>Actors</td>
<td>Cost- and benefit-sharing mechanism</td>
<td>Action</td>
</tr>
<tr>
<td>----------------------</td>
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<td>--------</td>
</tr>
<tr>
<td><strong>Community Forest Associations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFA management agreement for state forest plantations</td>
<td>Plantations unsuitable for a concession (due to location, size, or quality) but more suitable for management by local community. Involving communities in sustainable management of the resource by allocating resource use rights in return for management and protection obligations.</td>
<td>A CFA can enter into a forest management agreement with KFS. CFA prepares a management plan with external assistance and purchases services from KFS, private service providers, or NGOs.</td>
<td>Subject to the available stumpage, the benefits could be given in total to the community in return for their agreed management and protection obligations. Low revenue potential for KFS. Cost recovery for delivered extension and other services.</td>
<td>Develop and test models for different approaches to PFM. Could be a problem if PFM is considered a second choice to concession management. But CFAs are probably not efficient forest managers of plantations forests. An alternative would be to plow some KFS revenue into a community from concessions revenue.</td>
</tr>
<tr>
<td>CFA management agreement for indigenous forests</td>
<td>JFM agreement focusing on user rights for specific uses, such as fuelwood collection and NWFPs.</td>
<td>Attention could be on specific users groups and user rights included in a general management plan.</td>
<td>To be agreed what the CFA or user group should give in return for obtained user rights. (Critical whether the CFA or user group considers such an arrangement to be an improvement compared with previous situation of open access and little control.)</td>
<td>Develop and test models for different approaches to PFM. Develop model forest management agreements and plans with cost- and benefit-sharing mechanisms.</td>
</tr>
<tr>
<td>Participation option</td>
<td>Approach</td>
<td>Actors</td>
<td>Cost- and benefit-sharing mechanism</td>
<td>Action</td>
</tr>
<tr>
<td>----------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
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<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CFA management agreement of trust land forests (woodlands)</td>
<td>JFM (as above) Linking with existing assessment of management of environmental services.</td>
<td>Involvement of local government authorities in agreement with CFAs. Communities more engaged in forest protection with some resource tenure.</td>
<td>Low potential for KFS revenue or even for CFA revenue.</td>
<td>Low or no potential for KFS revenue. May simply confirm “business as usual” for community use of local resources. Outside KFS responsibility for management but it will be relevant to address management of woodlands in ASAL and the involvement of local government.</td>
</tr>
<tr>
<td>Non-Resident Cultivation (NRC) for industrial plantations</td>
<td>Partnership between investors in afforestation and reforestation of industrial plantations. An approach with large</td>
<td>Members of CFAs and KFS. Could also be relevant for private sector investments in reforestation on state land, e.g. as part of a concession agreement or reforestation on private land.</td>
<td>According to a management agreement. Non-resident cultivators have certain responsibilities to protect the seedlings and in addition may be subject to paying a land lease. Low potential for direct KFS revenue. But the return is indirectly from higher survival rate of seedlings and shorter rotation of plantations.</td>
<td>Long experience with NRC has proven it to be efficient for reforestation. Requires adequate supervision by owner of the tree crop.</td>
</tr>
<tr>
<td>Market organization and development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainable charcoal production and marketing</td>
<td>Legalize sustainable production of charcoal. Organizing local groups of producers and traders. Promote cost-efficient</td>
<td>Partnerships already in place between cattle farmers and charcoal producers, because the charcoal producers clear the bush and improve grazing.</td>
<td>Critical whether a sustainable supply of raw material can be developed. A loss to the economy if charcoal production collapses because of lack of</td>
<td>Organize charcoal producers and traders in local associations. Develop model and pilot test production and marketing of sustainable</td>
</tr>
<tr>
<td>Participation option</td>
<td>Approach</td>
<td>Actors</td>
<td>Cost- and benefit-sharing mechanism</td>
<td>Action</td>
</tr>
<tr>
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<tr>
<td></td>
<td>production of sustainable sources of biomass for charcoal production (fuelwood plantations) Improve production of inputs and improvement in kiln efficiency (&gt;20 percent as required in draft Forest Rules), and to enhance upstream capture of the charcoal value chain.</td>
<td>Potential partnership between KFS and charcoal producer and trader associations.</td>
<td>access to raw materials. Large potential for KFS revenue by legalizing and organizing the production of and trade in charcoal (the current illegal production is valued at US$450 million annually generated mainly through trade). The costs will be borne by those currently collecting fines from illegal production or moving of charcoal or otherwise benefiting from illegal production, for example, local governments who issue transport permits without a mandate to do so.</td>
<td>charcoal, including certifying sources of origin. Assess the charcoal value chain to identify constraints and potential for value added. Assess production costs of sustainable production of biomass for charcoal, for example, fuelwood plantations in different eco-regions, bamboo, and so forth. JICA-developed Farmer Field School approach could be applied in other locations and be used as an organizational model for charcoal producers and farm forestry.</td>
</tr>
<tr>
<td>Organize buyers and suppliers of wood and fiber for fuel and fiber</td>
<td>A company structure in charge of generating sustainably produced sources of biomass for fuel and fiber. The company may not physically move the material but could be a clearinghouse for sustainably produced biomass for fiber and fuel. Alternative to random and</td>
<td>The sources are from farm forestry, plantations (residues), sawmill residues, and surplus biomass from other sectors including the sugar industry. Responding to demand for fiber and fuel from paper production and tea factories. Could also supply raw material to charcoal.</td>
<td>The company could be owned by shareholders, but conflict could emerge if it is owned by either buyers or sellers only. Opportunity to use the company to produce carbon credits to generate carbon financing. No direct revenue potential for KFS, but KFS might facilitate the legal aspects.</td>
<td>Develop and test a business model for small-scale enterprises (based on an original proposal by Energy for Sustainable Development, Africa).</td>
</tr>
</tbody>
</table>

**Participation in Sustainable Forest Management**

*Forest Policy Note, Kenya*
<table>
<thead>
<tr>
<th>Participation option</th>
<th>Approach</th>
<th>Actors</th>
<th>Cost- and benefit-sharing mechanism</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental services</td>
<td>Payment for protection and production of external benefits, for example, ecosystems and biodiversity (in indigenous forests), water services (mainly the five water towers), and carbon sequestration. International development and marketing of verified carbon reductions in Clean Development Mechanism (CDM).</td>
<td>Upstream payments for managers of water catchments to deliver certain management regimes to protect lower water flows, for example, for water supply to urban areas, hydropower, agriculture, and national parks</td>
<td>To be further developed. The costs of delivering the environmental services to be assessed. Level of revenue potential depends on whether purchaser is willing to pay a rent in addition to cost of production. Challenge in identifying the actors in a market transaction. Potential high transaction costs.</td>
<td>Modest steps to develop examples and opportunities. The basic forest management system has to be in place and political issues addressed before additional funding is sought. Experience with World Bank’s BioCarbon Fund to the Green Belt Movement to be followed and further internalized.</td>
</tr>
</tbody>
</table>

*Source: Authors’ compilation.*

*Note: Other options included in Vermeulen and Walubengo (2005), such as tannin from wattle and wood carving, have not been included as options here.*
Annex 6: Assessing a standard bidding price of a forest concession

This is an example of how a standard bidding price may be calculated by a forest industry bidding for a state forest plantation concession. The assessment shows the principles of the calculation. The actual bid will depend on

- actual plantation inventory and accessibility;
- processing efficiency, management skills, location of the timber industry,\(^\text{18}\) and access to credit;
- market access for final products; and
- actual cost of forest management and reforestation.

The assumptions comprise the following\(^\text{19}\):

- The final product sells at K Sh 17,000/m³ at mill gate. Production costs are K Sh 5,000/m³ (30 percent), which covers the costs of logging, skidding, transport to mill, and processing.\(^\text{20}\) Improved commercial use of residues can reduce the conversion costs.

- A minimum operating margin of 15 percent of sales value.\(^\text{21}\) If the profit margin is lower, the sawmill will close production.

- A conversion rate from timber to final product of 35 percent. The estimates of conversion rates require further assessment. This is an activity planned by the KFS.

- A standard “replacement cost” of K Sh 1,400/ha, which covers all undiscounted costs for forest management and reforestation as a share per cubic meter of removal. This is the value that has previously been used as the price of Forest Department stumpage sales (timber license) and only recovers incurred costs. The replacement cost approach does not include a land rent as payment for the use of land as a production factor.

The results presented in table A6.1 are estimates, mainly to illustrate the method until improved data are generated:

- *Concession.* The forest rent generated as a return to the KFS as the resource owner (of land and stumpage) and to the concession holder as the manager of the forest (above the minimum operating margin) is estimated at approximately K Sh 2,000/m³. This is the expected value a concession can generate on average per cubic meter. If the forest rent is divided equally between the KFS and the concession holder, the price for timber in a concession operation would be K

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\(^{18}\) The location of the timber industry implies that in many cases there will be only a few relevant bidders for a given concession. There is also a trade-off between efficient conversion rates and distances, that is, sawmills with high efficiency are more competitive, even at longer distances, than mills that are less efficient.

\(^{19}\) The assumptions are average figures. Suggestions for improvements are welcome.

\(^{20}\) FOMAWA 2006.

\(^{21}\) An absolute minimum operating margin for a sawmill is 13 percent (D. Walubengo, Forest Action Network, personal communication, March 2007).
Sh 1,000 /m³. It could provide a profit margin to the industry of 32 percent.22 The equal split is an example and not a rule, and the share to the KFS could be higher if there is competition in the sector and no collusion among bidders, or lower if there are few bidders.

- **Timber license.** A normal practice in Kenya has been to sell timber on the stump through timber licenses. It has normally been priced at a minimal replacement cost (K Sh 1,400/m³), which provides income for cost recovery but no profit for the KFS. The industry’s maximum willingness to pay is estimated at a stumpage price of K Sh 3,290/m³. In a competitive tender with a split of expected revenue, the timber license should be priced at K Sh 2,400/m³, which is the concession price plus the replacement costs.

- **Auction.** KFS may decide to undertake or contract out the logging operation and sell the logs at an auction at the log yard. Cost of production would be the replacement cost (estimated at K Sh 1,400/m³) and logging and skidding (estimated at K Sh 700/m³). If management or logging operations are outsourced on a contract basis, a profit margin should be added. A minimum selling price is K Sh 2,100/m³, where the KFS earns no profit but has no loss either. The maximum willingness to pay at the forest gate by the industry is K Sh 4,000/m³, at which price the industry just recovers a 15 percent profit margin to stay operational. The difference between the minimum (reserve) and the maximum price is the forest rent. If there is an equal split again, the auction price would be K Sh 3,100/m³, which is the timber license price plus logging and skidding costs. The KFS may be able to capture more than half of the forest rent, for example, with high demand and logs sold in differentiated lots.

22. The profit margin at factory (K Sh 900K Sh/m³) plus share of forest rent (K Sh 1,000K Sh/m³) divided by market value of converted input (K Sh 6,000/m³). The industry sets the production costs at 68 percent, including royalties, leaving a profit margin of 32 percent (D. Gitonga, Chairman, Timber Manufacturers Association, personal communication, March 2007).
Table A6.1 Assessment of a standard concession bid price

<table>
<thead>
<tr>
<th></th>
<th>US$/m³</th>
<th>K Sh /m³</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final product value</td>
<td>85</td>
<td>5,950</td>
<td>Sawmill turnover. Conversion rate is 35 percent and the going market rate for sawn timber is 17,000/m³ (FOMAWA 2006).</td>
</tr>
<tr>
<td>2. Processing</td>
<td>10</td>
<td>700</td>
<td>K Sh 5,000/m³ for final product (FOMAWA 2006). At 35 percent conversion rate, equals K Sh 1,750/m³ or US$25/m³. Includes processing (US$10), transport (US$5), and logging and skidding (US$10).</td>
</tr>
<tr>
<td>3. Forest industry operating margin</td>
<td>13</td>
<td>910</td>
<td>Minimum 15 percent of sawmill turnover</td>
</tr>
<tr>
<td>4. Timber input at the “mill gate”</td>
<td>62</td>
<td>4,340</td>
<td>The maximum price the sawmill can pay for timber delivered at the mill gate is US$62/m³ or K Sh 4,400/m³. The sawmill can compare with alternative sources of timber.</td>
</tr>
<tr>
<td>5. Transport from forest log yard to forest industry</td>
<td>5</td>
<td>350</td>
<td>US$5/m³ assuming a cost of US$0.2/m³/km and an average transport distance of 25 km. Transport distance will vary among concession holders.</td>
</tr>
<tr>
<td>6. Value of timber at the “forest gate”</td>
<td>57</td>
<td>3,990</td>
<td>The maximum willingness to pay at the forest gate by the forest industry for timber is US$57/m³ or K Sh 4,000/m³ (for example, at an auction). Can be compared with the market price of timber from alternative sources, from farm forests, for instance.</td>
</tr>
<tr>
<td>7. Logging and skidding</td>
<td>10</td>
<td>700</td>
<td>US$10/m³</td>
</tr>
<tr>
<td>8. Stumpage value (standing stock value)</td>
<td>47</td>
<td>3,290</td>
<td>Maximum willingness of industry to pay for a timber license</td>
</tr>
<tr>
<td>9. Standard replacement cost</td>
<td>20</td>
<td>1,400</td>
<td>Forest management, forest protection, and reforestation. The minimum price of willingness to sell for the KFS (replacement costs) for a timber license. Estimated at K Sh 1,400/m³.</td>
</tr>
<tr>
<td>10. Maximum forest rent that can be obtained in a concession bid</td>
<td>27</td>
<td>1,890</td>
<td>Potential revenue for the KFS: US$27/m³ or about K Sh 1,900/m³ of removed stock. Pays for the stumpage title and land rent.</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.

Note: The cost figures are examples; refinement of the data will be required.

The findings include the following:

- In theory, the net revenue gained for the KFS from the forest would be the same for all types of models (concession, stumpage sale, or auction), but the income (and costs) will vary. In practice, the net revenue could be larger for concessions than timber licenses due to the longer time horizon, or smaller for concessions than timber licenses due to fewer bidders (some forest industries have no interest in forest management), and higher for auctions due to opportunities for differentiation of products and market access. Subdividing the timber harvested or stumpage into smaller lots will open the market to more bidders and a premium can be obtained, for example, for a small lot of selected higher quality logs.

- If all the plantation area of 120,000 ha was suitable for concession management (which it is not), the income could be K Sh 2.4 billion with a Mean Annual Increment (MAI) of 20 m³/ha. This is an upper ceiling of potential revenue from the plantation forests. A realistic level could be concession agreements on 50,000 ha, increasing to perhaps a maximum of 75,000 ha of potential plantation concession. With MAI of 20 m³/ha the annual harvest would be between 1.0 and 1.5 million m³ including commercial thinnings and final crop and an estimated plantation revenue potential of K Sh 1.0 to 1.5 billion as an upper level.
• Income may be greater than revenue when the KFS incurs costs for forest management, logging, reforestation, and the like, which is paid for on a cost recovery basis by the concession or timber license holder. It is projected by the World Bank SEA that KFS could have revenue of K Sh 3.0 billion, but that is likely to include direct operating and investment cost obligations, for example, for reforestation, of at least K Sh 1.5 billion.

• The concession fee can be charged per unit harvested or per area—equal to about K Sh 1,000/m³ or K Sh 20,000/ha (with 20 m³/ha MAI)—or in some combination. An advantage with an area-based fee is that payment is made independently of actual logging, that is, an uneven age-class structure will influence the concession holder’s cash flows and not that of the KFS. A management plan would be used to monitor harvests and fulfillment of responsibilities by the concession holder and the KFS.

• Risk and uncertainty can increase transaction costs and risk premiums and, in the short run, erode efficient profit margins. It is thus important to the financial return that regulations and transparency are in place and certainty provided in the management agreements.

• The existing government royalties based on replacement costs undervalue the state forest for two reasons: (a) no charge is made for the land rent, that is, use of land as a production factor is implicitly considered to be free of charge; and (b) by charging only the cost of production, all the resource rents are captured by the resource user and none by the owner.
Annex 7: Assessment of the financial returns from plantation forest management in Kenya

This annex presents principles for a financial appraisal of forest plantation management in Kenya. Because of insufficient data, the results are not accurate and should not be quoted as facts or used for policy decision making.

Stand-level financial appraisal

Sedjo (2004) presents three financial analyses of stand-level forest plantations in Kenya:

- Pine sawlogs with a rotation age of 27 years
- Pine pulpwood with a rotation age of 19 years
- Eucalyptus pulpwood with a rotation age of 18 years

The forest plantation will only produce one forest product, either sawlogs or pulpwood. After clear felling, the area is replanted and used for the same type of production.

The financial assessment in Sedjo (2004) presents the result as the internal rate of return, that is, the interest rate of the investment where the net present value of one rotation is zero. Interest rates are not used. Sedjo (2004) uses the official royalty rate as the stumpage value for sales of timber (see table A7.1).

The royalty is K Sh 1,400/m³ for sawlogs and K Sh 700/m³ for pulpwood. This is an estimated replacement cost of stumpage, that is, an undiscounted recovery of forest investment and management costs. By definition, the use of the replacement cost as the price of stumpage should return an internal rate of return equal to zero, that is, a break-even with no return to all the production factors. The replacement costs is a “minimum willingness to sell” price for stumpage equal to the production costs. The royalty does not include a return to the land—the resource rent paying for the use of land as a production factor is captured by the buyer.

The financial assessment in Sedjo (2004) does not include shared (or management overhead) costs at the forest estate level, for example, costs that are not stand-specific such as roads, extension, and fire suppression.

With the same data used by Sedjo (2004), a different approach is applied. The classic approach to stand-level financial management in forestry is to assess a land value. The value of bare land for forestry (before planting) is the net present value of all costs and benefits from forestry using the land in perpetuity. The land value is the return to the owner of the production factor “land” and the operating margin to the forest manager. The land value can be compared with alternative land uses, such as agriculture.

Table A7.1 Assessing the possible land value of plantation forestry

<table>
<thead>
<tr>
<th></th>
<th>Internal rate of return (%)</th>
<th>Interest rates and land value (K Sh/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Pine: sawlogs</td>
<td>10.8</td>
<td>96,128</td>
</tr>
<tr>
<td>Pine: pulpwood</td>
<td>10.4</td>
<td>51,528</td>
</tr>
<tr>
<td>Eucalyptus: pulpwood</td>
<td>30.5</td>
<td>313,383</td>
</tr>
</tbody>
</table>

Source: Author.
Because each of the stand models produces one uniform forest product, it is possible to estimate the cost of producing one cubic meter at a given interest rate.

The cost of producing one cubic meter of sawlog or pulpwood (as shown in table A7.2) is equal to a stumpage price for the harvested product that will result in a land value equal to zero. If the stumpage price exceeds the production cost, there is a forest rent, that is, a resource rent paying a return to the owner of land.

Compared with a royalty based on the undiscounted (0 percent) “real” replacement cost, these production costs are on the low side, that is, the full costs are not included.

**Table A7.2 Production cost of one cubic meter of Industrial Round Wood (values are examples)**

<table>
<thead>
<tr>
<th></th>
<th>Production cost (K Sh/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Pine: sawlogs</td>
<td>151</td>
</tr>
<tr>
<td>Pine: pulpwood</td>
<td>137</td>
</tr>
<tr>
<td>Eucalyptus: pulpwood</td>
<td>134</td>
</tr>
</tbody>
</table>

*Source: Author.*

**Forest rent appraisal**

The estimates of the production costs and market information can be used to estimate the financial return of producing Industrial Round Wood (IRW). The example is an illustration and will require more accurate price and cost data. It reveals the principle of financial profitability assessment.

The forest rent is the available return to the owner of the forest land and the operating margin to the forest manager after all other costs are paid (compare table A7.3 and figure A7.1).

If there is a management agreement, the forest rent is divided between the state (owner) and the forest manager (for example, a private company or a community forest association). The royalty is the fee paid by the user of the forest, perhaps in a concession or an agreement with a community forest association. With appropriate data, the calculation can reveal what the royalty fee could be. As a rule of thumb, the profit margin to the forest manager should be at a minimum 15 percent of the forest gate price.
Table A7.3 Assessing the forest rent and profit margin from plantation forestry  
(*Upstream value chain*)

<table>
<thead>
<tr>
<th>Description</th>
<th>Costs/Prices Included</th>
</tr>
</thead>
</table>
| **Final product market price (per unit of input)** | - Processing at mill (operating costs and depreciation of capital) per unit of input  
- Minimum forest industry operating margin per unit of input |
| **Input price (at mill gate)** | - Transport from forest to mill  
- Informal service payments |
| **Market price (at forest gate), the “maximum willingness to pay” by forest industry at an auction** | - Skidding to timber yard  
- Logging and harvest surveying |
| **Stumpage price, the “maximum willingness to pay” by forest industry for stumpage** | - Forest stand management, rehabilitation, and protection costs  
- Forest management costs  
- Shared production costs (for example, road network and fire control management) |
| **Forest rent, potential profit generated from forest management** | - Royalty to resource owner (cost of using land and timber stock)  
- Other fees, production taxes, and VAT |
| **Operating margin for forest management** (pre-tax profit of the management agreement) | |

The “minimum selling price of stumpage” for the resource owner is recovery of the production costs except logging and skidding. The difference between the buyer’s “maximum willingness to pay for stumpage” and the seller’s minimum price is the forest rent, or the net revenue generated from forest management. The forest rent is divided between a return to land as a production factor and additional return to the forest industry.

Under the royalty system that used replacement cost, all the forest rent was captured as profit by the industry—no return to land was captured by the Forest Department for forest investments or management expenses.
Figure A7.1 Illustration of forest rent appraisal and revenue sharing

Capital is locked up in the production apparatus as timber stock and land. The capital asset has an opportunity value and the rationale for paying a royalty to the asset owner is to pay a rent for the use of the productive assets. In sustainable forest management, the value of the timber stock (natural capital) is kept constant and the net annual production is harvested.

Forest level financial appraisal

A simple model assumes a regulated forest where all age classes are represented with equal areas. The forest is assumed to be the entire state forest plantation of Kenya. It is assumed that the state forest plantation area is 100,000 ha (breakdown provided according to production objective in table A7.4). This is the productive area and in addition there may be open production areas for roads, fire breaks, and buildings. The additional area could be 10,000–15,000 ha over and above the currently existing state-owned plantation area.
Table A7.4 Data for a regulated forest estate (area 100,000 ha)

<table>
<thead>
<tr>
<th>Product</th>
<th>Area (ha)</th>
<th>Rotation age (years)</th>
<th>MAI m³/ha</th>
<th>Total m³ (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawn wood (pine and cypress)</td>
<td>80,000</td>
<td>27</td>
<td>14.4</td>
<td>1.16</td>
</tr>
<tr>
<td>Pulpwood (pine and cypress)</td>
<td>15,000</td>
<td>19</td>
<td>15.0</td>
<td>0.23</td>
</tr>
<tr>
<td>Pulpwood (eucalyptus)</td>
<td>5,000</td>
<td>18</td>
<td>41.8</td>
<td>0.21</td>
</tr>
<tr>
<td>Total production (final crop,</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>1.60</td>
</tr>
<tr>
<td>commercial and pre-commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thinnings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note: n.a. = Not applicable. Data on rotation age and production are based on stand-level information provided in Sedjo (2004). The total production assumes a regulated forest.

In a regulated forest, the financial analysis is equal to a cash flow analysis, that is, the analysis does not apply an interest rate. It can be demonstrated that in a regulated forest, every cash flow that would occur during a lifespan of a stand-level assessment occurs every year. If, for example, pine is grown in a 20-year rotation and the total area is 20 ha, there would be one ha of each age class. Repeated every year, the activities in the regulated forest would equal the activities during the lifespan of one ha. As result, the cash flow of the regulated forest is equal to the undiscounted cash flow of one rotation.

The difference between a land rent approach and a forest rent approach is a classical discussion in forest economics. It can be demonstrated that the land rent approach is a border case of the forest rent approach when the interest approaches zero. The difference is that the regulated forest holds timber stock as a production asset in addition to holding land.

Table A7.5 includes an assessment of the financial revenue and costs from producing and processing one cubic meter of sawlog or pulpwood for the entire plantation forestry sector.

The regulated forest plantation of 100,000 ha could produce 1.6 million m³ of IRW annually.\(^23\) The cost and revenue from producing this amount of IRW maintained on a sustainable level in a regulated forest are estimated in table A7.5.

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23. Spears (2005) assumes that a managed plantation area of 100,000 ha could supply 2.0 million m³ of IRW. This assumes that the MAI on average is 20 m³/ha/yr on all the forest estate. The 20 percent lower figure of 1.6 million m³ allows for losses due to fire, insects, theft, auxiliary uses of land for roads and other land uses, and variations in the terrain.
Table A7.5  Financial appraisal per cubic meter of Industrial Round Wood production  
(cost and price figures are examples and have to be verified)

<table>
<thead>
<tr>
<th></th>
<th>Pine sawlogs</th>
<th>Pine pulpwood</th>
<th>Eucalyptus pulpwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current royalty rates (to KFS</td>
<td>1,400</td>
<td>700</td>
<td>700</td>
</tr>
<tr>
<td>as the resource owner);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>minimum willingness to sell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stumpage for stumpage sales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement costs</td>
<td>- 1,400</td>
<td>- 700</td>
<td>- 700</td>
</tr>
<tr>
<td>(production cost including</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shared production cost—roads,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fire control, capital costs,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>extension, and so forth)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit to KFS as the</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>resource owner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logging and skidding</td>
<td>- 700</td>
<td>- 300</td>
<td>- 300</td>
</tr>
<tr>
<td>Transport to mill</td>
<td>- 350</td>
<td>- 350</td>
<td>- 350</td>
</tr>
<tr>
<td>Cost at mill gate to</td>
<td>- 2,450</td>
<td>- 1,350</td>
<td>- 1,350</td>
</tr>
<tr>
<td>purchaser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing costs</td>
<td>- 700</td>
<td>- 500</td>
<td>- 500</td>
</tr>
<tr>
<td>15 percent (on production)</td>
<td>- 910</td>
<td>- 500</td>
<td>- 500</td>
</tr>
<tr>
<td>minimum operating margin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production costs</td>
<td>- 4,060</td>
<td>- 2,350</td>
<td>- 2,350</td>
</tr>
<tr>
<td>(breakeven)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value of input in final</td>
<td>5,950</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest rent: potential net</td>
<td>1,890</td>
<td>650</td>
<td>650</td>
</tr>
<tr>
<td>revenue to the owner, manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and industry (all captured by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>industry with replacement cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>royalty)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note: Market price (mill gate) and transport to mill are estimates and not verified. The shared cost at forest estate level (for roads, extension, fire protection, and the like) is an estimate and not verified. The production costs are from table A7.2 at 0 percent.

KFS obtains revenue from royalties. Because royalties are based on replacement costs, all revenue in a regulated forest is for management costs and investments in reforestation. As a result, the profit part of the revenue is nil, that is, there is no revenue generated for use in other investments or management obligations. Furthermore, KFS is not charging for use of land as a factor of production when using the replacement cost approach.
The financial appraisal (table A7.6) is shown as an example but the result cannot be generalized. The financial appraisal should be done for each specific forest area, taking into account the inventory, growth potential, harvesting, and management costs and distance to mill or markets.

### Table A7.6 Financial assessment of the state plantation forestry sector in Kenya

(value in million K Sh)

<table>
<thead>
<tr>
<th></th>
<th>Pine sawlogs</th>
<th>Pine pulpwood</th>
<th>Eucalyptus pulpwood</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume harvested (mio. m³)</td>
<td>1.16</td>
<td>0.23</td>
<td>0.21</td>
<td>1.60</td>
</tr>
<tr>
<td>Royalty revenue generated</td>
<td>1,624</td>
<td>161</td>
<td>147</td>
<td>1,932</td>
</tr>
<tr>
<td>KFS cost for management and reforestation (replacement costs)</td>
<td>- 1,624</td>
<td>- 161</td>
<td>- 147</td>
<td>- 1,932</td>
</tr>
<tr>
<td><strong>Profit to KFS</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Value of input in forest industry production</td>
<td>6,902</td>
<td>690</td>
<td>630</td>
<td>8,222</td>
</tr>
<tr>
<td>Industry breakeven production costs (royalty, logging, skidding, processing, minimum operating margin)</td>
<td>4,710</td>
<td>547</td>
<td>493</td>
<td>5,750</td>
</tr>
<tr>
<td><strong>Profit to industry</strong></td>
<td>2,192</td>
<td>143</td>
<td>137</td>
<td>2,392</td>
</tr>
<tr>
<td>Combined net forest rent (return to land) = profit to KFS + profit to industry</td>
<td>2,192</td>
<td>143</td>
<td>137</td>
<td>2,392</td>
</tr>
</tbody>
</table>

*Source: Modified after Spears (2005) and Sedjo (2004)*

*Note: Annual production is from table A7.4. Forest gate market price per m³, costs per m³ (logging cost, production cost, shared cost), and royalty are from table A7.5.*

In the hypothetical example, the revenue to the KFS equals actual costs. All the resource rent is captured by the buyer when a simple replacement cost approach is applied as the royalty rate. If the forest industry took over the management of the forest in a concession agreement, the management and reforestation costs would have to be deducted from the royalty. If the royalty is based on replacement costs, it simply implies that the KFS net revenue becomes zero. The example reveals that as the owner of the stumpage and forestland, the KFS should charge more than the replacement cost.

The example in table A7.6 also reveals that the maximum resource rent from plantations forestry of 100,000 ha may be about K Sh 2.4 billion. The question is how large a share the KFS might capture of this through competitive tender of concession leases; forest management and tender of timber license stumpage sales; and forest management, harvesting, and auctioning of felled logs.
What is the value of the plantation forests?

The KFS has assessed the stumpage value of the 100,000 ha forest plantations to be K Sh 32.7 billion. It is 327,000 K Sh/ha on average. K Sh 21.2 billion (65 percent) are in the over-mature stock (older than 30 years) covering 27 percent of the 100,000 ha forest plantation area.

Assuming that the area of stock less than 30 years old is almost equally distributed over the plantation area the value per ha of under-mature stock would then be K Sh 157,500 [(32.7 billion – 21.2 billion) = 11.5 billion/72,000 ha].

In a regulated forest (equal distribution over age classes), the relevant information is not the stumpage value of the standing forest but the stumpage value of the aggregated Mean Annual Increment (MAI), which will provide the return on land and standing timber.

The value of the standing forest is the Soil Expectation Value, which is the present value of all future revenue. The Soil Expectation Value of bare land is the land value for forestry and for a mature forest, it is the stumpage value plus the land value.

For immature stands, the Soil Expectation Value exceeds the stumpage value. Economic maturity occurs when the value increment of the stumpage no longer exceeds the alternative capital interest on land and stumpage.
### Annex 8: Draft logical framework for participation in forest management in Kenya

Annex 8 is not mentioned in the text, but provides important information useful for operationalizing partnerships in sustainable forest management.

<table>
<thead>
<tr>
<th>Development objective</th>
<th>Impacts indicators</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration of forest sector resources into sustainable socioeconomic development in Kenya</td>
<td>Outputs from the forest industry as reported by industry forums and national statistics  &lt;br&gt; Contribution of forests and woodlands to rural livelihoods from household surveys and national statistics</td>
<td>Good governance in forest sector and continued economic development.  &lt;br&gt; Importance for livelihoods recognized and monitored in development plans.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immediate objective</th>
<th>Outcome indicators</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the forest and tree cover in Kenya to ensure a sustainable supply of forest products and services meeting the needs of present and future generations (National Forest Policy objective)</td>
<td>Consumption and exports of IRW, market prices on forest products from industry forums, and national statistics  &lt;br&gt; Community access to management and use of timber and non-timber forest products as documented in household surveys and national statistics  &lt;br&gt; KFS sustainable revenue collection from KFS annual report  &lt;br&gt; Forest resource assessment (inventory) for verification</td>
<td>Forest management is economically competitive with other land uses.  &lt;br&gt; Incentives available for participation.  &lt;br&gt; Communities gain rights to share of revenue and use of forest products.  &lt;br&gt; KFS Board is functional.  &lt;br&gt; MENR and KFS responsibilities clear.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Indicators (annual and targets by 2010)</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Standards and models for participatory or joint forest management (PFM/JFM) of state forests piloted</td>
<td>National PFM/JFM standard developed  &lt;br&gt; Number of CFAs established and number of management agreements entered into with CFAs  &lt;br&gt; From business plans: income generated, cost and benefit sharing  &lt;br&gt; From management agreements and plans: monitoring of performance</td>
<td>CFAs established have organizational and management capacity.  &lt;br&gt; Forests are profitable for sustainable CFA management.  &lt;br&gt; KFS willing to share benefits and costs.</td>
</tr>
<tr>
<td>2. Standards and models for participation in management of state forest plantation piloted</td>
<td>Area of concessions established in state plantations forests; monitoring of performance (around 25,000 ha)  &lt;br&gt; Alternative management models tested  &lt;br&gt; KFS revenue; market-based royalty scheme</td>
<td>Allocation of concessions through competitive and fair tender.  &lt;br&gt; Private sector complies with standards and management agreements.</td>
</tr>
<tr>
<td>3. Farm forestry developed</td>
<td>Farm forest producers’ organization established  &lt;br&gt; Farm forestry production and income; investments in farm forestry  &lt;br&gt; Planning and marketing of products</td>
<td>Production has profitable market access.  &lt;br&gt; Farm forestry is included in planning of forest resource production.  &lt;br&gt; KFS willing to ease regulatory obstacles.</td>
</tr>
<tr>
<td>4. Industry forum, KFS information center established (for investors and information seekers)</td>
<td>Options for environmental services payments; Community based Associations (CBAs) of selected pilot projects for forest enterprises and charcoal</td>
<td>Removal or revision of obstacles pointed out by industry.  &lt;br&gt; Available private sector financing.</td>
</tr>
</tbody>
</table>
### DRAFT - Logical Framework: Participation in Sustainable Forest Management in Kenya (continued)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Inputs</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output 1: Participatory forest management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Provide support to CFA organization (NACOFA)</td>
<td>• Development budget for NACOFA</td>
<td>• PFM guidelines (in draft) are applicable</td>
</tr>
<tr>
<td>1.2 Develop model management agreements and benefit- and cost-sharing mechanisms</td>
<td>• Designation of minimum 15,000 ha of state forest by KFS for pilot implementation</td>
<td>• KFS Board establishes regulation in time</td>
</tr>
<tr>
<td>1.3 Develop models for PFM, CFA organization, and management plans</td>
<td>• Funds for piloting community-based forests</td>
<td>• KFS able and willing to allocate area and share benefits with CFAs</td>
</tr>
<tr>
<td>1.4 Develop and test models for community-based small-scale forest enterprises</td>
<td>• Funds for developing capacity for local service providers (NGOs and entrepreneurs)</td>
<td>• CFAs are democratic organizations with social inclusion of poor and women</td>
</tr>
<tr>
<td></td>
<td>• Extension and legal service from KFS</td>
<td>• Donor harmonization</td>
</tr>
<tr>
<td><strong>Output 2: Plantation forestry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Tender management agreements for state plantation: forest concessions, stumpage sale, timber auctions, and land concession</td>
<td>• Designation of minimum 25,000 ha by KFS for tender</td>
<td>• KFS Board establishes regulation</td>
</tr>
<tr>
<td>2.2 Prepare model management plans, management agreements, and model business plans</td>
<td>• Funds for developing tender process and piloting concession forestry in 25,000 ha</td>
<td>• Lifting of logging ban</td>
</tr>
<tr>
<td>2.3 Develop royalty scheme and monitoring</td>
<td>• Models for third-party agreements with CFAs, for example, access to collect NWFP, employment, and so forth</td>
<td>• KFS able and willing to delegate management responsibility to private sector operators (sawmills)</td>
</tr>
<tr>
<td>2.4 Pilot CFA participation in forest concession management with forest industry and tea sector</td>
<td>• Extension and legal services from KFS delivered</td>
<td>• Transparent and accountable allocation of concessions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Credible private operators available</td>
</tr>
<tr>
<td><strong>Output 3: Farm forestry private partnership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Develop and test models for farm forestry</td>
<td>• Funding to develop farm forest models and farm forestry associations</td>
<td>• Farmers interested in growing tree crops, and the private sector willing to participate and cofinance</td>
</tr>
<tr>
<td>3.2 Pilot schemes of farm forestry organization</td>
<td>• Cofinancing from private sector delivered</td>
<td>• KFS able to simplify and improve conditions for sale of timber and farm forests produce</td>
</tr>
<tr>
<td>3.3 Develop farm forestry support and extension</td>
<td>• Extension and legal services from KFS and private sector</td>
<td></td>
</tr>
<tr>
<td><strong>Output 4: KFS information center</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Industry forum established</td>
<td>• Private sector cofinancing of assessments</td>
<td>• Private sector willing to finance forest sector enterprises</td>
</tr>
<tr>
<td>4.2 Forest enterprise development analyzed</td>
<td>• Operations of industry forum and information center</td>
<td>• KFS willing to regulate for efficient transactions in the value chain</td>
</tr>
<tr>
<td>4.3 Business models developed, financial appraisal and test for locally based forest enterprises</td>
<td>• Charcoal and fuelwood value chain analyzed</td>
<td>• Donor harmonization</td>
</tr>
<tr>
<td>4.4 Options for value added assessed in pilot projects, including financial analysis</td>
<td>Other analytical assessments prepared jointly by KFS and industry</td>
<td></td>
</tr>
</tbody>
</table>