



Climate Action in the Forestry Sector in Kenya: Sector Roadmap

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The report was developed by AECOM, authored by Jérôme Maurice, Clara Champalle, Omar Daouda with contributions from Emily Le Cornu, Milica Apostolovic, Steve Smith (as lead verifier) and Renard Teipelke.

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Executive Summary

A significant part of Kenya's socio-economic and environmental well-being stems from its forestry sector. It contributes more than 3.6% of the country's gross domestic product, employs more than 50,000 people directly, and is a backbone of the tourism industry – providing the habitat for much of Kenya's wildlife, which is a major tourism draw. **However, the country's forests are under threat due to deforestation, degradation and a lack of investment, amongst other reasons – refer to the Climate Action in the Forestry Sector in Kenya: Status Review (AECOM, 2021) for further information.**

Kenya's Nationally Determined Contribution (NDC) targets a reduction of 32% in greenhouse gas emissions by 2030 under the Paris Agreement. **The country's efforts to combat climate change rely heavily on forests that serve as carbon sinks and will therefore help to achieve this target.** Accordingly, the forestry sector is one of the country top priorities for mitigating climate change.

The objective of this Roadmap is to assist the Kenyan Government to meet its NDC commitment by contributing to the design and implementation of forestry-related projects. The Roadmap report and associated tool have been developed in line with national strategies and action plans, such as the NDC, the National Climate Change Action Plan 2018-2022 (NCCAP), and the National Tree Cover Strategy. It is intended for use by the Ministry of Environment and Forestry, as well as other parties such as financial institutions, donor agencies, private sector, and non-governmental organisations.

In developing the Roadmap, a multi-criteria analysis was performed to assess the performance of each prospective opportunity outlined in the key strategic documents against a set of criteria namely: enabling potential (activities that must be performed in order to make it possible to perform value adding activities.); ease of implementation; timescale of implementation; and timescale until effective. According to the forestry sector's climate action report, the Roadmap identifies options for overcoming the barriers and challenges that the sector faces. The identified opportunities were classified into three categories:

- *Short-term enabling opportunities:* opportunities with high enabling potential, ease of implementation, short duration of implementation and high effectiveness (2021-2022).
- *Mid-term enabling opportunities and pilot programs:* opportunities that can be implemented starting in 2023 following the successful implementation of short-term enabling opportunities. These may be delivered within 2 to 5 years.
- *Long-term enabling opportunities with high impacts on climate objectives:* enabled by short and mid-term opportunities and which could contribute very significantly to achieving Kenya's NDC objectives by 2030 and beyond.

As a result of the prioritisation exercise, three categories of target actors that would be most likely affected by these activities were identified:

- Institutional actors including government and parastatals at the local, regional, and national levels.
- The private sector (companies, industrial associations, cooperatives, etc.).
- Communities and individuals including individual small holder farmers and community members.

Several high-potential opportunities for each of the target actors have been identified within the Roadmap. This reflects an attempt to broaden the actors involved in implementation and move the focus away from the Government solely leading the implementation of forestry projects in support of the NDC.

Furthermore, the successful implementation of the Roadmap relies on effective governance arrangements. A proposed governance structure has been developed to assist the Ministry of Environment and Forestry to oversee implementation. The Roadmap proposes the appointment of a focal point anchored at a high level within the Ministry to oversee the Roadmap's refinement and implementation; a consultation group, representing the perspectives of stakeholders with an interest in the Roadmap's implementation, to assist the focal point; and several technical advisory panels to support the focal point on key technical matters. These are outlined in further detail in the report.

It should be noted that the development of a Roadmap is a collaborative process. In refining the Roadmap, additional engagement with government stakeholders, lenders, and private sector parties will be needed.

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1. Introduction

Kenya's forestry sector plays an important role in providing people with direct and indirect socio-economic and environmental benefits. However, the combined effects of several social (population growth), economic (overexploitation, poverty) and environmental (climate change) factors are threatening the sustainability of Kenya's forests. In addition, there is evidence of insufficient investment in the forestry sector.

Based on Kenya's commitment to the Paris Agreement through its Nationally Determined Contribution (NDC), the country has undertaken to reduce its greenhouse gas (GHG) emissions by 32% compared to its business-as-usual scenario of 143 MtCO₂eq by 2030 (GOK, 2020). Forests serve as carbon sinks, so they are an important part of Kenya's fight against climate change. As such, forestry is one of Kenya's priority areas for achieving its climate change mitigation targets.

The purpose of this Roadmap is to support the design and implementation of viable projects in the forestry sector to help the Kenyan Government to deliver its commitment to combat climate change, as outlined in the NDC. The Roadmap is drawn on existing strategies and action plans, such as the National Climate Change Action Plan 2018-2022 (NCCAP), as well as other forestry-focused strategies, such as the 'National Strategy for achieving and maintaining over 10% Tree Cover by 2022' (2019). It identifies options for overcoming the barriers and challenges associated with the sector, as specified in the sector's climate action report.

This Roadmap is intended to be used by the Ministry of Environment and Forestry (MoEF) as well as other actors such as financial institutions and donor agencies, non-governmental organisations (NGOs), and corporate sector organisations in supporting government initiatives and identifying the assistance required to meet Kenya's climate change targets.



2. Country and Sector Background

2.1 Context

Forests are considered as one of the most important national assets by the Government of Kenya given the economic, environmental, social and cultural benefits they provide. The forestry sector is the backbone of Kenya's tourism sector as they provide habitats for wild animals and offer grazing grounds during the dry season to support wildlife populations. Forests support and protect Kenya's Water Towers¹ - five of these water catchment areas provide 75% of the country's renewable water supplies – which in turn support the agriculture, horticulture, industrial and energy sectors. Forests also provide more than 80% of Kenya's energy consumption through the use of fuelwood and charcoal. (MoEF, 2019a). Furthermore, the forestry sector in Kenya plays an important role in contributing to direct and indirect socio-economic and ecological benefits to people. Direct benefits are derived from wood products, including timber and paper and non-wood forest products (NWFPs) such as honey, fruits, nuts, and medicinal herbs. Indirect benefits include carbon sequestration, habitat provision, air pollution attenuation and hydrological functions.

The forestry sector was estimated to contribute more than 3.6% of the country's gross domestic product in 2012 (MoEF, 2019a). It is estimated that the sector contributes about USD 62.3 million to the economy annually while employing over 50,000 people directly and another 300,000 indirectly (GOK, 2017). Job opportunities in the sector emerge from companies supplying poles, the timber processing industry, sawmills and through charcoal production and transportation.

2.2 Kenya's Forestry Sector

In 2018, Kenya's forest cover was estimated to be 5.9% of the country's total land area or 3,462,536 hectares (MoEF, 2019a). The various types of forests are highly fragmented in distribution, the most abundant being dryland forests (48.7% of the total forest in Kenya), followed by montane forests (35%), coastal forests (8.4%), western rainforests (3.5%) and forest plantations (4.5%).

Over the past 25 years, Kenya's forests have been depleted due to settlement in gazetted forests, illegal logging, forest encroachment and unsustainable grazing (GOK, 2018). This has led to a net loss in forest cover in Kenya equating to 22,973 hectare per year over the most recent reporting period (2014-2018).

With the population continuing to rise at a rate of just over 2% per annum (World Bank, 2020), there is an increasing demand for food production, leading to the continued encroachment of agricultural land into forest lands (both public and private). Other drivers of deforestation and forest degradation include the overexploitation of wood fuel and charcoal, the increased demand for forestry products in the domestic market, inefficient technologies and practices in timber processing resulting in low quality wood supply, as well as unsustainable management practices in forest plantations, among others.

To facilitate its transition to a middle-income country, Kenya has established an ambitious commercial, industrial and infrastructural development programme based on Vision 2030 targets (GOK, 2022). According to (MoEF, 2019b), current and planned developments are concentrated in fragile ecosystems including dryland forests and woodland areas, leading to planned deforestation and forest degradation. These

Figure 1: Forest cover in Kenya



Source: (MoEF, 2019b)

¹ A water tower is an upland area with characteristics to support reception, infiltration, percolation and storage of rainfall which is gradually released into a drainage basin (The Kenya Water Towers Watch, (<http://kenya.restorationatlas.org/>))

(deforestation and forest degradation) are reinforced by weak institutional capacities and poor enforcement of forest laws and regulations. Most of the forested land in Kenya is under community and private ownership (77%) while the remaining 23% is under public management (GOK, 2016). This raises several challenges in relation to forest conservation and investment in the forestry sector. The lack of sufficient incentives to encourage community and private landowners to establish forests on their own land also jeopardises the achievement of the 10% tree cover goal by Kenya.

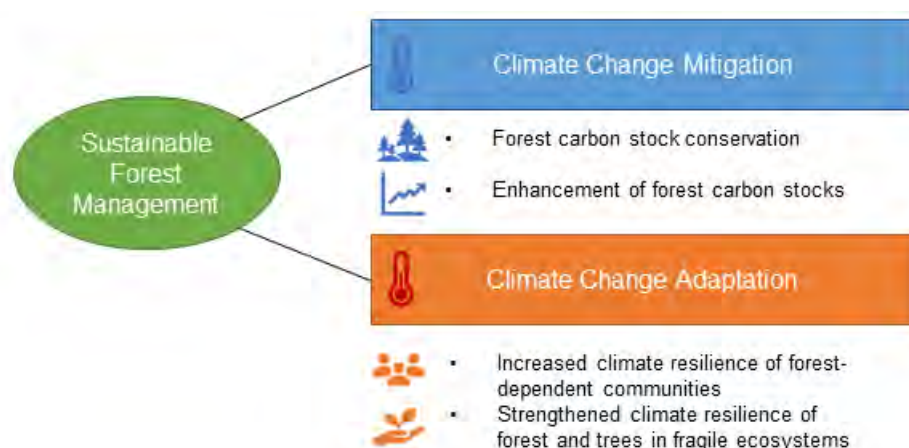
2.3 Climate Change in Kenya

Forests are a vital component of Kenya's fight against climate change through their roles as carbon sinks. They play an important role in regulating the earth's global climatic system. They capture carbon dioxide, including emissions from anthropogenic sources, and from the atmosphere and convert it, through photosynthesis into living biomass. Forests also store carbon in forest soils, absorbed through leaf litter, woody debris and roots (UN, 2019).

Actions to increase or maintain forest cover sustainably have, not only important carbon benefits, but adaptation benefits as well, as outlined in Figure 2. Other benefits from forests include preventing flooding and landslides and reducing erosion and sediment discharge into rivers. They also contribute to water availability by slowing the loss of rainwater runoff, which demonstrates the importance of reforestation and rehabilitating the main water towers and water catchment areas (DfID, 2016).

In addition, as forests are impacted by climate change, including extreme weather events, sustainable forest management secures forest ecosystems and enhances the environmental, social-cultural and economic services they provide. This includes benefits, such as the protection of soil, water, production of goods, conservation of biodiversity, provision of socio-cultural services, livelihood support and poverty alleviation (FAO, 2010).

Figure 2: Forest management and climate change mitigation and adaptation



Source: adapted from FAO (2010)

The land use, land use change and forestry (LULUCF) sector is the second largest contributor to Kenya's greenhouse gas (GHG) emissions after agriculture (GOK, 2018). The Government of Kenya estimates the Forest Reference Emission Level to be 52 MtCO₂eq per year necessary for reducing emissions from deforestation and forest degradation (REDD+) activities. This historical average is also used by the Government of Kenya to estimate future net emissions from REDD+ activities under the business-as-usual-scenario.

Forests in montane and dryland regions have accounted for the largest percentage of REDD+ emissions between 2002 and 2018. Poorly managed plantations have also become a source of emissions due to forest cover depletion.

Under the Paris Agreement, Kenya has committed to a GHG emissions abatement target of 32% by 2030 relative to the business as usual (BAU) scenario of 143 MtCO₂eq (GOK, 2020)². Additionally, Kenya developed the National Climate Change Action Plan (NCCAP) 2018-2022, where forestry is among the climate change priority areas. In the NCCAP 2018-2022, the forestry sector has a target of reducing GHG emissions by 10.4 MtCO₂eq by 2023 through forest restoration, afforestation, reforestation and reduction of deforestation (GOK, 2018) with a technical maximum abatement potential of 40.2 MtCO₂eq per year by 2030 (GOK, 2018).

Enhancing land cover mapping processes, implementing a National Forest Inventory and non-CO₂ emissions are key to improving these estimates.

2.4 Financing Mechanisms in the Forestry Sector

The Government of Kenya has estimated that implementation of its NDC to cost in excess of USD 62 billion up to 2030 (GOK, 2020). These financing needs have been broken-down further in the NCCAP in which it is estimated that USD 16.3 billion is needed to implement priority actions for the 2018-2022 period. However, only 3.5% (out of USD 16.3 billion) was estimated for priority actions in the forestry, wildlife and tourism sector. Looking specifically at the forestry sector, the total climate-related investment in 2017/2018 amounted to USD 34 million, of which the majority (66%) was provided by the private sector, mostly through grants for tree planting activities. The numbers tracked are significantly lower than the USD 440 million needed to meet the constitutional target of achieving and maintaining over 10% tree cover by 2022 published in May 2019 (GOK, 2019). The same strategy also estimated the cost of inaction at USD \$1.5 billion by 2022.

Overall, there is a significant shortfall in climate-related investment in the forest sector. There is a need for continued public sector finance (domestic and international) to catalyse private finance. Efforts to conserve natural forests, improve plantation quality, and ensure the sustainable provision of goods and services from forests, require partnerships between local communities, commercial interests, and the Government. Incentives must be provided in order to convey signals to the private sector to invest in environmentally friendly or energy-efficient solutions. Access to innovative financial mechanisms is required to support long-term forestry initiatives and to promote private sector involvement, as this is currently lacking in Kenya.

Implementation of climate mitigation measures in the forestry sector to support achieving the NDC will include making progress towards achieving a tree cover of at least 10% of Kenya's land area, providing better access to clean energy and improving energy efficiency and, promoting climate-smart agriculture to reduce deforestation while improving productivity (GOK, 2015a). Significant amounts of finance need to be directed to the forestry sector, in order for Kenya to achieve its NDC commitment targets.



Photo by Jamies X on Pexels

² Kenya submitted a revised version of its first NDC in December 2020, in which its GHG abatement target was increased from 30% (as in its NDC submitted in 2015) to 32% compared to a BAU scenario.

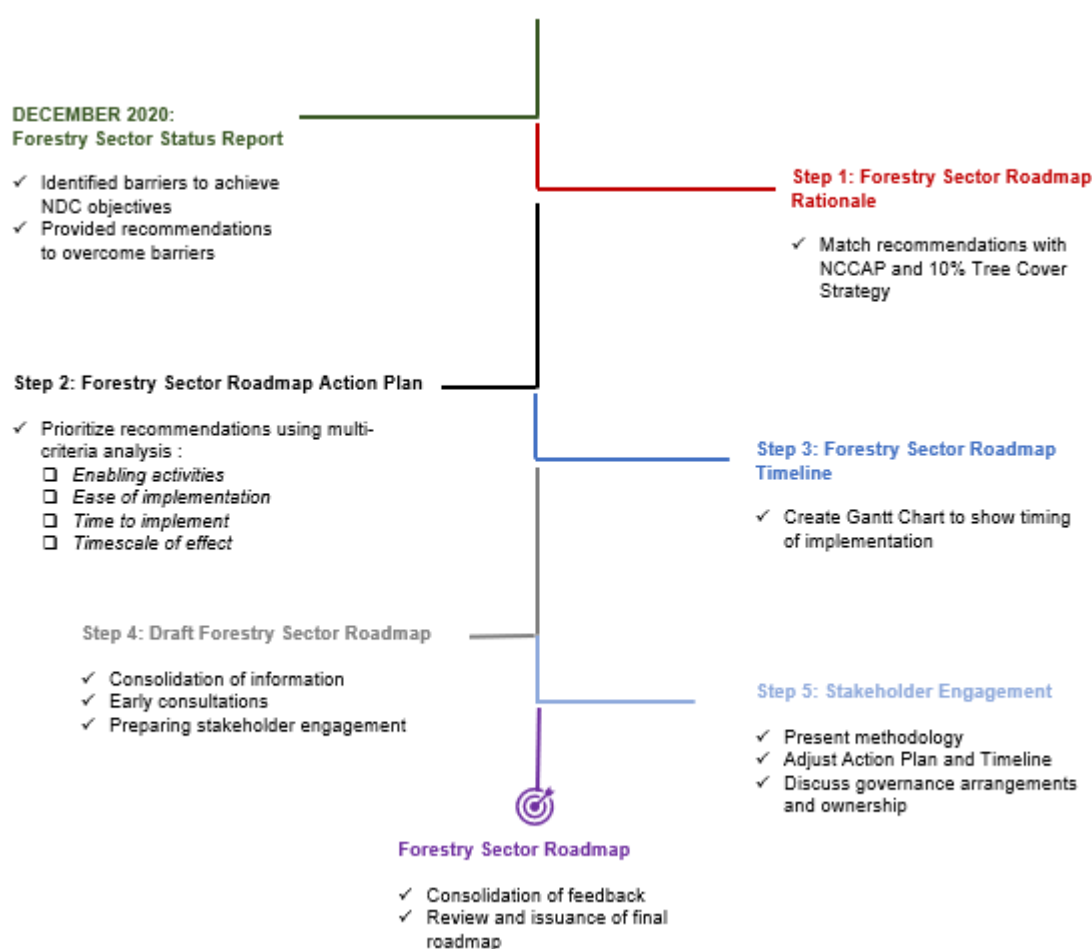
3. Roadmap Development

Developing a Roadmap facilitates the planning of activities by highlighting key focus areas and priorities. It articulates the reasoning for pursuing the NDC's goals via a strategic overview of the major objectives and key performance indicators for achieving success. Once established, the Roadmap can be used to track progress.

This document provides a Roadmap for the Forestry Sector to support the Government of Kenya, in particular the MoEF, and its stakeholders to draw a path towards achieving the country's NDC goals. While the Forestry Sector Roadmap will be owned by the MoEF, it will be useful to a broader range of stakeholders to help guide and inform their activities in the sector.

Developing and implementing a Roadmap is an iterative process. The early stages in developing this Roadmap are shown in Figure 3 below. This current version will be improved through engagement with relevant stakeholders across Kenya, in order to reflect priorities, ongoing processes, planned activities and successes already achieved.

Figure 3: Overall process used to develop the Forestry Sector Roadmap



Source: AECOM, 2021.

The following sections outline how the Roadmap was developed.

3.1 Stocktaking Analysis

The analysis of the existing strategic documents provides stakeholders with an abundant list of actions, recommendations and opportunities that are likely to be undertaken to achieve the NDC goals.

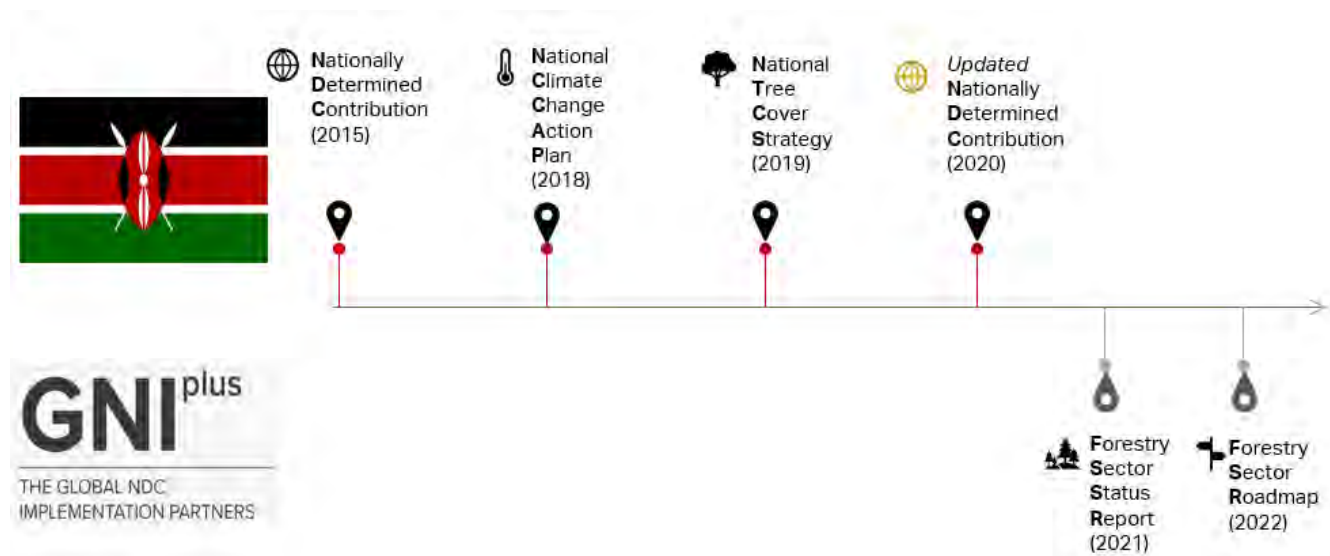
Recognising the need for climate action, the Kenyan Government has committed to international climate action (mitigation and adaptation) initiatives since 2015. The NDC identifies forestry as a key sector for achieving the country's overall goal of reducing GHG emissions by 32% by 2030. The NCCAP (2018-2022) sets up the mechanisms to ensure that the country implements mitigation measures in

accordance with the NDC whereas the National Tree Cover Strategy identifies the implementation mechanisms to achieve and maintain the constitutional goal of 10% forest cover by 2022.

The 'Climate Action in the Forestry Sector in Kenya: Status Review' report (AECOM, 2021) developed under the GNI^{plus} project has been used in conjunction with the above-mentioned initiatives to provide detailed information on the status of the forestry sector in the country. The Status Review concludes by highlighting the challenges, barriers and threats facing the forestry sector and also suggests opportunity categorised as financial, legal and technical for further development by a variety of stakeholders.

Hence, the NDC, the NCCAP (2018-2022), the National Tree Cover Strategy and the Status Review of Climate Action in the Forestry Sector in Kenya were used to inform the Roadmap, as outlined in [Figure 4](#). Please refer to Appendix A Roadmap for a detailed version of the Roadmap analytical framework, showing how these documents articulate together.

Figure 4: Timeline of climate-related strategies feeding into the Roadmap



Source: adapted from 'Climate Action in the Forestry Sector in Kenya: Status Review' report (AECOM, 2021).

3.1.1 KENYA'S NATIONALLY DETERMINED CONTRIBUTION – UPDATED (2015-2030)

Kenya submitted its revised NDC in December 2020, following the calls for enhanced ambition under the UNFCCC Paris Agreement. This conditional³ revised NDC identifies forestry as a key sector to achieve the overall GHG emissions abatement target of 32% by 2030. Actions in the forestry sector to support achieving the NDC will include (GOK, 2020):

- Making progress towards achieving a tree cover of at least 10% of the land area in Kenya,
- Providing better access to clean energy and improving energy efficiency,
- Promoting climate-smart agriculture to reduce deforestation while improving productivity.

3.1.2 NATIONAL CLIMATE CHANGE ACTION PLAN (2018-2022)

The National Climate Change Action Plan (NCCAP) 2018-2022 aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development in a manner that prioritises adaptation and undertakes actions, where possible, in a way that limits GHG emissions to ensure that the country achieves its mitigation-related actions under its NDC.

The NCCAP 2018-2022 contains seven priority climate action areas and sets out the strategic objectives for these areas, and main actions to deliver them. Forestry, wildlife and tourism is identified as a priority area, with the objective to increase forest cover to 10% of the total land area; rehabilitate

³ Kenya's updated NDC, submitted in December 2020, has slightly strengthened its 2030 target. Whereas the previous NDC set the target of a 30% emission reduction below business as usual (BAU) levels by 2030, and was fully dependent on international support, Kenya now commits to reducing BAU emissions by 32% by 2030, with part of this new target not conditional on financial support. Kenya still has room for improvement, even with the addition of an unconditional target.

degraded lands, including rangelands, increase resilience of the wildlife and tourism sector; afforest and reforest degraded and deforested areas in counties; implement initiatives to reduce deforestation and forest degradation; restore degraded landscapes (arid and semi-arid lands or "ASALs" and rangelands); promote sustainable timber production on privately-owned land; and conserve land areas for wildlife.

3.1.3 NATIONAL STRATEGY FOR ACHIEVING AND MAINTAINING OVER 10% TREE COVER BY 2022

The National Strategy for achieving and maintaining over 10% tree cover by 2022 (2019) provides for a series of interventions to achieve and maintain the Constitutional target of 10% tree cover by 2022. The intervention areas include the rehabilitation of degraded natural forests in gazetted forests and water towers; the rehabilitation of degraded water towers and wetlands outside gazetted forests; the rehabilitation of degraded mangrove ecosystems; the establishment of commercial private forests plantations as well as restocking industrial forest plantation areas; the rehabilitation of degraded national parks, game reserves and wildlife conservancies; and the greening of infrastructure (roads, railway lines, dams), schools, businesses and Ministries, Departments and Agencies.

3.1.4 BARRIERS TO CLIMATE ACTION IDENTIFIED IN THE CLIMATE ACTION IN THE FORESTRY SECTOR STATUS REVIEW

The 'Climate Action in the Forestry Sector in Kenya: Status Review' report (AECOM, 2021) provides stakeholders in the forestry sector including both public and private sectors, and civil society organisations with a detailed overview of the status of the forestry sector in Kenya, with a focus on the current and future impacts of climate change. It aims to highlight some of the main challenges the country's forestry sector is facing, whilst also highlighting the areas of opportunity and where capacity needs to be developed in order to help meet domestic and international climate-forestry commitments. Barriers and recommendations to overcome those challenges are related to forest cover increase, energy efficiency and access to clean energy in particular. The analysis in the report is structured around three types of actors: institutional actors, private sector/organisations, and individuals/communities.

3.2 Prioritisation of Identified Opportunities and Timeline

Having identified the long list of actions from the various reference documents, as outlined above, the next step saw the development of a multi-criteria analysis (MCA) that was used to evaluate the performance of each proposed action according to the set of criteria shown in Table 1. This allowed for the prioritisation of actions, recommendations and opportunities identified during the stocktaking analysis.

The first criterion, enabling potential is useful for identifying those opportunities that will make subsequent opportunities possible. The opportunities with enabling potential are usually capacity building activities, removing current barriers to more structural opportunities and can be seen as preconditions in effect.

Ease of implementation helps understand the complexity associated with implementation of the opportunity, in terms of the number of stakeholders to involve and the extent of outreach necessary. The last two criteria refer to two temporal dimensions, essential in project planning: the timescale of implementation represents the time needed to implement an opportunity and the timescale until effective is the time required until the effects of the opportunity are felt.

These criteria may be weighed according to relevance and importance in achieving climate change objectives.

Table 1: Criteria used in the Multi-Criteria Analysis

Criteria	Definition	Score from 1 to 5
Enabling potential	Opportunities that must be delivered in order to facilitate the delivery of other value adding opportunities.	1: very low 2: low 3: medium 4: good 5: excellent

Ease of implementation	The degree of complexity of an opportunity in terms of its implementation	1: very low 2: low 3: medium 4: good 5: excellent
Timescale of implementation	Time required to implement an opportunity	1: very long (more than 5 years) 2: long (2-5 years) 3: moderately long (1 to 2 years) 4: short (6 to 12 months) 5: fast (less than 6 months)
Timescale until effective	Time until the effects of the opportunity are felt	1: very long (more than 5 years) 2: long (2-5 years) 3: moderately long (1 to 2 years) 4: short (6 to 12 months) 5: fast (less than 6 months)

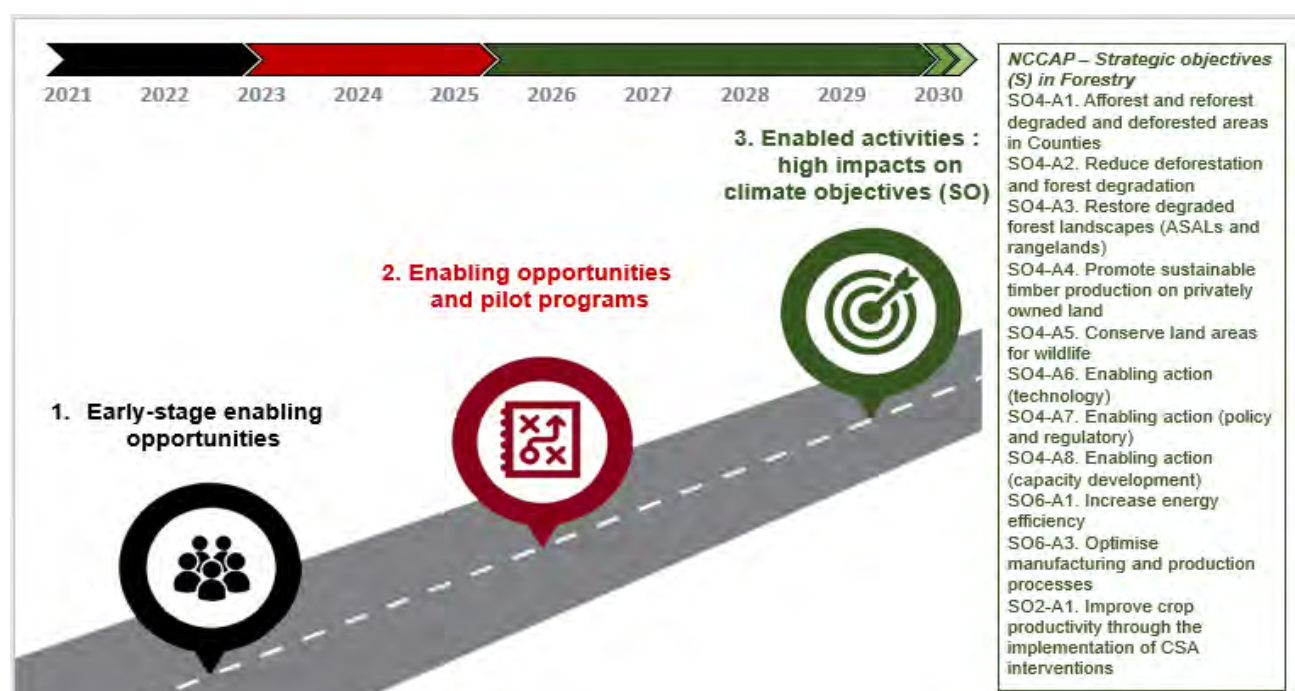
Source: AECOM, 2021

The authors conducted an MCA to test the methodology and provide an example for future replication. This generated an overall score for each opportunity and allowed the authors to prioritise the opportunities according to the following categories:

- Short-term enabling opportunities: opportunities with high enabling potential, ease of implementation, short duration of implementation and high effectiveness (2021-2022 for implementation).
- Medium-term enabling opportunities and pilot programs: opportunities that can be implemented starting in 2023 following the successful implementation of short-term enabling opportunities. These may be effective in 2 to 5 years.
- Long-term enabling opportunities with high impacts on climate objectives: enabled by short- and medium-term opportunities and which will contribute significantly to achieving Kenya's NDC objectives by 2030 and beyond.

The Figure 5 below synthesises the categorisation of opportunities behind the Roadmap. Refer to Appendix C Roadmap for a detailed version of the Gantt Chart that can be used for tracking results.

Figure 5: Opportunities prioritization for the Roadmap



Source: AECOM, 2021.

An excel tool has been developed comprising a Forestry Sector analytical framework, barriers analysis and recommendations, stocktaking analysis of existing strategic documents such as the NDC, NCCAP, and National Tree Cover Strategy, the multicriteria analysis, the timeline of the opportunities

Figure 6 is a screenshot from a page of the Forestry Sector Roadmap tool. For further details, see spreadsheets of the Excel roadmap provided in Appendix C.

Figure 6: Screenshot from a page of the Forest Sector Roadmap excel tool

The Sustainable Livelihoods Framework five capitals adapted approach		Analytical Framework (see Appendix A)			Multi-Criteria Analysis (MCA) - ranking of activities according to:					SHORT TERM Enabling activities		MID-TERM Enabling activities and pilot programs		LONG TERM Enabled activities ; High impact on climate objectives					
Types of actor	Dimensions	Recommendations made in the Forestry Readiness Brief (2020) to overcome identified barriers (F: Forestry-related / E: Energy-related)	NCCAP strategic objectives (SO) and actions (A)	National Tree Cover Strategy interventions	Enabling potential (1: No; 5: Yes)	Ease of implementation (1: very low; 5: excellent)	Timescale of implementation (1: very long; 5: fast)	Timescale until effective (1: very long; 5: fast)	Overall performance score (4= low ; 20= high)	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Institutional	Forest Policy, Law and Regulation	F1: Increase afforestation and reforestation on public and private lands	S02-A1, S04-A1, S04-A7	9.1.1, 9.1.2, 9.1.9, 9.1.15, 9.1.16, 9.2.1, 9.4.1, 9.5.1, 9.7.1, 9.8.1, 9.9	1	3	2	2	8										
		F2: Develop forest management code of good practice and guidelines for plantation forest management	S04-A1, S04-A7	9.1.1, 9.1.2, 9.2.1, 9.4.1	5	3	4	3	15										
		F3: Develop extension services such as training in rural areas on policies and regulations governing the sector	S04-A1, S04-A2, S04-A3, S04-A10, S04-A11, S04-A12, S04-A13, S04-A14, S04-A15, S04-A16, S04-A17, S04-A18, S04-A19, S04-A20, S04-A21, S04-A22, S04-A23, S04-A24, S04-A25, S04-A26, S04-A27, S04-A28, S04-A29, S04-A30, S04-A31, S04-A32, S04-A33, S04-A34, S04-A35, S04-A36, S04-A37, S04-A38, S04-A39, S04-A40, S04-A41, S04-A42, S04-A43, S04-A44, S04-A45, S04-A46, S04-A47, S04-A48, S04-A49, S04-A50, S04-A51, S04-A52, S04-A53, S04-A54, S04-A55, S04-A56, S04-A57, S04-A58, S04-A59, S04-A60, S04-A61, S04-A62, S04-A63, S04-A64, S04-A65, S04-A66, S04-A67, S04-A68, S04-A69, S04-A70, S04-A71, S04-A72, S04-A73, S04-A74, S04-A75, S04-A76, S04-A77, S04-A78, S04-A79, S04-A80, S04-A81, S04-A82, S04-A83, S04-A84, S04-A85, S04-A86, S04-A87, S04-A88, S04-A89, S04-A90, S04-A91, S04-A92, S04-A93, S04-A94, S04-A95, S04-A96, S04-A97, S04-A98, S04-A99, S04-A100	9.1	3	2	2	3	10										
		F4: Promote sustainable land-use planning policies and initiatives	S02-A1, S04-A1, S04-A2, S04-A3, S04-A4, S04-A5, S04-A6, S04-A7, S04-A8, S04-A9, S04-A10, S04-A11, S04-A12, S04-A13, S04-A14, S04-A15, S04-A16, S04-A17, S04-A18, S04-A19, S04-A20, S04-A21, S04-A22, S04-A23, S04-A24, S04-A25, S04-A26, S04-A27, S04-A28, S04-A29, S04-A30, S04-A31, S04-A32, S04-A33, S04-A34, S04-A35, S04-A36, S04-A37, S04-A38, S04-A39, S04-A40, S04-A41, S04-A42, S04-A43, S04-A44, S04-A45, S04-A46, S04-A47, S04-A48, S04-A49, S04-A50, S04-A51, S04-A52, S04-A53, S04-A54, S04-A55, S04-A56, S04-A57, S04-A58, S04-A59, S04-A60, S04-A61, S04-A62, S04-A63, S04-A64, S04-A65, S04-A66, S04-A67, S04-A68, S04-A69, S04-A70, S04-A71, S04-A72, S04-A73, S04-A74, S04-A75, S04-A76, S04-A77, S04-A78, S04-A79, S04-A80, S04-A81, S04-A82, S04-A83, S04-A84, S04-A85, S04-A86, S04-A87, S04-A88, S04-A89, S04-A90, S04-A91, S04-A92, S04-A93, S04-A94, S04-A95, S04-A96, S04-A97, S04-A98, S04-A99, S04-A100	9.1.1, 9.1.2, 9.1.10, 9.1.15, 9.1.16, 9.1.19, 9.1.20, 9.2.1, 9.2.2, 9.2.3, 9.4.1, 9.4.2, 9.5.1, 9.5.1.1, 9.7.1, 9.8.1, 9.9	4	2	2	3	11										
		F5: Promote deforestation-free land-use activities, including mining.	S02-A1, S04-A2, S04-A6, S04-A7, S04-A8	9.1.1, 9.1.2, 9.1.10, 9.1.15, 9.2.1, 9.2.3, 9.2.10, 9.2.11, 9.3.1, 9.4.1, 9.5	4	3	2	3	12										
		F6: Clarify rights on emission reductions or removals from land-based activities from REDD+ projects.	S04-A7, S04-A8	9.2.1	5	4	5	4	18										
	Forest Governance	F7: Promote sustainable forest management plans (SFM planning)	S04-A1, S04-A2, S04-A4, S04-A6, S04-A7, S04-A8	9.1.1, 9.1.2, 9.1.10, 9.2.1, 9.2.3, 9.2.11, 9.2.12, 9.4.1, 9.4.2, 9.5.1, 9.7	4	5	2	2	13										
		F8: Provide adequate resources and training for forest control and forest monitoring, including forest datasets	S04-A6, S04-A7, S04-A8	9.10.1, 9.10.2, 9.20	5	5	3	4	17										
		F9: Promote the concept of decentralised, multi-party roundtables on forest governance	S04-A1, S04-A2	9.2, 9.7	5	3	4	3	15										
		F10: Promote cross-ministry projects to integrate Climate-Smart Agriculture (CSA) practices within the forestry sector, including agroforestry, integrated livestock and apiculture management	S02-A1, S04-A1, S04-A3	9.5, 9.6	4	2	3	4	13										

Source: AECOM, 2021.

3.3 Detailed Opportunities

Following the prioritisation exercise outlined above, the opportunities were then organised according to the three types of targeted actors most likely impacted by these actions, as defined in the Status Review of Climate Action in the Forestry Sector in Kenya (AECOM, 2021):

- Institutional actors – such as Government at both National and County levels, as well as parastatals.
- Private sector – including companies, industrial bodies, associations and coordination/cooperative groups.
- Individuals and communities.

Note: It is important to note that the authors have proposed opportunities based on technical judgment and supporting evidence gathered during the literature review. Additional ground-truthing may be required by stakeholders using the Roadmap (i.e., the MoEF and other users) to further validate the results.

3.3.1 INSTITUTIONAL ACTORS

Figure 7 lists key opportunities identified for institutional actors – including national and local governments, and parastatals. The focus here is on three types of opportunities up to 2030: short-term (2021-2022), medium-term (2023-2025) and long-term (2025-2030).

Figure 7: Opportunities for institutional actors in the short, medium, and longer terms

Early stage enabling opportunities 2021-2022	Enabling opportunities and pilot programs 2023-2025	Enabled activities – high impact on climate objectives 2025-2030
<p>Demonstrate the climate benefits of afforestation-reforestation, sustainable management of forests and forest conservation</p> <p>Review and simplification of the charcoal regulatory framework</p> <p>Clarify rights on emission reductions or removals from land-based activities from REDD+ projects</p> <p>Develop forest management code of good practice and guidelines for plantation forest management</p> <p>Provide adequate resources and training for forest control and forest monitoring, including forest datasets</p> <p>Promote the concept of decentralised, multi-party roundtables on forest governance</p> <p>Develop models for the replication of Payment for Ecosystem Services (PES) schemes across the country to generate a sustainable financial flow to support forest conservation</p> <p>Policy measures to increase charcoal production quality (product standards, incentives for sustainable charcoal, communication campaigns on reducing fuel/charcoal consumption)</p> <p>Review the licensing process for professional and non-professional charcoal producers</p> <p>Improved governance and tighter restrictions on charcoal producers and the supply chain</p> <p>Creation of Government scheme to promote efficient technologies</p>	<p>Develop extension services such as training in rural areas on policies and regulations governing the sector</p> <p>Promote sustainable land-use planning policies and initiatives</p> <p>Promote deforestation-free land-use activities, such as mining</p> <p>Promote sustainable forest management plans (SFM planning)</p> <p>Promote cross-ministry projects to integrate Climate-Smart Agriculture (CSA) practices within the forestry sector, including agroforestry, integrated livestock and agriculture management</p> <p>Promote cost-effective technologies to achieve high emission reductions at large scale: (i) high yield processing units (improved kilns and retorts) for charcoal production, both at industrial and artisanal level, and (ii) improved cookstoves for urban and rural households</p>	<p>Increased afforestation and reforestation on public and private lands</p> <p>Provide financial support for the most cost-effective emission reductions/removals activities</p> <p>Incentives to promote sustainable forest management, afforestation-reforestation and forest conservation</p> <p>Enhance tax or cost of carbon intensive fuels / provide tax relief on Clean energy fuels (VAT exemption)</p> <p>Provide resources, including extension services (training opportunities)</p>

Source: AECOM, 2021.

3.3.2 PRIVATE SECTOR/ORGANISATIONS

In addition to the opportunities for institutional actors, our analysis identified a series of opportunities for the private sector, shown in Figure 8.

Figure 8: Opportunities for private sector/organisations in the short, medium, and longer terms

Early stage enabling opportunities 2021-2022	Enabling opportunities and pilot programs 2023-2025	Enabled activities – high impact on climate objectives 2025-2030
Raise public awareness of alternative fuels, co-benefits of sustainable forestry, etc.	Train forest owners and operators on nursery management, plantation establishment and maintenance, silvicultural techniques, harvesting and renewal practices, as well as agroforestry practices and their benefits	Implement simplified sustainable forest management plans (code of good practice) for forest owners
Raise awareness of co-benefits of sustainable forestry despite lower rate of return, hence the need for dedicated financing mechanisms	Promote community land-use planning	Implement community sustainable forest management plans in conjunction with integrated forest-crop-livestock management practices that identify potential grazing areas in conflicted areas (CSA practices)
Raise awareness within local lending and financial institutions of energy efficient technologies and their benefits; to help reduce the perceived level of risk	Develop micro-credit and other forms of rural credit plus provide incentives conditional on the success of forest plantation establishment.	Implement community land use planning to clarify land tenure rights locally
Assess land productivity through laboratory soil analysis and obtaining quality seedlings from research institutions such as Kenya Forest Research Institute	Promote local sustainable wood fuel production planning based on biomass production potential	Establishment of forest plantations dedicated to wood fuel production
Diversify tree species used in plantations to make the most of marginal lands. Develop the concept of “ecozones” and “silvicultural guides”	Promote uptake of improved kilns, retorts and cookstoves	
Provide mechanisms to secure long term forest investments by private individuals	Raise awareness within local lending and financial institutions of energy efficient technologies and their benefits; to help reduce the perceived level of risk. This could allow for an enhanced uptake amongst individuals	
Provide vocational training and raise awareness of improved kilns and retorts		
Awareness raising amongst individuals to demonstrate the rationale and benefits for more efficient technologies and their paybacks		
Raise awareness of affordable, deforestation-free alternative sources of energy		
Incentivise improved kilns, retorts and cookstoves to reduce their cost		
Provide credits/loans for more expensive investments (industrial furnaces, boilers and semi-industrial kilns and retorts)		

Source: AECOM, 2021.

3.3.3 INDIVIDUALS AND COMMUNITIES

Finally, **Figure 9** shows key opportunities for individuals and communities in the short, medium and longer terms up to 2030.

Figure 9: Opportunities for individuals in the short, medium, and longer terms

Early stage enabling opportunities 2021-2022	Enabling opportunities and pilot programs 2023-2025	Enabled activities – high impact on climate objectives 2025-2030
<p>Provide support to better understand forest products value chains</p> <p>Raise awareness of co-benefits of sustainable forestry despite lower rate of return, hence the need for dedicated financing mechanisms</p> <p>Provide mechanisms to secure long term forest investments</p> <p>Study the value-chains of alternative environmentally friendly sources of energy and raise awareness of those (e.g., briquettes)</p> <p>Study value-chains and raise awareness of more efficient technologies (improved kilns and retorts, furnaces, boilers)</p>	<p>Enable easy access to loans for mass production of energy efficient technologies</p> <p>Provide training in sustainable forest management planning, integrated forest-crop-livestock management, grazing plans, harvesting and wood processing</p> <p>Provide support to develop forest-friendly local community land-use plans</p> <p>Diversify tree species used in plantations to make the most of marginal lands. Develop the concept of “ecozones” and “silvicultural guides”</p> <p>Increase tax credits to stimulate investments in the forestry sector</p> <p>Promote local sustainable wood fuel production planning based on biomass production potential</p>	<p>Enhance raw material quality through implementing silvicultural good practices (thinning, pruning, etc.)</p> <p>Incentivise the biomass-energy sector to promote the uptake of more efficient combustion technologies</p> <p>Incentivise forest plantation through public and private planting schemes, including training opportunities in rural areas</p> <p>Strengthening of charcoal producers' associations (CPAs) to disseminate good practice and raise awareness among operators</p> <p>Incentivise the biomass-energy sector to promote the uptake of more efficient combustion technologies</p>

Source: AECOM 2021.

4. Project Concept Note

During the development of the Climate Action Status Report (AECOM, 2021) as well as the Roadmap, it was identified that the forestry sector lacked forestry-related project-specific concept notes that could be used to attract private sector investment and involvement in forestry related projects. A project concept note template was therefore developed, aligned with a number of international financial institutions' project investment review criteria. The key information incorporated in the template includes:

- Project purpose and rationale
- Key stakeholders and beneficiaries
- Project status
- Alignment with national and international strategies and frameworks
- Alignment with the UN Sustainable Development Goals
- Project financial information
- Project risks and mitigation measures

Given the numerous projects included in the forestry sector Roadmap and the identification of a large number of high priority projects for the sector through the MCA, it was not possible to develop concept notes for all of them.

An example project was instead selected, for which a concept note was prepared. The project was selected on the basis of professional judgment on the part of the authors, consideration of the potential costs of the project, the purpose, outputs, key beneficiaries, and critical activities required to deliver the project, together with risks factors, understanding of climate change resilience and mitigation potential, and ease of implementation. The title of the example project concept note was: **'Improving sustainability and efficiency across forest product value chains in Kenya'**. The example concept note can be found in Appendix B.

The template and example have been developed to steer the preparation of future concept notes for other forestry sector projects listed in the Roadmap. The template can be easily modified to target the criteria of different donors, investors, and development partners interested in sponsoring forestry sector projects in Kenya.

The example concept note was prepared by the GNI^{plus} team. Any views, opinions, assumptions, statements, and recommendations expressed in the note are those of the GNI^{plus} team and do not necessarily reflect the official policy or position of the Ministry of Environment and Forestry or the donor. Any quantitative estimates should be regarded as approximations.

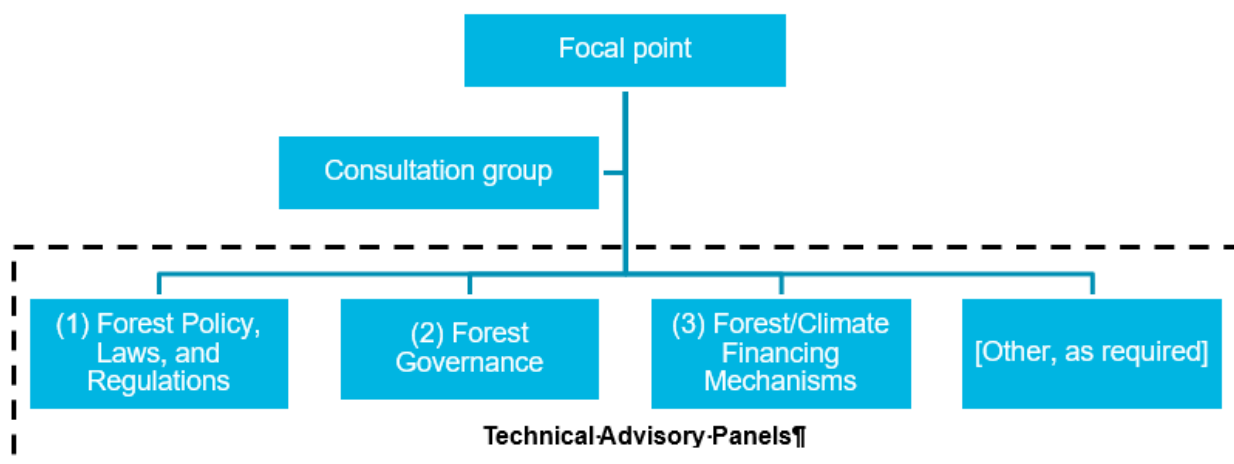


Photo by Emily Le Cornu | Mt Elgon

5. Governance Arrangements for Roadmap Implementation

Governance arrangements are of significant importance for the effective implementation of the Roadmap. This section outlines a proposed governance structure, that could be led by the MoEF.

Figure 10: Proposed governance structure for effective implementation of the Roadmap



Source: AECOM, 2021.

5.1 Roadmap Focal Point

The MoEF should be responsible for overseeing the Roadmap refinement and implementation. As such, an MoEF-appointed advisor ("focal point") should be anchored at a high level within the MoEF. The focal point's main task should be to take the lead in monitoring the implementation of the Roadmap, track progress, support decision-making and provide guidance, as well as ensure proper coordination and collaboration with the stakeholders involved in the implementation of project activities.

5.2 Consultation Group

The consultation group should provide a forum to represent the views of the stakeholders that have an interest in the implementation and monitoring of the Roadmap. It should include representatives from other ministries and government bodies, international NGOs, domestic civil society organisations, private sector, academic institutions as well as international finance institutions and development partners. The focal point is responsible for regularly liaising with this group to inform them on progress made towards the Roadmap targets.

5.3 Technical Advisory Panels

Three technical advisory panels on (1) Forest Policy, Laws, and Regulations, (2) Forest Governance, and (3) Forest/Climate Financing Mechanisms could be established. These panels should be responsible for supporting the focal point by providing technical recommendations with respect to their specialist areas. Members of these panels may be recommended by the Consultation Group and officially designated by MoEF. They may include technical staff from different government ministries and agencies, representatives from civil society, as well as non-governmental organisations and independent experts.

6. Next Steps

At this stage in the development of the Roadmap, broader interaction with other government agencies will help the MoEF to take ownership of the Roadmap.

An interactive training session was conducted to assist stakeholders through the process of setting up a roadmap so that they may implement the recommended approach to monitor their projects in the future. However further capacity building and mainstreaming of the work is needed to roll out to a broader audience and enhance uptake of the tool.

Detailed proposals for future steps to support the development and implementation of the forestry sector Roadmap are detailed below.

6.1 Enhancing the Ministry of Environment and Forestry Ownership

It is recommended that the Roadmap be presented to the MoEF, along with other relevant government agencies, so as to obtain feedback.

A transition towards MoEF ownership of the Roadmap is required. Individual and group interviews with staff at the MoEF can help to further refine the Roadmap, including the review of the multicriteria analysis in terms of prioritising the opportunities identified in the prior phase of Roadmap development.

A focal point within the MoEF should be identified at this stage. Members of the Consultation Group as described in Section 5.2 should also be identified. The Consultation Group should later be in charge of recommending the Technical Working Groups and their members, which should be officially designated by the MoEF.

6.2 Stakeholder Engagement Phase

The implementation of the Roadmap also requires the participation of a network of actors to deliver the numerous opportunities identified in the Roadmap. An in-depth stakeholder mapping exercise is then required by MoEF in order to establish an inclusive consultation process and establish the most appropriate format for future consultations.

During this phase, it would also be helpful to consider establishing consultation mechanisms through which Government representatives, the private sector, development partners and NGOs including civil society, can contribute to the finalisation of the Roadmap.

6.3 Roadmap Deployment Phase

Upon finalisation of the Roadmap, it is suggested that the MoEF officially designate the focal point and members of the Consultation Group.

The focal point, in collaboration with the Consultation Group, would undertake the steps as outlined in [Table 2](#).

Table 2: Activities for finalising and implementing the Roadmap

Activities / actions	Proposed timeframe
Identify the members of the three Technical Advisory Panels	Month 1
Prepare a detailed work plan to develop a project portfolio and logical framework to carry out project analysis (guidelines, KPIs) based on the Roadmap	Month 2
Identify climate-related financial streams available to support the implementation of the Roadmap	Month 3
Develop a project template form that will be used by project developers to show how their project fits in the Roadmap (see example in Appendix C – early-stage project concept note)	Month 3

Identify early opportunities and pilot projects to be implemented and provide institutional, technical and/or financial support for their implementation (2022 and after)	Month 4 – Month 16 (with regular onward review)
Meet regularly with the Technical Advisory Panels (e.g., once a quarter / 4 meetings per year) to ask for support/advice on delivering the projects (2022 and after)	Month 1 (onwards)
Meet regularly with the Consultation Group (e.g., 2 meetings per year) to report on progress and gather feedback (2022 and after)	Month 1 (onwards)
Help the project developers to seek funding for the implementation of the Roadmap (2022 and after)	Year 1 (onwards)
Monitor progress and periodically evaluate implementation of the Roadmap (2022 and after)	Year 1 (onwards)

Source: AECOM, 2021.

7. References

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Appendix A: Overview of the Methodologies for Developing the Forest Sector Roadmap

Analytical Framework

The objective of this analytical framework is to ensure that the projects and initiatives that mark out the Roadmap meet the strategic objectives and priority actions listed in the NCCAP. Thus, the first two columns of the table represent the main inputs of the analysis, namely the strategic objectives (SO), the priority actions (A) and the expected outcomes of the NCCAP.

In the forestry sector, the strategic reference document is the National Tree Cover Strategy (NTCS) which presents twenty-one (21) strategic interventions and more than eighty (80) actions to be implemented. The next step of the analysis was to determine which strategic interventions and actions from the NTCS are aligned with the strategic objectives and actions of the NCCAP (columns 3 and 4) (see Appendix A) Roadmap).

In the Excel file provided with this report, columns 5 depict types of actors and dimensions. These are taken from the 'Barriers Analysis and Recommendations for Climate Action in the Forestry Sector in Kenya' chapter (see spreadsheets of the Excel roadmap provided with this report). The analysis of the barriers and the recommendations made in Chapter 7 (of the Climate Action in the Forestry Sector in Kenya: Status Review) falls within the strategic framework determined by the NCCAP and the NTCS. The final columns are a summary (checkboxes) of the elements presented in Chapter 7, the development methodology of which is based on The Sustainable Livelihoods Framework five capitals approach (see Appendix C) Roadmap).

As the reader moves from left to right across this table, the measures become increasingly precise and aligned with the overarching NCCAP strategic objectives and actions. The result is a list of recommendations that must now be organised and prioritised in order to develop a coherent Roadmap. The last column in the table indicates where synergies can be found between several strategic objectives. This analysis of synergies and prioritisation of actions continues further in the table presented in Appendix C.

Forestry Sector Roadmap Timeline

Columns 1 and 2 recall the analytical framework used for the analysis of barriers and recommendations (The Sustainable Livelihoods Framework five capitals approach). Then each recommendation was assigned a number. The strategic objectives and priority actions (from NCCAP) as well as the strategic interventions (from NTCS) to which the recommendation refers have been listed (columns 4 and 5).

The multicriteria analysis is then carried out for each of the recommendations. The result of the analysis makes it then possible to classify the recommendations according to their profile: short-term, medium-term, long-term.

It is worth noting that the authors have proposed these activities based on technical judgment and additional ground-truthing may be required by stakeholders (i.e., the MoEF and other stakeholders).

Appendix B: Early-Stage Concept Note

Improving sustainability and efficiency across forest product value chains in Kenya

Introduction	
Project title	Improving sustainability and efficiency across forest product value chains in Kenya
Purpose of the project	The objective of this project is to improve sustainability and efficiency across forest product value chains in Kenya, which will be achieved through a technical study commissioned by the Kenya Forest Service (KFS).
Strategic Action - Link to the Sector Roadmap	F 15: Provide support to better understand forest product value chains
Description	<p>Forests and the forestry sector contribute to 3.6% of Kenya's GDP and provide employment to 50,000 people directly and another 300,000 indirectly. However, these figures do not reflect the real contribution of forests and their products to Kenya's economy and local livelihoods, as many more depend on forests and their products through entire value chains. The most important forest products in Kenya include processed wood and timber products, charcoal and firewood, and different non-timber forest products including medicinal plants, fruit, and honey⁴.</p> <p>Inadequate regulatory and policy frameworks and their enforcement, low productivity and barriers to access to finance and technology, mean that harvesting, processing, transport and sale of forest products is often unsustainable with these activities acting as drivers of forest cover loss and forest degradation. Illegal logging for construction materials, poor roundwood harvesting and transport practices, inefficient processing and burning of charcoal are some examples of poor practices with a detrimental effect on Kenya's forest resources.</p> <p>There is an urgent need to balance the growing demand for forest products needed to satisfy construction, energy and nutritional demands of rural and urban populations in Kenya and the Government's efforts to meet the objectives of its Nationally Determined Contribution (NDC) and restore, protect and conserve the country's forests.</p> <p>The objective of this project is to improve sustainability and efficiency of forest products value chains in Kenya, which could further incentivise afforestation and reforestation, forest conservation and protection. This will be achieved through a technical study commissioned by the Kenya Forest Service that will analyse value chains for timber products, charcoal, firewood, medicinal plants and fruit and honey and provide a blueprint for embedding sustainability and efficiency throughout entire value chains. The scope of work will include:</p> <ul style="list-style-type: none"> – A review of existing data, analysis and literature on key forest products and value chains in Kenya, identifying barriers/obstacles, as well as the main opportunities for their development and securing greater access to regional and international markets. – Mapping the value chains from the raw material base, harvesting/logging, processing to sale; identifying the range of actors at various levels in the value chain. – Stock-taking of the efficiency on the various operations in the value chains including harvesting/logging, transport, operations, marketing and trade. The focus will be on product flow, productivity, technologies used, identifying deficiencies in the harvesting and processing activities.

⁴ There are different definitions of NTFP, typically used refer to natural products other than timber that are found in forests, trees outside forests and woodlands. These can include fruit, honey, mushrooms, different types of meat (bushmeat), etc.

	<p>Stakeholder interviews and engagement will be crucial for this step, especially for informal segments of value chains.</p> <ul style="list-style-type: none"> – Assessing the material availability and approaches to make it meet requirements on a long-term basis – Identifying governance structures at each level of every value chain, how they can operate and how they can be made more efficient – Exploring other determining factors (institutional, financial, policy) that constrain efficiency within value chains – Proposing recommendations for improving the value chains in ways that are environmentally, socially and gender inclusive, including by formalizing those that are predominantly informal (e.g., charcoal) and aligned with the Government's priorities of protecting and sustainably managing forests – Developing a draft action-oriented strategy to catalyse investments in, and improve coordination within, sustainable forest product value chains in Kenya. The strategy could consider, for example, the feasibility of taxation system (rural wood market system) in which villages receive a percentage of the collected money based on the sustainable management of land resources under their responsibility. This taxation system would depend on harvesting/transportation vouchers sold on-site and verified by Kenya Forest Service along transportation roads. The cost value of vouchers would depend on the type of wood products (charcoal, fuelwood, logs, etc.) and on the forest management system where they were harvested (e.g., controlled harvesting, uncontrolled harvesting, private lands, gazetted forest).
Rationale	<p>The government's target of increasing the forest cover to 10 % and the implementation of its Nationally Determined Contribution will depend on sustainable management of existing forests and their resources. Mapping forest product value chains, key actors and governance structures, and understanding the demand for different forest products will strengthen the Government's ability to regulate harvesting of forest products and protect and conserve forests.</p>
Project type	<p> <input type="checkbox"/> Infrastructure investment <input type="checkbox"/> Capacity Building <input checked="" type="checkbox"/> Document/Plan/Strategy </p>
Key stakeholders and beneficiaries	
Project owner	<p>Kenya Forest Service</p> <ul style="list-style-type: none"> - Office of the Chief Conservator of Forests <p>Kenya Water Tower Agency</p> <ul style="list-style-type: none"> - Office of the Director General

Potential project implementation partners/key stakeholders	<p>National government:</p> <ul style="list-style-type: none"> - Ministry of Environment and Forestry - National Environmental Management Authority (NEMA) - Kenya Forest Service - Kenya Water Towers Agency - Kenya Wildlife Service - Kenya Forest Research Institute <p>Local government:</p> <ul style="list-style-type: none"> - County governments <p>Private sector:</p> <ul style="list-style-type: none"> - Charcoal Producers Federation of Kenya - Private landowners - Timber manufacturing industry - Kenya Association of Manufacturers - Kenya Private Sector Alliance - Gatsby Africa <p>Civil society:</p> <ul style="list-style-type: none"> - Community Forest Associations - WWF Kenya - One Acre Fund - Conservation International - The Nature Conservancy - Bamboo Association of Kenya - International Union for Conservation of Nature (IUCN) <p>Development partners:</p> <ul style="list-style-type: none"> - Food and Agriculture Organization of the United Nations (FAO) - United Nations Environment Programme (UNEP) - United Nations Development Programme (UNDP) - KFW - USAID / US Forest Service - World Bank - Center for International Forestry Research – World Agroforestry Centre (CIFOR– ICRAF) 	
Direct beneficiaries	Group	Key features and vulnerability characteristics
	Kenya Forest Service	KFS is the key entity in charge of ensuring conservation, protection and management of public forests in Kenya, approving and regulating the use of forests and forest resources, and supporting the Government's target of 10% forest cover. KFS had previously warned that the contribution of forests and the forest sector to the overall economy is underestimated; however, no major study analysing key forest product value chains has been published to date. The findings from this study will help the agency to better manage and protect forests, through improved policy development and enforcement activities.
	Beneficiaries across forest products value chains (forest managers, wood and non-wood producers, vendors, consumers)	Official estimates suggest that the forestry sector directly employs over 50,000 people and another 300,000 indirectly, mainly in pole supplying industries, the timber and sawmill processing industries and charcoal production and transport. However, this figure is much higher for the entire value chain (which also include intermediaries and end-consumers). The charcoal industry alone is estimated to be a source of livelihood for up to 2.5 million people. ⁵

⁵ MoEF. (2019b). *National Strategy for achieving and maintaining over 10% tree cover by 2022*. Retrieved from <http://www.environment.go.ke/wp-content/uploads/2019/08/Strategy-for-10-Tree-Cover-23-5-19-FINAL.pdf>

	Forest-dependent rural communities	While it is difficult to provide a close estimate of the proportion of the population that relies on forest products for their livelihood, in some rural areas, forests contribute to over 75% of household cash income and most of their energy requirements. ⁶	
Impact measures and estimates	<ul style="list-style-type: none">- Regulatory and policy changes incentivising more sustainable harvesting, processing, and trade of forest products- Measurable and directly attributable reduction in illegal logging, misuse and over-extraction of forests and forest products		
Key benefits	<ul style="list-style-type: none">- More sustainable and efficient harvesting, processing, transport and trade of forest products with direct implications for rural and urban livelihoods- Improved understanding of the contribution of forests and their products to the national economy- Improved conservation and management of Kenya's forests- Improved ability of the national Government to achieve its 10% forest cover target and NDC goals		
Location and scope of activities			
Geographic scale and location	The geographical scope of the study will be value chains across Kenya.		
Status of preparation	<input checked="" type="checkbox"/> Project idea note <input checked="" type="checkbox"/> Concept note / pre-feasibility study <input type="checkbox"/> Full project proposal including feasibility study <input type="checkbox"/> Under implementation		
Project preparation steps	Estimate of months for preparation/implementation, as well as proposed activity owner:		
	Activity	Implementation timeline	Activity owner
	Issuance of RfQ and submission of proposals by interested parties	4 weeks	Kenya Forest Service
	Review of proposal and issue of contract (incl. contract negotiation)	3 weeks	Kenya Forest Service
	Activity 1: Literature review	2 months	Consultant supported by KFS
	Activity 2: Value chain mapping, stock-taking and assessment	3 months	Consultant supported by KFS
	Activity 3: Institutional analysis	1 month	Consultant supported by KFS
	Activity 4: Draft recommendations and strategy	2 months	Consultant supported by KFS
	Activity 5: Final technical study and dissemination	2 months	Consultant supported by KFS
Potential for replication	The project consists of a study of forest product value chains in Kenya and has a potential for replication across other chains and industries. There is also potential for undertaking forest product value chain analysis throughout the entire region.		
Alignment with national and international strategies and frameworks	<ul style="list-style-type: none">• National Climate Change Action Plan (NCCAP)⁷ 2018-2022• Kenya's Nationally Determined Contribution (2020)• National 10% Tree Cover Strategy• Forest Conservation and Management Act, 2016		

⁶ MoEF. (2019b). *National Strategy for achieving and maintaining over 10% tree cover by 2022*. Retrieved from <http://www.environment.go.ke/wp-content/uploads/2019/08/Strategy-for-10-Tree-Cover-23-5-19-FINAL.pdf>

	<ul style="list-style-type: none"> • Amended Environmental and Management and Coordination Act, 2015 • Forest Rules (Participation in Sustainable Forest Management), 2019 • Forest Rules (Charcoal), 2009 • Forest Rules (Harvesting), 2009 • Agriculture Rules (Farm Forestry), 2009 															
Does the current legislative and policy framework allow for the implementation?	The current framework is adequate for the implementation of this project.															
Sustainable Development Goals whose achievement will be supported by this project	<input checked="" type="checkbox"/> Goal 1: No poverty <input type="checkbox"/> Goal 2: Zero hunger <input type="checkbox"/> Goal 3: Good health and well-being <input type="checkbox"/> Goal 4: Quality education <input type="checkbox"/> Goal 5: Gender equality <input type="checkbox"/> Goal 6: Clean water and sanitation <input checked="" type="checkbox"/> Goal 7: Affordable and clean energy <input type="checkbox"/> Goal 8: Decent work and economic growth <input type="checkbox"/> Goal 9: Industry, innovation, and infrastructure <input type="checkbox"/> Goal 10: Reduced inequality <input type="checkbox"/> Goal 11: Sustainable cities and communities <input checked="" type="checkbox"/> Goal 12: Responsible consumption and production <input checked="" type="checkbox"/> Goal 13: Climate action <input type="checkbox"/> Goal 14: Life below water <input type="checkbox"/> Goal 15: Life on land <input type="checkbox"/> Goal 16: Peace, justice, and strong institutions <input type="checkbox"/> Goal 17: Partnerships for the goals															
Financial information																
Indicative project cost	Total initial investment: \$81,500 OpEx: Technical assistance: \$81,500															
Are any costs covered by the project owner?	No															
Remaining financing need	\$81,500															
Financing approach	International consulting contract (to be financed by an appropriate development partner.)															
Revenue opportunities	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No [If yes, can further information be provided]															
Is this a standalone investment?	Yes															
Potential project barriers/risks																
Risk and barrier types and mitigation measures	Potential barriers and risks that may be encountered with possible mitigation measures: <table border="1"> <thead> <tr> <th>Theme</th><th>Potential risk</th><th>Mitigation measure</th></tr> </thead> <tbody> <tr> <td>Social</td><td>N/A</td><td>N/A</td></tr> <tr> <td>Environmental</td><td>N/A</td><td>N/A</td></tr> <tr> <td>Economic</td><td>Lack of funds for commissioning the study.</td><td>Development of a detailed concept note, outreach and early engagement with potential donors/technical assistance.</td></tr> <tr> <td>Other (Political)</td><td>Lack of political commitment or frequent changes in sector policy priorities.</td><td>Appoint a structure (or a staff) to lead the project and advocates for its implementation.</td></tr> </tbody> </table>	Theme	Potential risk	Mitigation measure	Social	N/A	N/A	Environmental	N/A	N/A	Economic	Lack of funds for commissioning the study.	Development of a detailed concept note, outreach and early engagement with potential donors/technical assistance.	Other (Political)	Lack of political commitment or frequent changes in sector policy priorities.	Appoint a structure (or a staff) to lead the project and advocates for its implementation.
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Other (Political)	Lack of political commitment or frequent changes in sector policy priorities.	Appoint a structure (or a staff) to lead the project and advocates for its implementation.														

	Other (Data)	Some data may be difficult to access, given the informal nature of harvesting and selling particular NTFPs.	Developing a risk register and early identification of potential data blind spots could mitigate this risk, as well as stakeholder interviews.
Additional information			
List any additional relevant project information	N/A		

Appendix C: Timeline Spreadsheet of the Excel Roadmap

The Forest Sector Roadmap tool has been developed in Excel. Please access it below:



GNiplus_Forestry
Roadmap Tool_DRA

ABOUT AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivalled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of \$13.2 billion in fiscal year 2020. See how we are delivering sustainable legacies for generations to come at aecom.com and [@AECOM](https://twitter.com/AECOM).