



MINISTRY OF
ENVIRONMENT,
CLIMATE CHANGE
& FORESTRY



KENYA NATIONAL BAMBOO DEVELOPMENT STRATEGY AND ACTION PLAN (2025-2035)



Bamboo ceiling, Madrid airport

Published by
Ministry of Environment, Climate Change and Forestry,
State Department for Forestry,
NHIF Building, 12th Floor, Ragati Road, Upper Hill,
P.O. Box 30126 - 00100, Nairobi, Kenya
Email: ps@forestry.go.ke
Website: www.environment.go.ke

©MOECC&F, 2025

This document may be produced in whole or in part in any form for educational purposes or non-profit uses without permission of the copyright holder provided acknowledgement is made.

TABLE OF CONTENT

List of Figures	iv
List of Tables	iv
Foreword	v
Preface	vi
Acknowledgement.....	vii
Abbreviations and Acronyms	viii
Executive Summary	x
1.0 Introduction.....	1
1.1 Background.....	1
1.2 Bamboo industry and trade	1
1.3 Relevant policies, legal and institutional framework	2
1.4 Need for a bamboo strategy	2
1.5 Guiding principles	2
2.0 Status of Bamboo Resource Development in Kenya	3
2.1 Bamboo resource base in Kenya.....	3
2.2 Bamboo development initiatives in Kenya	5
2.3 Contribution of bamboo to international and national agenda	5
2.3 Contribution of bamboo to environmental conservation and climate change mitigation ...	5
2.4 Existing and potential bamboo value chains	6
2.5 Bamboo market	6
2.6 Opportunities for bamboo development in Kenya	6
2.7 Challenges in bamboo development	8
3.0 Strategic Interventions	9
3.1 Strategic Goal.....	9
3.2 Strategic objectives.....	9
4.0 Coordination and Implementation of the strategy	12
4.1 Coordination Framework	12
4.2 National Secretariat	12
4.3 Linkages with the existing national Policies and Institutional Strategic plans.....	13
4.4 Information and technology dissemination	13
5.0 SWOT, Stakeholder and Risk Analysis	14
5.1 SWOT analysis for bamboo sector	14
5.2 Stakeholder Analysis.....	15
5.3 Risk analysis	17
6.0 Resource Mobilization	21
6.1 Financial resources	21
7.0 Monitoring and Evaluation	22
8.0 Implementation action plan and budget	23
REFERENCES.....	32

LIST OF FIGURES	
Figure 1 : Bamboo Development Institutional Framework	12
LIST OF TABLES	
Table 1: A summary of bamboo species–site suitability in Kenya	3
Table 2: Strategic objectives and actions	9
Table 3: SWOT analysis	14
Table 4: Stakeholder Analysis	15
Table 5: Risk analysis and mitigation measures for identified threats	17
Table 6: Implementation Action Plan 2025 – 2035 and budget	24
Table 7: Budget and action plan 2025-2035	25



FOREWORD

Bamboo resources in Kenya are a valuable natural endowment that must be sustainably managed for the present and future generations. Bamboo resources offer a range of benefits and opportunities for local and national economic development, improved livelihoods and provision of environmental goods and services such as watershed protection and carbon sequestration. Kenya's Bamboo sector has experienced poor performance in the past. Key barriers that have impeded the development of the Bamboo sub-sector include lack of strategic direction, inadequate supply of quality planting materials, high price of bamboo seedlings, lack of coordinated development and allocation of resources, inadequate research emanating from low funding, low level of technology adoption, weak marketing systems and limited information and decision making tools at both National and County Government levels.

Currently, The Government of Kenya has accorded high priority to bamboo sector. Bamboo sector development can be an important tool to achieve some of the objectives of the national development agenda, including the Bottom –up Economic Transformation Agenda (BETA), Vision 2030, Presidential directive on 30% tree cover by 2032, the Medium-Term Plan (MTP) IV, and other international obligations including Sustainable Development Goals (SDGs), Bonn Challenge among others. The Government has also gazetted bamboo a scheduled crop and developed a National Bamboo Policy to promote sustainable management and utilization of bamboo as a renewable resource.

This Bamboo Strategy And Action Plan will spark new measures to enhance bamboo growing, sustainable management of bamboo resources; encourage commercialization and value-chain development, creating an enabling environment for bamboo sector development in Kenya for the next ten years. In addition, bamboo with its intrinsic nature to contribute to watershed development (soil and water conservation) and carbon sequestration will enhance ecological benefits.

This Strategy and Action plan also provides a framework for improved governance, resource allocation, partnerships and collaboration with state and non-state actors enabling the sub-sector to contribute in meeting the country's growth and poverty alleviation goals within a sustainable environment. However, formulating the Bamboo Strategy and Action Plan on its own is insufficient to bring about the envisaged bamboo commercialization. There is a need for commitment from all citizens to ensure that the contents of this Strategy are implemented as per the action plan contained therein, and funds are allocated to implement the activities detailed in the plan. The National and County Governments have to play their part in providing an enabling environment, effective extension service, forestry research and allocation of funds to the sector. Meaningful participation of stakeholders will continue to be sought through regular consultation and discussions, as we strive together to attain the most efficient, sustainable and equitable use of our bamboo resources.

**This Bamboo Strategy
and Action plan will
spark new measures
to enhance bamboo
growing, sustainable
management of
bamboo resources...**



Dr. Deborah Mlongo Barasa

Cabinet Secretary, Ministry of Environment, Climate Change and Forestry



PREFACE

Kenya National Bamboo Development Strategy and Action Plan 2025-2035 is a ten-year Plan to guide the development of the Bamboo Sector for Kenya. The Strategy and Action plan aims at making bamboo sector a key driver for sustainable local and national economic development, improved livelihoods and provision of environmental goods and services such as watershed protection and carbon sequestration.

The National Bamboo Strategy and Action Plan has been developed through a consultative process with contribution from key stakeholders in the Bamboo Sector. The Ministry of Environment, Climate Change and Forestry wishes to acknowledge the contribution by partners drawn from the National and County Governments, Academia, the private sector, groups and individuals for their commitment and content enrichment during development of this Strategy and Action Plan.

We recognize the expert guidance and contribution drawn from the Ministry of Environment, Climate Change and Forestry, Kenya Forestry Research Institute, Kenya Water Towers Agency, Kenya Forest Service and the International Bamboo and Rattan Organization. We also thank the Heads of Directorates, Divisions, Programmes and Development partners for their vital contribution and input to the finalization of this Strategy.

Lastly our appreciation and gratitude goes to the INBAR's Dutch-Sino-East Africa Bamboo Development Programme for financial support towards the development of this strategy.

The National Bamboo Strategy and Action Plan has been developed through a consultative process with contribution from key stakeholders in the Bamboo Sector.

A handwritten signature in blue ink, consisting of stylized loops and a long horizontal stroke extending to the right.

Gitonga Mugambi, CBS

Principal Secretary, State Department for Forestry
Ministry of Environment, Climate Change and Forestry



ACKNOWLEDGEMENT

We extend our gratitude to all stakeholders who contributed to the development of the Kenya National Bamboo Strategy and Action Plan. This process brought together diverse actors from government ministries, departments and agencies, the private sector, research institutions, civil society organizations, community-based groups, and development partners. Their expertise, dedication, and collaborative spirit were instrumental in shaping a strategy that reflects Kenya's unique ecological, economic, and social realities while unlocking the immense potential of bamboo for sustainable development.

We are particularly grateful to the technical team drawn from the State Department for Forestry, Kenya Forestry Research Institute (KEFRI), Kenya Forest Service (KFS), and other relevant institutions who led the consultative and drafting processes. Their commitment to evidence-based planning and stakeholder engagement ensured that the Strategy is not only aligned with national development goals, such as Vision 2030 and the Bottom-Up Economic Transformation Agenda (BETA), but also with international frameworks including the Sustainable Development Goals (SDGs) and climate change commitments under the Paris Agreement.

Special appreciation goes to our development partners, notably the International Bamboo and Rattan Organisation (INBAR) and other supporting agencies, for their financial and technical support throughout the process. Their partnership has been invaluable in advancing bamboo as a climate-smart and inclusive value chain that can support livelihoods, restore degraded landscapes, and spur green industrialization. We look forward to continued collaboration in the implementation of this Strategy to realize the full potential of bamboo for Kenya's sustainable future.

We look forward to continued collaboration in the implementation of this Strategy to realize the full potential of bamboo for Kenya's sustainable future.

A blue ink handwritten signature, appearing to read 'George Tarus', with a stylized flourish extending to the right.

Mr. George Tarus,
Secretary, Forest Development
State Department for Forestry

ABBREVIATIONS AND ACRONYMS

AFC	Agricultural Finance Corporation
AG	Attorney General Chambers
APC	African Plantation Capital
ASALs	Arid and Semi-Arid Lands
BAK	Bamboo Association of Kenya
CAADP	Comprehensive Africa Agriculture Development Programme
CBD	Convention on Biological Diversity
CBOs	Community Based Organizations
CEC	County Executive Committee
CFA	Community Forest Association
CIC	County Implementation Committees
CIDPs	County Integrated Development Plans
CIMES	County Integrated Monitoring and Evaluation System
CoG	Council of Governors
COMTRADE	Commodity Trade Statistics Database (of the United Nations)
EC	Ecosystem Conservator
EMCA	Environmental Management and Coordination Act
ENSDA	Ewaso Nyiro South Development Agency
FLR	Forest landscape restoration
GBM	Green Belt Movement
GDP	Gross Domestic Product
GESIP	Green Economy Strategy Implementation Plan
GPE	Green Pot Enterprises
ICT	Information and Communication Technology
ICTA	Information and Communication Technology Authority
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
INBAR	International Bamboo and Rattan Organization
IPPC	International Plant Protection Convention
JICA	Japan International Cooperation Agency
KALRO	Kenya Agricultural and Livestock Research Organization
KEBS	Kenya Bureau of Standards
KEFRI	Kenya Forestry Research Institute
KEPHIS	Kenya Plant Health Inspectorate Service
KEPROBA	Kenya Export Promotion & Brand Agency
KEPSA	Kenya Private Sector Alliance
KES	Kenya Shilling
KFS	Kenya Forest Service
KIBT	Kenya Institute of Business Training
KICD	Kenya Institute of Curriculum Development
KIE	Kenya Industrial Estates
KIPI	Kenya Industrial Property Institute
KWS	Kenya Wildlife Service
KWTA	Kenya Water Towers Agency

MDA	Ministry, Department or Agency
M&E	Monitoring and Evaluation
MENR	Ministry of Environment and Natural Resources
MEWNR	Ministry of Environment, Water and Natural Resources
MoA&LD	Ministry of Agriculture and Livestock Development
MoEP	Ministry of Energy and Petroleum
MoECC&F	Ministry of Environment, Climate Change and Forestry
MoE	Ministry of Education
MoF&DA	Ministry of Foreign and Diaspora Affairs
MoH	Ministry of Health
MoIC&TDE	Ministry of Information, Communications and The Digital Economy
MoI&CNG	Ministry of Interior and Coordination of National Government
MoIT&I	Ministry of Investments, Trade and Industry
MoPSP&DM	Ministry of Public Service, Performance and Delivery Management
MoRT	Ministry of Roads and Transport
MoTW	Ministry of Tourism and Wildlife
MSEA	Micro and Small Enterprises Authority
MSME	Micro, Small and Medium Enterprises
MTP	Medium Term Plan
NCA	National Construction Authority
NEMA	National Environmental Management Authority
NETFUND	National Environment Trust Fund
NFP	National Forest Programme
NGOs	Non-Governmental Organizations
NIMES	National Integrated Monitoring and Evaluation System
NRF	National Research Fund
NTIC	National Technical Implementation Committee
NTP	National Treasury and Planning
P&T	Primary processing and Training facility
PLC	Public Limited Company
PPPP	People-Private-Public Partnership
RDs/ARDs	Regional Directors/Assistant Regional Directors
SAGAs	Semi-Autonomous Government Agencies
SCIC	Sub County Implementation Committee
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
SWOT	Strengths Weaknesses Opportunities Threats
TC	Technical Committee
TOT	Training of Trainers
TVET	Technical and Vocational Education and Training
UN	United Nations
UAE	United Arab Emirates
UNIDO	United Nations Industrial Development Organization
VIRED	Victoria Institute of Research in Environment and Development
WG	Working Group
WIC	Ward Implementation Committee
WRUAs	Water Resources Users Associations

EXECUTIVE SUMMARY

The purpose for this Strategy and Action Plan is to spur bamboo development in the country. This will enhance commercialization of the bamboo sector in the country for sustainable development, environmental conservation and creation of wealth for the people.

While the national government provides policy and coordination of the policy, implementation will take place at the County level spearheaded by stakeholders comprising governmental and non-governmental players in the bamboo sector. The strategy notes the slow pace at which bamboo sector has grown despite concerted effort led by KEFRI with support from The International Development Research Centre (IDRC), The United Nations Industrial Development Organization (UNIDO) and International Bamboo and Rattan Organisation (INBAR) over the last thirty years. As one would have said, it is time that bamboo leaves the research and government corridors to the farms.

The Strategy provides an insight into bamboo sector development, the history, current status and aspirations of the sector. The strategy will be implemented over a period of ten years with funding from both internal and external sources including individuals and groups. The budget is detailed and contains activities and proposals on funding sources. As with all strategies, the document provides a pathway along which bamboo development is to take place. Of importance is the value chain approach which is the main development method contained in the strategy. Sustainably managed bamboo resources will contribute to poverty alleviation, employment creation, economic development and forest protection. It is anticipated that the implementation of the Strategy will not only result in the expected outputs and address the strategy objectives, but will impact the lives of all stakeholders, particularly, farmers in the bamboo sector. The success of the strategy will hence be measured by the extent it supports livelihoods at the household level, its positive impact on the environment, particularly, on the rehabilitation of degraded sites and its economic impact on the local and national economies.

As with all strategies, the document provides a pathway along which bamboo development is to take place. Of importance is the value chain approach which is the main development method contained in the strategy. Sustainably managed bamboo resources will contribute to poverty alleviation, employment creation, economic development and forest protection...

1.0

INTRODUCTION

1.1 Background

The dominant species of bamboo in Kenya is *Oldeania alpina* formerly known as *Arundinaria alpina* or *Yushania alpina*. The species is indigenous in Kenya and is commonly known as highland bamboo. It is mainly found in the Kenya's five water towers at an elevation of 2200 to 3400 m above sea level. In the past, bamboo poles were harvested to meet various uses, including subsistence and cottage industry. By the year 2000, an estimated 25 million bamboo poles were being harvested annually from gazetted forests, mainly for fencing, scaffolding, and construction of houses especially in rural areas. Bamboo splits were used for making baskets, for farm and household uses such as those used in harvesting tea leaves. Juvenile bamboo shoots are also used as food. The current uses of the indigenous bamboo within government forests and in trustlands are; catchment rehabilitation, regulation of water-flow, and soil erosion control and carbon sequestration. In Kenya, bamboo is being cultivated on private land where the cultivation is mainly focused on growing bamboo for the cottage industry.

Since 1986, Kenya Forestry Research Institute (KEFRI) in collaboration with various partners including, International Development Research Centre (IDRC), United Nations Industrial Development Organization (UNIDO) and International Bamboo and Rattan Organisation (INBAR) have introduced about 40 exotic bamboo species. The introduced species are more versatile and can be widely cultivated in different ecological zones. The species are being validated for their growth, yield and performance in various ecological regions of the country and 12 have shown good performance.

The Government of Kenya has accorded high priority to development of bamboo sector by classifying and designating bamboo as a scheduled crop. The aim of the classification is to foster commercialization of bamboo and promote it as part of Kenya's green campaign of increasing tree cover and creating employment. Bamboo has the potential to contribute to achieving Kenya Vision 2030 and the Bottom- Up Economic Transformation (BETA) Agenda. Bamboo can directly contribute to "economic and social pillars" and flagship programs of the Vision 2030 with a focus on: Micro-, Small and Medium Enterprises (MSMEs) development; promoting manufacturing; rehabilitation of degraded land and landscapes; ensuring equity and eradicating poverty; and, supporting provision of affordable ecologically friendly housing. Bamboo also can contribute to the green economy. This will improve the livelihoods and incomes of Kenyans who depend on agriculture and forestry.

Despite the huge potential of bamboo in playing a significant role in driving the economy and in environmental conservation, there are challenges facing development of bamboo sector in Kenya. There is need therefore to have a coordinated approach to address these challenges to support the bamboo value chain.

1.2 Bamboo industry and trade

1.2.1 Global bamboo industry and trade

Globally, 1.5 billion people depend on bamboo for their livelihoods. Bamboo has over 10,000 documented uses. The global bamboo market in 2022 was valued at over USD 72 billion (Research and Markets, 2022). Bamboo commodities are one of the important globally traded commodities. The international trade value of bamboo products in 2018 was USD 2.9 billion (INBAR, 2021a). China is the world leader in



1.5B

people depend on bamboo for their livelihoods globally



\$72B

The global bamboo market valued in 2022

\$2.9B

The international trade value of bamboo products in 2018

bamboo commodity production, consumption and export. The European Union, United States of America and Japan are the major importers of Chinese bamboo products, which in 2019 accounted for almost 60% of China's total bamboo export market (INBAR, 2021b).

There are 12 globally traded bamboo commodities which include: (a) preserved bamboo shoots (20.4 %), (b) bamboo flooring (19.4%), (c) bamboo basketry works (14.2%) and (d) bamboo and rattan furniture (10.3%) (Gauli *et al.* 2018). Emerging and growing bamboo markets are wood substitutes such as plywood, reconstituted boards, textile, charcoal and non-traditional furniture (Gauli *et al.* 2018; Research and Markets, 2021).

1.2.2 Regional bamboo industry and trade

Africa accounts for about USD 21 million (1.61%) of imports and USD 18 million (1.21%) of the global exports of bamboo. The Common Market for Eastern and Southern Africa (COMESA) block imports bamboo products worth USD 9.26 million and exports products worth USD 2.12 million annually.

1.3 Relevant policies, legal and institutional framework

Kenya is a signatory to nearly fifty international legal instruments or guidelines dealing with aspects of introduction, management and utilization of bamboo. Some of the key international legal instruments include; The Convention on Biological Diversity (CBD), the Ramsar Convention on Wetlands, and the International Plant Protection Convention (IPPC).

Planting of bamboo contributes to the aspirations of the Constitution of Kenya, 2010 and Kenya's Vision 2030, which promote sound environmental conservation, and increasing national tree cover to 30% by 2032.

The Kenya National Forest Programme (2016 to 2030) and Forest Conservation and Management Act, 2016 support management and utilization of bamboo. Other sectoral laws and policies that address or relate to bamboo development include: The National Bamboo Policy, 2022; The Energy Act, 2019; The Environmental Management and Coordination Act, (EMCA) 2022; The Water Act, 2016; County Government Act, 2012; and The Agriculture, Fisheries and Food Authority Act, 2013.

In spite of the various policy and legal frameworks, the lack of an institutional and organizational framework for bamboo development is a major impediment to the development of the sector.

1.4 Need for a bamboo strategy

The need for a bamboo strategy stems from the growing consumer-driven demand for bamboo products, the urgent need to address emerging climate change challenges, and the potential for creating green jobs across the value chain. The strategy will guide community and private sector engagement in bamboo value chain in line with Kenya's Vision 2030, Medium Term Plan four (MTP IV), the National Forest Programme (2016–2030), and the Agricultural Sector Transformation and Growth Strategy (2019–2029). It will also support the implementation of the Bamboo National Policy (2022), aimed at building a vibrant bamboo industry through sustainable management and value addition.

1.5 Guiding principles

The following guiding principles underpin this strategy and action plan:

- a) **Sustainability:** The Strategy promotes sustainable production and consumption of bamboo which includes management and efficient use of the resource. This will contribute to resilient green economy, reduce pressure on forests and enhance ecosystem services
- b) **People-Private-Public Partnership (PPPP):** Bamboo development will be centred on collaboration and partnership between people, the private and public sector to enhance bamboo development for the benefit of the people and environment. The Strategy will support small scale farmers in participating in bamboo value chain for livelihoods improvement
- c) **Market centred:** The Government of Kenya will promote bamboo development through market competitiveness of bamboo products.
- d) **International best practices:** The Strategy encourages community participation, responsible harvesting, value addition, and alignment with global standards to ensure bamboo contributes to climate resilience, biodiversity conservation, and green economic growth.



\$21M

Africa accounts for about (1.61%) of imports

12

globally traded bamboo commodities



Bamboo shoots



19.4%

Bamboo flooring



14.2%

Bamboo basketry works



10.3%

Bamboo and rattan furniture

2.0

STATUS OF BAMBOO
RESOURCE
DEVELOPMENT IN
KENYA

2.1 Bamboo resource base in Kenya

Indigenous bamboo forest covers 133,273 ha of land area in Kenya mainly in the Aberdare Ranges, Mt. Kenya, Mt Elgon, Mau Forests Complex, and Cherangany Hills. The largest bamboo forest cover is in the Aberdare Ranges (50,038 ha), followed by Mount Kenya (25,966 ha) (INBAR, 2018b).

Exotic bamboo is spread out in different agro-ecological zones of Kenya. They are found in forests and farmlands. Of the 40 bamboo species introduced from Asia, the following species are suitable for different agro-ecological zones: *Bambusa brandisii*, *B. vulgaris* var. *striata*, *B. bambos*, *B. tulda*, *Dendrocalamus membranaceus*, *D. strictus*, *D. asper*, *D. giganteus*, *Oxytenanthera abyssinica*, and *Thyrsostachys siamensis*. Farmers, communities and the private sector have so far grown 4,000 hectares of exotic bamboo spread across different counties consisting mainly of *B. vulgaris*, *D. asper* and *D. giganteus*. A bamboo species site suitability assessment was carried out in 2020 and an atlas prepared based on the information below **Table 1** (Otuoma et al., 2021).

Table 1: A summary of bamboo species–site suitability in Kenya

Bamboo species	Zone of optimal performance	Zone of marginal performance
<i>Oldeania alpina</i>	Mountain ranges (LH0) at an elevation range of 2,300–3,200 m a.s.l. - Used for conservation and commercial utilization	Upper midland zones (UM1–2) and lower highland zones (LH1–3) at an elevation range of 1,900–2,200 m a.s.l. - Ornamental and conservation use
<i>Thyrsostachys siamensis</i>	Coastal lowlands (CL2–4) at an elevation range of 1–200 m a.s.l.	Low-lying midland zone (LM2) Elevation range of 1,000–1,500
<i>Phyllostachys aurea</i>	Versatile in most lower midland zones (LM1–2), upper midland zones (UM1–3), and lower highland zones (LH1–3). An elevation range of 1,000–2,100 m a.s.l. - Mostly useful for live hedges, furniture making, and construction	
<i>Oxytenanthera abyssinica</i>	Humid lower midland zones (LM1–2), upper midland zones (UM1–2), and a lower highland zone (LH3) Elevation range of 1,000–2,100 m a.s.l.	Humid coastal lowlands (CL2–4) Elevation range of 1–100 m a.s.l.

Bamboo species	Zone of optimal performance	Zone of marginal performance
<i>Dendrocalamus strictus</i>	Sub-humid low-lying lower midland zones (LM3–5), including coastal lowlands (CL2–4) Elevation range of 1–1,000 m a.s.l.	Lower midland zones (LM1–2) Elevation range of 1,000–1,500 m a.s.l.
<i>Dendrocalamus membranaceus</i>	Humid low-elevation zones (CL2–4, LM1–2) and low-lying upper midland zone (UM2) Elevation range of 1–1,800 m a.s.l.	Lower highland zone (LH3) Elevation range of 1,900–2,100 m a.s.l.
<i>Dendrocalamus hamiltonii</i>	Coastal lowland (CL2–4), lower midland (LM1–2), and upper midland (UM2) zones with reliable rainfall Elevation range of 1–1,800 m a.s.l.	Lower highland zone (LH3) Elevation range of 1,900–2,100 m a.s.l.
<i>Dendrocalamus giganteus</i>	Lower midland (LM1–2) and upper midland (UM1–2) zones with reliable rainfall Elevation range 1,200–2,100 m a.s.l.	Lower highland zone (LH3) Elevation range of 1,900–2,100 m a.s.l.
<i>Dendrocalamus brandisii</i>	Low-lying humid midland zones (LM1–2 and UM1–2) Elevation range of 1,200–1,800 m a.s.l.	Lower highland zone (LH3) Elevation range of 1,900–2,100 m a.s.l.
<i>Dendrocalamus asper</i>	Humid coastal lowland (CL2) and humid lower midlands (LM1–2) Elevation range of 1–1,500 m a.s.l.	Lower highland zone (LH3) Elevation range of 1,900–2,100 m a.s.l.
<i>Bambusa vulgaris</i> var. <i>vulgaris</i>	Coastal lowland (CL2–4), humid lower midland (LM1–2), and low-lying UM1 zones Elevation range 1–1,650 m a.s.l.	Upper midland (UM2) and lower highland (LH1–3) zones Elevation range of 1,700–2,100 m a.s.l.
<i>Bambusa vulgaris</i> var. <i>vittata</i>	Agro-ecological zones (CL2–4, LM1–5, and UM2). Performance depends on silvicultural management and soil moisture content. Elevation range of 1–1,800 m a.s.l.	Higher upper midland zone (UM1) and lower highland zones LH1–3 Elevation range 1,900–2,100 m a.s.l. and above
<i>Bambusa tulda</i>	LM1–2 and UM1–2 zones Elevation range of 1,200–1,700 m a.s.l.	LH3 zone Elevation range of 1,900–2,100 m a.s.l.
<i>Bambusa multiplex</i>	LM1–2 and lower-elevation UM1–2 Elevation range of 1,200–1,700 m a.s.l.	LH1–3 zones Elevation range of 1,900–2,100 m a.s.l.
<i>Bambusa blumeana</i>	CL2–4, LM1–2, and low-lying UM1–2 zones Elevation range of 1–1,600 m a.s.l.	LH3 zone Elevation range of 1,900–2,100 m a.s.l.

2.2 Bamboo development initiatives in Kenya

A number of development initiatives have been undertaken by INBAR in partnership with KEFRI, Maseno University and South Eastern Kenya University (SEKU). The initiatives include the following projects;

- Bamboo Production as an Alternative Crop and Livelihood Strategy for Tobacco Smallholder Farmers in South Nyanza, Kenya
- Eastern Africa Bamboo Project
- Development and promotion of Bamboo housing in East Africa
- Dutch-Sino East Africa Bamboo Development Programme

A number of farmers (mainly from South Nyanza) have mature bamboo. Two private players; Green Pot Enterprises (GPE) and African Plantation Capital (APC) are involved in establishment of large-scale bamboo plantation in farmlands. Eco Green Kenya a Community Based Organisation has also been instrumental in enhancing bamboo growing in western Kenya. In addition, a number of private nursery operators namely; Kitil Farm, Nyabera PLC, and Tiriki Gardens, have large scale nurseries producing and selling bamboo seedlings. Other notable large scale nurseries are with institutions such as Ewaso Nyiro South Development Agency (ENSDA), Kenya Forestry Research Institute (KEFRI), Kenya Forest Service (KFS) and Eco Green Kenya a Community Based Organisation.

2.3 Contribution of bamboo to international and national agenda

2.3.1 International agenda

In meeting the United Nations Sustainable Development Goals (SDGs), bamboo investments will directly translate to creating green jobs along the value chain, bamboo enterprises address **SDG 1 (No Poverty)** and **SDG 8 (Decent Work and Economic Growth)**. Offering renewable energy solutions such as charcoal briquettes and bioenergy promotes **SDG 7 (Affordable and Clean Energy)**, while providing a sustainable source of raw material for timber alternatives supports **SDG 9 (Industry, Innovation, and Infrastructure)** and **SDG 12 (Responsible Consumption and Production)** through value addition and green construction. Its fast growth and high carbon sequestration capacity directly advance **SDG 13 (Climate Action)** by mitigating greenhouse gas emissions and enhancing resilience to climate change. Bamboo's role in land restoration and soil conservation contributes to **SDG 15 (Life on Land)** by combating desertification, halting land degradation, and supporting biodiversity.

2.3.2 National agenda

Constitution of Kenya, Article 69 Vision 2030, Social Pillar including education, health, water and sanitation in a clean environment

Bamboo contributes to the Bottom- Up Economic Transformation Agenda and employment through industrialization (cottage industry), universal health (medicinal uses, water cleaning and purification), food security (human and animal feed), and affordable housing (green buildings, furniture, and fencing).

The National Landscape and Ecosystem Restoration Strategy (2023-2032) targets 150,000 hectares of bamboo across various landscapes in the country which is expected to create over 750,000 green jobs in the first two years of planting and more jobs in the harvesting and processing value chains.

2.3 Contribution of bamboo to environmental conservation and climate change mitigation

Bamboo provides significant contribution in mitigation of climate change due to its fast growth. It is estimated that carbon storage and sequestration rates for bamboo range from 30 – 121 Mg per hectare and 6 – 13 Mg per hectare per year respectively. Bamboo produces 35% more oxygen and absorbs 40 % more carbon dioxide compared to trees.

Bamboo can also be used to restore degraded lands and riparian areas including: reducing siltation of lakes, dams and rivers; river bank stabilization; flood control; soil and water conservation; hydrological cycle regulation; and reducing air pollution.

2.4 Existing and potential bamboo value chains

Bamboo value chains are not well developed in Kenya. However, the production and use of bamboo is gaining momentum thus the need to develop a complete value chain for various bamboo products. The most imported bamboo products in Kenya include bamboo plywood and flooring both of which are not produced in the country.

Value-addition of bamboo has been undertaken through the Ministry of Environment, Climate Change and Forestry and Non-Government Organizations (NGOs). Production of various information products such as guideline and manual on growing and use of bamboo has been done to support the value chains. Bamboo value chains are also supported through availing of bamboo processing equipment and training bamboo artisans at KEFRI National Forest Products Research Programme in Karura. A number of private entrepreneurs have established workshops for making various products using bamboo culms, these are found in Nairobi, Eldoret and Busia. A few NGOs namely Victoria Institute of Research in Environment and Development (VIREN) based in Kisumu and Green Belt Movement (GBM) are promoting bamboo in their project target locations, mainly aimed for land rehabilitation.

2.5 Bamboo market

Bamboo import and export account for 0.06% and 0.02% respectively of the global trade. Kenya is a negligible player in the global bamboo trade. During 2009-2013, Kenya imported bamboo and rattan products worth USD 0.8 million and exported bamboo products valued at USD 0.27 million. The major bamboo products imported were; flooring tiles, plywood and furniture. Other minor bamboo products traded include charcoal and wood biomass. Despite this low rate of trade in bamboo, there is a great potential for improving the export trade while at the same time reducing imports of bamboo products. This will enable the country to improve on balance of trade with other countries which are currently exporting bamboo products into Kenya.

2.6 Opportunities for bamboo development in Kenya

2.6.1 Bamboo as a timber substitute

Kenya is a wood deficit country whose shortfall is filled through imports from neighbouring countries of Uganda, Tanzania, Malawi and the Democratic Republic of Congo (DRC). This deficit can be reduced using timber reconstituted from bamboo.

2.6.2 Bamboo pulp and paper

Kenya in 2019 and 2020 imported wood pulp and other fibrous cellulosic material valued at a combined total of USD 27,831,448. This includes recovered paper and paperboard. Bamboo is an important source of fibre for pulping and papermaking. Bamboo being fast growing can be an alternative source of fibre for the pulp and paper industry. Bamboo fibres are comparable to hardwood fibres in several fibre characteristics. Therefore, pulp mills can establish their own bamboo plantations for stable supply of bamboo chips and contract local farmers as bamboo out growers.

2.6.3 Bamboo furniture

The rapid growth of Kenya's population and rapid urbanization has led to an increased demand for home and office space. This has resulted to acquisition of new household items including furniture. The demand for furniture has been growing by approximately 10% every year and is estimated to account for USD 496 million (Creapo Oy, 2015). Currently, a large share of the furniture imported into the country is from **China**, Turkey, United Arab Emirates (UAE), and India. Bamboo can be used to make furniture using either whole culms or laminated bamboo timber.

2.6.4 Bamboo in construction

The construction industry in Kenya has been on the upward trend over the past decade. The country faces a housing deficit of over 2 million units (World Bank, 2017) and is exacerbated by an urbanization rate of 4.4%, equivalent to 0.5 million new town dwellers every year. In 2022, the Government launched its economic blueprint dubbed "Bottom-Up Economic Transformation Agenda (BETA)" whose focus is

Agriculture, MSMEs, affordable housing, health and Digital & creative economy. According to the construction industry outlook for 2020, GDP contribution by the construction sector grew by 11.5% from KES 496 billion to KES 542 billion in 2019 (NCA, 2020). However, the construction industry has an oversized carbon footprint and contributes over a third of the greenhouse gas emissions in the country. The annual steel consumption has also grown steadily in the last 5 years; from 1,870,946 tonnes in 2015 to 2,433,623 tonnes in 2019. The use of steel has increased due to the shortage of wood resources.

Kenya's Green Economy Strategy Implementation Plan (GESIP 2016-2030) aims for "A low carbon, resource-efficient, equitable and inclusive socio-economic transformation". The plan mandates the National Construction Authority (NCA) to promote sustainable design and construction of buildings and infrastructure. Bamboo has key role to play in the construction industry as it can provide materials for scaffolding, making of trusses and partitioning. Bamboo compared to steel is three times cheaper and has greater tensile strength. Studies have shown that a sizeable amount of steel can be replaced by bamboos in building of structures.

2.6.5 Bamboo energy

Charcoal is a major source of cooking fuel in Kenya. About 82% of the urban households and 34% of the rural households depend on charcoal. Charcoal imports into the country have increased over the past two years, more so since the implementation of the forest harvesting moratorium in early 2018. A charcoal assembling point has been established in Busia (a border town with Uganda) where bags of charcoal from Uganda are stored and loaded onto trucks destined for other Kenyan towns. In 2019 the country imported 1,233,475 bags of charcoal through the Busia border point valued at over KES 1.4 billion. The cost of charcoal at the border point range from KES 700-1,600 with a mean price of KES 1,150 depending on the quality and are sold at over KES 2,500 in Nairobi. Bamboo with its rapid growth rate and regeneration characteristics make it a candidate source of energy for domestic and industrial use.

2.6.6 Bamboo crafts and basketry

In Kenya, the handicraft industry falls under the Small and Medium Enterprises (SMEs). They provide a source of employment, income generation and poverty reduction. The handicraft production can be cultural, traditional and is predominantly a cottage industry. These handicrafts consist of textile and non-textile items. The non-textile items comprise of wooden and soap stone carvings, and basketry made from various fibres including sisal and tree barks. Bamboo has great potential in this industry for products that can be used locally and for export.

2.6.7 Bamboo plywood

According to COMTRADE database, Kenya in 2019 imported sheets for veneering of plywood or similar lamination purposes amounting to over 1.4 million kg valued at USD 936,062. Bamboo has the potential to supply sheets for veneering and reduce the importation of the same products.

2.6.8 Bamboo flooring

Various flooring material are in use in Kenya. These include flooring tiles made from hardwood species, engineered hardwood, laminate flooring, vinyl and linoleum, stone tiles, ceramic or porcelain tiles and concrete tiles. All these differ in costs where on average they range from KES 700- 4500 per m².

Bamboo flooring has become a popular alternative to wood flooring in recent years in Kenya. However, these materials are imported from China and cost KES 4,500 per m². The potential to produce locally manufactured bamboo tiles would make them more competitive than the ones imported from China.

2.6.9 Bamboo shoots.

Bamboo shoots offer Kenya a promising opportunity by providing nutritious food and high market demand, especially in Asia. With favourable growing conditions, Kenya can cultivate and process shoots into fresh, canned, or pickled products for local use and export, creating rural livelihoods, boosting food security, and tapping into premium international markets.

2.6.10 Textile Industry value chains

The bamboo textile industry offers Kenya a promising value chain opportunity, driven by rising global demand for sustainable fabrics. Bamboo fibers can be processed into soft, durable, and eco-friendly textiles used in clothing, home furnishings, and industrial materials. By investing in processing technology and linking growers with manufacturers, Kenya can create jobs, support rural incomes, and position itself as a regional hub for green textile production, while contributing to sustainable industrial growth.

2.7 Challenges in bamboo development

The constraints and challenges to development of bamboo sector include:

- Low prioritization of the sector in the past, leading to low levels of public participation and investments including inadequate budgetary allocation
- Limited support services such as marketing
- Insecurity of land tenure, land use conflicts and uneconomic land fragmentation
- Current restriction on harvesting of bamboo from state forests
- Poor market structure for bamboo products and seedlings
- Inadequate capacity in raising bamboo and processing of products
- Unavailability of appropriate credit and financial services
- Limited incentives to support bamboo value chain
- Limited existing bamboo resource base to attract investments in large scale bamboo processing infrastructure
- Poor quality planting material due to limited access to certified, high-quality bamboo seedlings.



Bamboo bridge, in Solo, Indonesia

3.0

STRATEGIC INTERVENTIONS

3.1 Strategic Goal

The overall goal of the bamboo strategy is to ensure coordinated development of the bamboo sector through; provision of high quality germplasm, propelling green economic development and production of high-value products targeting domestic, regional and international markets.

3.2 Strategic Objectives

Table 2: Strategic objectives and actions

S/No.	Strategic Objective	Activities
3.2.1.	<i>Promote and upscale bamboo production in public, communal and private lands</i>	1. Develop bamboo planting materials production protocols 2. Strengthen bamboo seedling production facilities (tree nurseries infrastructure, tissue culture facilities & greenhouses) 3. Establish a standard and certification procedure for planting materials 4. Train trainers and dissemination of techniques and technologies in bamboo propagation 5. Procure bamboo seed for mass propagation 6. Identify and map bamboo nurseries 7. Produce 225 million bamboo planting materials in ten years 8. Delineate and map bamboo growing zones in the country 9. Link different bamboo species to different agro-ecological zones (site-species matching) 10. Establish bamboo research and demonstration plots (forest, riparian and farmland) 11. Promote bamboo growing in gazetted forests (75,000 ha); riparian areas and farmlands (75,000 ha) in ten years 12. Develop and disseminate bamboo growing, maintenance and management guidelines 13. Geo-reference and map planted bamboo in public, private, farmlands and other ecologically sensitive areas 14. Develop a regulatory mechanism for inclusive exploitation of bamboo in gazetted forests 15. Develop bamboo management plans to guide activities in gazetted forests 16. Develop bamboo harvesting protocols and guidelines in public and private land

S/No.	Strategic Objective	Activities
3.2.2.	<i>Enhance bamboo value addition and link products to the market</i>	1. Promote bamboo value addition for different products 2. Develop one (1) national bamboo centre of excellence and (20) county bamboo technology incubation centres 3. Develop framework to support Micro, Small and Medium Enterprises (MSME) value chains. 4. Support access to affordable finance and credit facilities for entrepreneurs, industries and investors 5. Establish / allocate suitable infrastructure in Industrial Parks / Export Promotion Zones 6. Legislate to include bamboo products in preferential procurement list of government departments 7. Promote bamboo in construction sector 8. Develop county and national bamboo hubs or market centres 9. Develop bamboo export compensation schemes 10. Develop bamboo carbon credit schemes for growers
3.2.3.	<i>Promote bamboo research and development</i>	1. Carry out research on propagation methods using seeds and tissue culture 2. Undertake research on bamboo plantation management 3. Establish species-site matching trials 4. Introduce and screen additional potential bamboo species 5. Undertake research on pests and diseases 6. Carry out research and innovation of identified value-chains 7. Undertake research in bamboo products development, markets and marketing 8. Facilitate South-South and North-South partnership for technology transfer and research 9. Disseminate information through different fora and establishment of bamboo demonstration sites
3.2.4.	<i>Capacity building and awareness creation in promotion and management of bamboo</i>	1. Sensitize policy makers, managers and land owners on bamboo development 2. Build capacity for all value chain players 3. Incorporate bamboo development in curricula for schools, Technical and Vocational Education and Training (TVET), colleges and universities 4. Train extension staff on bamboo value chains 5. Avail research grants for apprenticeship for artisans and training at graduate and post graduate levels 6. Develop dissemination materials 7. Establish knowledge exchange platforms for information sharing
3.2.5.	<i>Promote private sector investment, public private partnerships, across the bamboo value chain</i>	1. Undertake stakeholder mapping and sensitization 2. Organise investor study tours, trade fairs and exhibitions 3. Develop standards and certification mechanisms across the bamboo value chain Develop People-Public-Private Partnership guidelines
3.2.6.	<i>Develop and institutionalise bamboo governance framework</i>	1. Establish Bamboo coordination unit at the Ministry 2. Establish appropriate bamboo development implementation committees at all levels of government 3. Reform bamboo sector through policy framework, rules and guidelines.

S/No.	Strategic Objective	Activities
3.2.7.	<i>Enhance resource mobilization, networking and partnerships for the implementation of Bamboo Strategy and Action Plan</i>	1. Map and identify potential sources of funding 2. Undertake internal fund-raising initiatives at the national and county level budgets 3. Liaise with the National Treasury to establish a Bamboo Fund to mobilize public and private financing for bamboo value chain 4. Develop proposals for donor funding 5. Undertake fundraising promotions, campaigns and expeditions with a broad spectrum of partners both locally and internationally 6. Establish a competitive grant for supporting bamboo growing 7. Develop a partnership and coordination framework for the key stakeholders nationally and internationally.
3.2.8.	<i>Develop monitoring, evaluation and reporting framework for the implementation of Bamboo Strategy and Action Plan</i>	1. Undertake baseline survey of bamboo resources 2. Develop and implement a monitoring and evaluation (M&E) system 3. Validate and update bamboo mapping tools for monitoring development of bamboo value chains 4. Sensitize, create awareness and train stakeholders and communities on the use of KEFRI App



4.0

COORDINATION AND IMPLEMENTATION OF THE STRATEGY

4.1 Coordination Framework

The overall institutional framework for implementation of the bamboo development strategy is shown in Figure 1. Within this structure are committees at various levels of coordination and implementation.

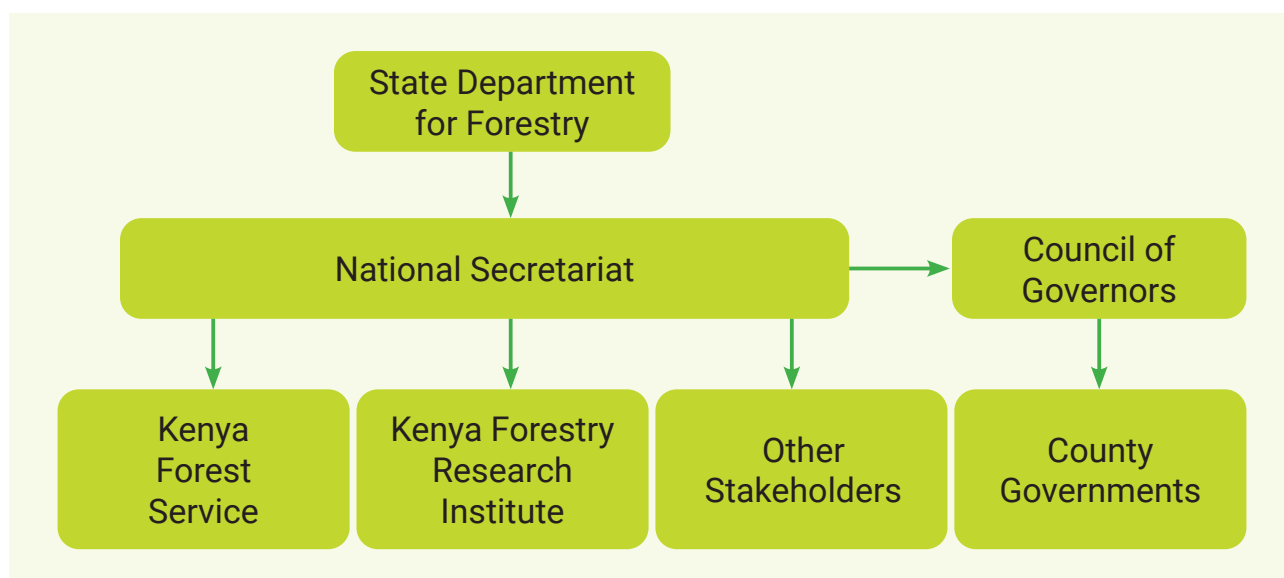


Figure 1 : Bamboo Development Institutional Framework

4.2 National Secretariat

Overall coordination of the Kenya Bamboo Development Strategy and Action Plan 2025 – 2035 will be carried out by the National Secretariat. This Secretariat, housed at the State Department for Forestry will be responsible for day to day running of the National Bamboo Strategy and Action Plan activities.

The key roles of the national secretariat will be to;

- Plan and coordinate the steering and technical committee meetings
- Receive and consolidate proposals from counties and prepare forward budgets
- Receive, review and consolidate progress reports for the National Steering Committee
- Undertake resource mobilization for the implementation of the Strategy
- Facilitate implementation of M & E of the Bamboo Strategy and Action Plan activities
- Facilitate timely release of funds to support activities at all levels after workplan approval;
- Monitor implementation of field activities in collaboration with county, sub county and ward committees;
- Custodian of data collected from field activities, correspondences, communications, software and hardware related to the Bamboo Strategy implementation

- (i) Update data bases, maps and other software related to implementation of the Bamboo Strategy and Action Plan
- (j) Organize national workshops every 2 years to share progress of activities
- (k) Any other role assigned from time to time

4.3 Linkages with the existing national Policies and Institutional Strategic plans

Development of this National Bamboo Strategy and Action Plan has been aligned to the relevant global, national and institutional initiatives from the participating Ministries, their related Semi-Autonomous Government Agencies (SAGAs) and other relevant National and International institutions.

Relevant policies include:

- The National Forest Policy (2023)
- The National Bamboo Policy (2022)
- The Convention on Biological Diversity (CBD)
- Ramsar Convention
- Sustainable Development Goals (SDGs)
- National Forest Programme (2016-2030)
- Forest Conservation and Management Act (2016)
- The Government's BETA Agenda and the respective strategic plans for Ministries of Environment, Climate Change and Forestry (2023-2027), Kenya Agricultural Marketing Strategy (AMS) 2023-2032, National Treasury and Planning
- The County Government Act (2012)

4.4 Information and technology dissemination

A robust information and technology dissemination strategy will be adopted to ensure that local communities who are expected to be the main contact persons in the implementation of the activities are well enlightened. Dissemination methods to be used will include audio-visual, social media and print - brochures, posters, handbooks, manuals, radio and TV scripts, bamboo field days, road shows and other promotion materials. Other fora are field days, exhibitions, open days, conferences and workshops. Effort will also be made to develop online platforms and applications where sharing of information in real time will be done.



Bamboo house at Michuki Park, Nairobi

5.0

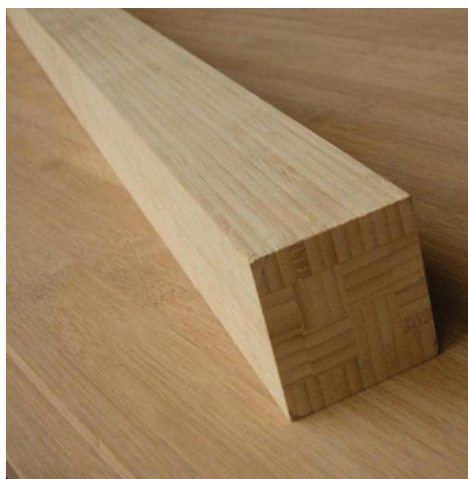
SWOT, STAKEHOLDER AND RISK ANALYSIS

5.1 SWOT analysis for bamboo sector

SWOT analysis involved evaluating Bamboo Sub-Sector internal strengths and weaknesses and its external opportunities and threats. Results of the SWOT analysis are shown in Table 1.

Table 3: SWOT analysis

Strengths	Weaknesses/constraints
• The gazettement of bamboo as a scheduled cash crop will accelerate commercialization of bamboo • Bamboo stakeholders, including farmers and donors, share common objectives and motivation to make them want to work together for sustainability of the bamboo sub-sector in Kenya • Strong and positive commitment and willingness of partners to champion development of bamboo • Legal foundation based on Government recognition of bamboo as a scheduled cash crop. • Existence of competent trainers.	• Limited funding and resources • Lack of a coordination unit • Limited information management systems • High reliance on external funding • Limited public communication framework leading to reactive approaches to addressing pertinent issues affecting the bamboo sector. • Inadequate approaches to addressing knowledge management, documentation, and dissemination of best practices and success stories among stakeholders • Limited corporate branding to create, manage, and sustain an identity for Bamboo Sub-Sector connect with/to audience (farmers and communities). • Limited content on platforms to champion Bamboo Sub-Sector cause



Bamboo plywood and bamboo lumbar

Opportunities	Threats
• Support from National and County Governments in line with Kenya Vision 2030 and Bottom-Up Economic Transformation Agenda. • Existence of the Constitution of Kenya 2010 and County Government Act 2012, which have frameworks for transformative governance principles of transparency, accountability, participation and collaboration, and coordination of public sector services. • Need for and support of the bamboo sub-sector is well pronounced in both national and global planning agenda. This provides an environment for Bamboo Sub-Sector to leverage of strategic resource to grow the sector and achieve its goals, and agriculture sector reforms and plans that have been undertaken by the Government of Kenya. • Global (INBAR, UN and SDGs) and regional (CAADP) platforms in support of agricultural sector initiatives. • Existence of smart technology for use in the bamboo sub-sector and in remote communities for sustainable development. • Existence of varied categories of stakeholders in public sector, private sector, civil society organizations, and international organizations (INBAR, JICA, World Bank, IFAD) and this can be used to tap synergy in sustainable development of bamboo propagation and production in Kenya.	• Insufficient policy coordination frameworks in the agricultural sector hence leading to complex and compartmentalization approaches in management of the sector. This makes institutional coordination highly inefficient, ineffective, unproductive, and unsustainable. • A strong political influence and pressure leading to supply-driven approach in the implementation of projects since principles of effective project design, demand driven, and sustainability are not duly taken into account. • Limited public sector financing due to competition from other social sectors of the economy and meagre national and county government budgetary provisions on the bamboo sector, for both developmental and recurrent expenditure. • Frequent changes in key personnel in the larger agricultural sector, hence leading to weak institutional memory and strategic focus. • Negative effects of climate change and its implications in the country and globally. • Conflicts over limited natural resources • Inadequate coordination framework between the county and national government over management of natural resources

5.2 Stakeholder Analysis

Given that bamboo is a cross cutting sector involving many players along the value chain, the stakeholders are diversified. Table 2 shows organizations which are currently involved in the bamboo sector.

Table 4: Stakeholder Analysis

Stakeholder	Stake/ Role in Bamboo Development
Ministry of Environment, Climate Change and Forestry	• Policy formulation on natural resources management • Management and development of bamboo production resources • Mapping, designation of forest protected areas
Ministry of Agriculture and Livestock Development	• Agricultural policy and management • Mapping, designating and developing areas ideal for large scale farming
KEFRI	• Research and development • Supply of bamboo propagation materials
Parliament	• Discuss motions and pass legislation on matters bamboo production and development
Senate	• As a legislative arm, the Senate represents the counties and their governments
County Governments	• County Governments ensure conducive environment and support for bamboo farming purposes • Land for bamboo growing • Development of County Integrated Development Plans and County Sectoral/ Spatial Plans • Utilization of bamboo in development of County Aggregated Industrial Parks (CAIPS)

Stakeholder	Stake/ Role in Bamboo Development
Kenya Seed Company	To produce and market top quality certified seed with an overall objective of adding value to the farming business and contributing to food self-sufficiency in the country
Financial institutions	- Advisory roles on co-operative and a legal framework that offer an enabling environment that is conducive for development of the bamboo sector - Financial support to bamboo farmers
Pest Control Products Board	Facilitate availability of new pesticides with proven safety, economic value, quality and efficacy for use on farms
KEPHIS	Provide a science based regulatory service by assuring plant health, quality of agricultural inputs and produce
INBAR	Support establishment of the bamboo sub-sector through financing, research, information dissemination and infrastructure
KALRO	- Promote, streamline, co-ordinate and regulate research in crops, livestock, genetic resources and biotechnology in the country - Expedite equitable access to research information, resources and technology, and promote the application of research findings and technology in the field of agriculture
AFC	Provide credit for the sole purpose of developing agriculture
KEBS	Development of comprehensive standards, Metrology, conformity assessment, training and certification services
Farmers	Production of bamboo
BAK Members	Association members and immediate stakeholders in bamboo farming and production
MSMEs	Processing of bamboo and product development
KEPSA	Coordinating the private sector in Kenya through various mechanisms and to engage in advocacy that promotes economic growth
Universities and learning institutions	Conduct research into best agricultural practices.
NEMA	Supervision and coordination of all matters relating to the environment
Kenya Forest Service	Manage water catchment areas primarily for soil and water conservation, carbon sequestration and other environmental services, establishment and sustainable management of bamboo in public forests
Development Partners	Fund raising and provision of technical financial resources

5.3 Risk analysis

The risks that could impede implementation of the strategy have been identified (Table 3). A scale of 1–5 with 1 indicating the lowest risk and 5 the highest risk is used to show the level of risk.

Table 5 Risk analysis and mitigation measures for identified threats

Risk	Risk Level	Mitigation	Responsibility for mitigation
1. Indigenous bamboo			
a. Public land Potential to overharvest	3	Undertake resource assessment	KFS, KEFRI, County Governments
Inadequate silvicultural guidelines and skills for management	3	Development of management plan and harvesting guidelines	KEFRI, KFS
2. Plantation bamboo			
a. Public land Access to resources	4	Development of management concessions and agreement between government and investors	KFS, KEFRI, Communities, Private sector,
Allocation of budgets	3	Budgeting for bamboo (create a vote for bamboo)	MoECC&F, Treasury
Adverse weather conditions	2	Monitor and share weather reports for planning	Meteorological Dept.
Species-site matching	2	Develop handbook	KEFRI, KFS
Inadequate planting materials	3	Develop capacity for tissue culture	KEFRI
Inadequate information on pests & diseases	2	- Monitor and document pests and diseases - Develop management guidelines	KEFRI, KFS
Inadequate silvicultural skills for management	2	Develop technical guidelines on bamboo management	KEFRI, KFS
b. Communal land Land tenure	4	Develop and implement concessions	Counties, Communities, MoECC& F, KFS, Private Sector
Access to resources	4	- Develop benefit sharing mechanism - Develop community governance mechanism to ensure equity in resource allocation	KFS Farmers, communities and private developers
Allocation of budgets	2	Include bamboo development in the national and County government budget cycle (CIDPs)	The Treasury CoG,
Adverse weather conditions	2	- Enhance breeding for drought resistance - Introduction of new species	KEFRI
Species site matching Inadequate planting materials	4	Select sites and species appropriately	KEFRI, KFS and KALRO

Risk	Risk Level	Mitigation	Responsibility for mitigation
Inadequate information on pests & diseases	4	Innovate alternative propagation methods of controlling pests and diseases	KFS and KEFRI
Lack of silvicultural skills for management	4	- Develop and use innovative dissemination methods - Build capacity of farmers on silviculture and promote practical skills	KFS and KEFRI
c. Private land			
Unclear land tenure hampering bamboo farming	3	Provide clear guidance on land use	National Land Commission
Counties lack funds to spur bamboo farming	3	Include bamboo farming in County Integrated development Plans (CIDPs)	CoGs
3. Political risks			
a. Political will for green bamboo economy	2	Political will to develop the green bamboo economy with policy incentives	MoECC&F Investors Counties
4. Value-addition risks			
(a) Quality perceptions on bamboo products	3	Awareness creation	KEFRI, KFS
		Mark of quality	KEBS
		Mentorship and capacity building of artisans	KEFRI, TVET
		- Capacity building on appropriate technologies and importation of modern machines. - Importation of modern machinery - Quality control	KEFRI, Private sector, Development partners
(b) Product selections	3	- Awareness creation - Selection of priority market driven products for fast tracking.	Private sector, KEFRI, KFS
		Developing standards for enforcement	KEBS
		Capacity development and mentoring of SMEs	KEFRI, MSEA, KFS
5. Financing and linkage to private sector			
(a) Pre-investment costs: high cost of project development	4	Incentives, tax waivers, guarantees and subsidies.	Treasury, Ministry of Trade and Industry, MoECC&F, Private sector

Risk	Risk Level	Mitigation	Responsibility for mitigation
(b) Access to finance	4	- Develop Bamboo financing schemes - Lower interest rates for bamboo processing equipment	Treasury, MoECC&F, Private sector, Development Partners
		- Providing grants to bamboo farmers - Fundraising through proposals/concepts	KEFRI, KFS
(c) Lack of primary processing at the source	3	- Capacity building - Provide basic equipment for primary processing - Establish semi-processing factories at source	Private sector, KEFRI, KFS
		Formation of clusters/cooperatives	KEFRI, Ministry of Trade and Industry
6. Marketing development risks			
(a) Market study	2	- Continuous market surveillance. - Ensuring product competitiveness. - Ensuring standardization of products.	KEFRI, KFS, Ministry of Trade and Industry, Private sector
(b) Market access	3	Formation of cooperative to access raw materials and products	Ministry of Trade and Industry
		Direct procurement policy by government on bamboo products for public institutions (schools, offices, hospitals, etc.).	Ministries of ECC&F, Education, National Treasury
		Bamboo machineries integrated in agricultural financing	Ministry of Agriculture & Livestock Development
7. ICT			
Information	2	Integrate bamboo information in government websites	ICT Authority
		Bamboo showroom and exhibitions with both local and international products.	KEFRI, Ministry of Interior and Coordination of National Government (Prisons)
		Development of bamboo app	KEFRI, KFS, ICTA

Risk	Risk Level	Mitigation	Responsibility for mitigation
Technology	3	- Bamboo networking and dialogue fora for stakeholders. - Develop and or adopt bamboo processing technologies and machinery - Awareness creation, training, media, targeting training for churches, cultural leaders, community leaders, etc. - Encourage Public-Private Partnership	SDF, KEFRI, KFS, Private sector, Development Partners

Scale:

Risk levels 1 and 2 are considered quite low and not likely to significantly affect the strategy and action plan. Risk levels 3– 4 are considered significant and should be addressed. Risk level 5 is considered the highest priority and must be managed urgently, as it will definitely affect the strategy implementation.



Roof trusses made from bamboo culms - at Moi Siongiroi Girls Secondary School

6.0

RESOURCE MOBILIZATION

Commercialization of Bamboo will require both financial and human resources. The government will fund implementation of the National Bamboo Strategy and Action Plan through the National Treasury and leveraging resources from development partners, bilateral and multilateral development agencies.

6.1 Financial resources

In order to implement the Kenya Bamboo Development Strategy and Action Plan 2024 - 2034, the financial requirement for Year 1 – Year 10 is estimated at KES 15 billion. For effective and successful implementation of the National Bamboo Strategy and Action Plan, it will be necessary to adopt various resource mobilization strategies. Some of the approaches are:

1. The government to create a Bamboo commercialisation program under the Ministry of Environment, Climate Change and Forestry funded by the National Treasury to support Bamboo commercialization programs at the County level with cross-sector linkages to leverage resources.
2. Leverage domestic research and development funds including; National Research Fund (NRF), the NETFUND and National Commission for Science Technology and Innovation. Each Ministry, Department or Agency (MDA) to allocate a percentage of their budgets for identified activities every year. The National Secretariat will lobby appropriately to ensure that strategy activities are given a high priority and therefore commensurate funding every year throughout the strategy plan period;
3. The Ministry of Environment, Climate Change and Forestry and National Secretariat will mobilize resources from multilateral and bilateral development partners, and climate change loan and grant funds to invest in the bamboo sector. Appropriate lobbying missions with development partners will be done as necessary.
4. Attract investment through domestic and foreign investments; including impact investment funds. Seek audience with potential national and international investors for support. A bamboo cluster approach will be developed for accelerated commercialization. The government will also explore emerging financing mechanisms such as Payment for Ecosystem Services (PES) fund for Bamboo growing and CESS from county governments.
5. Undertake fundraising promotions, campaigns and expeditions with a broad spectrum of partners both locally and internationally.

7.0

MONITORING AND EVALUATION

Regular monitoring and periodic evaluation will be undertaken at National and County levels; and as detailed the Action Plan. To achieve the objectives spelt out in the Strategy, an effective coordination, monitoring, evaluation and reporting framework will be established compatible with National Integrated Monitoring and Evaluation System (NIMES) and County Integrated Monitoring and Evaluation System (CIMES) for annual monitoring. A midterm review of the Bamboo Strategy will be undertaken after 5 years and an evaluation review at the end of the 10- year period.



8.0

IMPLEMENTATION ACTION PLAN AND BUDGET

To undertake activities and achieve strategic as well as specific objectives of the strategy, a 10-year (Year 0-1 – Short term, Year 2-5 – Medium term and Year 6-10 – Long term) implementation plan (Tables 4 and 5) is proposed. Table 4 highlights the strategic objective and the budget per year while Table 5 incorporates a 10-year budget with proposed sources of funding.



Flooring made from bamboo parquets

Table 6: Implementation Action Plan 2025 – 2035 and budget

Strategic objective	Main activity	Budget (KES) in Million KES / Year										Total Budget (in Million KES)
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	y10	
Strategic objective 1	Promote and upscale bamboo production in public, communal and private lands	346	502	810	792	1,575	1,575	2,357	2,349	2,662	3,132	16,100.30
Strategic objective 2	Enhance bamboo value addition and link products to the market	3.52	38	61.248	55.808	16.64	16.64	8.64	0	0	0	200.496
Strategic objective 3	Promote bamboo research and development	2.08	13.92	20.72	16.72	15.52	9.92	0	8	0	0	86.88
Strategic objective 4	Capacity building and awareness creation in promotion and management of bamboo	20.16	51.936	52.896	52.896	48.8	26.4	18.08	18.08	18.08	18.08	325.408
Strategic objective 5	Promote private sector investment, public private partnerships, across the bamboo value chain	0.96	1.856	7.392	7.36	7.36	7.36	7.2	7.2	0	0	46.688
Strategic objective 6	Develop and institutionalise bamboo governance framework	31.36	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	312.16
Strategic objective 7	Enhance resource mobilization, networking and partnerships for the implementation of Bamboo Strategy and Action Plan	7.2	10.4	5.6	5.6	4	5.6	2.4	2.4	2.4	2.4	48
Strategic objective 8	Develop monitoring evaluation and reporting framework for the implementation of Bamboo Strategy and Action Plan	8	3.2	3.2	3.2	11.2	3.2	3.2	3.2	3.2	11.2	52.8
Total/Year		419	365	992	965	1,710	1,675	2,419	2,419	2,717	3,195	17,172.73

Table 7: Budget and action plan 2025-2035

Activity	Target	Unit	Time frame (with indicator)										Budget (KES) in Million KES										Total Budget (in Million KES)	Source	Responsible agency	Comments		
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10						
Bamboo Resource Development																												
Bamboo planting material production																												
Strengthening planting material production system																												
Government nursery	20	nurseries / plants (in '000)	800	1200	2000	2000	4000	4000	6000	6000	6800	8000		32	48	80	80	160	160	160	240	240	272	320	1632			KES 25-cost of production of 1 seedling
Private nursery	20	nurseries / plants (in '000)	800	1200	2000	2000	4000	4000	6000	6000	6800	8000		64	96	160	160	320	320	480	480	544	640	3264	NT, DP, CG	MOECOF (KEFRI, KFS), MOA&LD, CG	Purchase cost of seedling - KES 50	
Community nursery	200	nurseries / plants (in '000)	400	600	1000	1000	2000	2000	3000	3000	3400	4000		32	48	80	80	160	160	240	240	272	320	1632			Purchase cost of seedling - KES 50	
Establish a certification and accreditation procedure																												
Develop standards and certification for planting material	4	meetings																									20 participant; 2 days each workshop	
Develop planting material production protocol	10	Protocols	5	2	2	1								1.6	0.64	0.64	0.32	0	0	0	0	0	0	0	3.2	NT	KEFRI	Input and research costs: KES 200,000 per protocol development
Dissemination of techniques and technologies																												
Publication / IEC materials	10000	Copies	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		0	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.288	NT	KEFRI	Development of printing cost - KES 25 per copy
ToT and capacity building	40	Training	10	10	10	10								3.04	2.96	2.96	2.96	0	0	0	0	0	0	0	11.92	NT	KEFRI and KFS	Training cost: 3 days: KES 185000 per training
Intensifying planting of Bamboo																												
Define Bamboo growing zones in the country	2	Meeting																									20 participant; 2 days each workshop = KES 280,000	
Criteria finalised	1	Document																								NT	KFS and KEFRI	Outcome of workshop
Identification and finalisation of zones / clusters	10	clusters	5	5										8	8	0	0	0	0	0	0	0	0	0	16	NT	KEFRI, KFS and CG	Cluster mapping, scoping studies, consultation meeting and necessary approvals = KES 1,000,000
Site-species matching																												
Report and GIS site-species matching	1	Report and Map																										Research on growth, biomass and phenology studies of different Bamboo species in different zones (Valuating 5 species)
Establish Bamboo research and demonstration plots (forest, riparian and farm land)	20	Plots	10	10										0	16	16	0	0	0	0	0	0	0	0	32	FLR	KEFRI	Similar to Farmer Field School Model - 1 demonstration plot - KES 1000000
Promote Bamboo growing in gazetted forests	102000	Ha	2000	3000	5000	5000	10000	10000	15000	15000	17000	20000		123.2	185.6	308.8	308.8	616	616	924	924	1047.2	1232	6285.6	NT, DP, FLR	KFS, CG, KWTA	Per hectare plantation cost - KES 385,000	
Promote Bamboo growing in riparian areas	51000	Ha	1000	1500	2500	2500	5000	5000	7500	7500	8500	10000		62.4	92.48	154.08	154.08	308.8	308.8	462.08	462.08	523.68	616	3144.48	NT, DP, FLR	KFS, CG, KWTA, WRUA, CFA, CBO	Per hectare plantation cost - KES 385,000	
Promote Bamboo growing in farm lands	102000	Ha	2000	3000	5000	5000	10000	10000	15000	15000	17000	20000													NT, DP, FLR	MOA&LD, CG	Provide subsidy of planting material	
Total	255000	Ha	5000	7500	12500	12500	25000	25000	37500	37500	42500	50000																

KENYA NATIONAL BAMBOO DEVELOPMENT STRATEGY AND ACTION PLAN 2025-2035

[illegible]

Activity	Target	Unit	Time frame (with indicator)										Budget (KES) in Million KES										Total Budget (in Million KES)	Source	Responsible agency	Comments	
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	y10	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	y10					
SME	20	SME			4	4	4	4	4				0	0	3.2	3.2	3.2	3.2	3.2	0	0	0	16	DP-NT	MoEP, MoPSP&DM, TYET	Support to model enterprises: Tools and Equipment's: KES 500000	
Industry	10	Industry											0	0	0	0	0	0	0	0	0	0	0		MoEP, MoPSP&DM, TYET		
Bamboo Shoots / nutrition															0	0	0	0	0	0	0	0	0		0		
ToT training and capacity building	10	ToT				2	2	2	2	2	2		0	0	1.92	1.92	1.92	1.92	1.92	0	0	0	9.6	DP-NT	MoA&LD, MoTW, MoH	Cost of training (5 days training; 20 trainees): KES 600000	
Model enterprise developed	10	SME				2	2	2	2	2	2		0	0	1.6	1.6	1.6	1.6	1.6	0	0	0	8	DP-NT	MoA&LD, MoTW, MoH	Support to model enterprises: Tools and Equipment's: KES 500000	
Support supply-chain development	10	Supply-chain											0	1.6	1.6	1.6	1.6	1.6	0	0	0	0	8	DP-NT	MoT&MoIT&I, KFS and MoA&LD	Develop associations / cooperatives with basic primary processing facility - KES 500000	
Develop centre for excellence	10	Centre											0	2.24	4.48	4.48	0	0	0	0	0	0	11.2	DP-NT	KEFRI, MoT&MoIT&I	Centre of excellence with P&I equipment (primary processing and trading facility) - KES 7000000	
Develop support framework to support Micro small and medium enterprises (MSME).																											
Support access to affordable finance and credit facilities for entrepreneurs, industries and investors.																											
Workshops and consultative meetings	4	Workshop	2	2									0.96	0.896	0	0	0	0	0	0	0	0	1.856	NT	MoT&MoIT&I, KEFRI, KFS	Cost of consultative meeting - KES 280000	
Establish / allocate suitable infrastructure in Industrial parks / Export Promotion Zone	10	Industry				2	2	2	2	2	2											NT		MoT&MoIT&I	Provide already established set up for usage		
MARKET DEVELOPMENT																											
Include Bamboo products in preferential procurement list of government departments																											
Meetings and consultative workshops	4	Meeting	1	1	2								0.48	0.448	0.896	0	0	0	0	0	0	0	1.824	NT	MoT&MoIT&I, MoF	20 participant; 2 days each workshop = KES 280,000	
Promote Bamboo in construction sector																											
Undertake / adopt research on Bamboo property tests	5	Species		2	2	1							0	1.6	1.6	0.8	0	0	0	0	0	0	4	NT	KEFRI and KEBS	Property testing of 5 species - KES 500,000 per species	
Specification and construction techniques: Code of construction	1	Construction code		1									0	1.6	0	0	0	0	0	0	0	0	1.6	NT	KEFRI, KEBS, MORT	Entire process of developing Bamboo building code	
Legislate 10% government procurement of Bamboo products																											
Workshops and consultative meetings	4	Meeting	1	1	2								0.48	0.448	0.896	0	0	0	0	0	0	0	1.824	NT	MoEC&E, NT National Assembly and Senate	20 participant; 2 days each workshop = KES 280,000	

**KENYA NATIONAL BAMBOO DEVELOPMENT
STRATEGY AND ACTION PLAN 2025-2035**

Activity	Target	Unit	Time frame (with indicator)										Budget (KES) in Million KES										Total Budget (in Million KES)	Source	Responsible agency	Comments	
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10					
Policy briefs and procurement guidelines	5	Briefs	2	2	1								1.6	1.6	0.8	0	0	0	0	0	0	0	4	NT	KEFRI, KFS, MoT&MoiT&I	1 Policy briefs - KES 50000	
Develop county and national Bamboo hubs or market centres	11	market hubs			4	4	3						0	6.4	6.4	4.8	0	0	0	0	0	0	17.6	NT, CG	CG and MoT&MoiT&I	Land for market hubs and basic infrastructure - KES 1000000	
Develop Bamboo export compensation schemes																											
Consultative meetings for developing export compensation schemes and revising import duties for Bamboo product import	4	Meetings			1	2	1						0	0.448	0.896	0.448	0	0	0	0	0	0	1.792	NT	MoT&MoiT&I	20 participant; 2 days each workshop = KES 280, 000	
Develop Bamboo carbon credit schemes for growers and processors																											
Allometrics research	5	allometrics models		1	2	2							0	1.2	2.4	2.4	0	0	0	0	0	0	6	NT	KEFRI, KFS, Universities	1 Allometrics model = 750000	
Carbon project development	10	carbon projects			2	2	2	2	2				0	6.4	6.4	6.4	6.4	6.4	0	0	0	0	32	NT	KEFRI, KFS, Universities	Assessment, plot survey; carbon project development costs = KES 2000000	
												3.52	38	61,248	55,808	16,64	16,64	16,64	8,64	0	0	0	200,496				
RESEARCH AND INNOVATION																											
Research on propagation methods	5	techniques	3	2									1.28	0.8	0	0	0	0	0	0	0	0	2.08	NT, DP	KEFRI	Bamboo propagation trials and validation - KES 250000	
Research on Bamboo plantation and management	5	Species	2	2	1								0.8	0.8	0.4	0	0	0	0	0	0	0	2	NT, DP	KEFRI	Bamboo plantation growth and biomass validation measurement - KES 250000	
Research on pest and diseases and invasives	2	Nos				1	1						0	0	0	0.8	0.8	0	0	0	0	0	1.6	NT, DP	KEFRI	Disease and pest surveillance and research - KES 500000	
Research and innovation of identified value-chains	5	value-chain		2	2	1							0	2.4	2.4	1.2	0	0	0	0	0	0	6	NT, DP	KEFRI	Value-chain and process development - KES 750000	
South South and North South partnership for technology transfer and research	2	Conference			1					1			0	0	8	0	0	0	0	8	0	0	16	DP and Bilateral funding	MoT&MoiT&I, MoECC&F	International Conference - KES 5,000,000	
Demand driven research on value-addition	10	Technologies developed		2	2	2	2	2					0	3.2	3.2	3.2	3.2	3.2	0	0	0	0	16	NT, DP	KEFRI, TVET, Universities	Technology development - KES 1,000,000	
South-South and North South technology transfer	4	Technologies transferred				2							0	0	0	4.8	4.8	0	0	0	0	0	9.6	DP Bilateral funding	MoT&MoiT&I, MoECC&F, TVET, MoF, MoF&DA	Technology transfer; manpower capacity building - KES 1500000	
Cross-learning visits	5	Visits		1	1	1	1	1	1				0	6.4	6.4	6.4	6.4	6.4	0	0	0	0	32	NT, DP and Bilateral funds	MoT&MoiT&I, MoECC&F, MoF, MoF&DA	Exposure visits - 4,000,000	
Publications in journals	50	journal paper		10	10	10	10	10					0	0.32	0.32	0.32	0.32	0.32	0	0	0	0	1.6	NT	MoE	Support for Journal Publication - KES 20000	

[illegible]

**KENYA NATIONAL BAMBOO DEVELOPMENT
STRATEGY AND ACTION PLAN 2025-2035**

Activity	Target	Unit	Time frame (with indicator)										Budget (KES) in Million KES										Total Budget (in Million KES)	Source	Responsible agency	Comments		
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10						
Commemorate International Bamboo Day	10	Fair / exhibition	1	1	1	1	1	1	1	1	1	1	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	24	NT, DP	MoECC&F	Trade Fair / Exhibition - Bamboo Day Celebration - KES 1500000	
Leverage green school programs for wider dissemination		Routine											0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	1.6	NT, DP	MoE, MoECC&F	Include Bamboo in green school programme. Misc. costs for coordination	
												20.16	51.936	52.896	52.896	48.8	26.4	18.08	18.08	18.08	18.08	18.08	325.408					
CREATING FAVOURABLE INVESTMENT ENVIRONMENT																												
Develop Incentive package for investors																												
Consultative workshops and meetings for developing incentive package for investors	4	Workshop	2	2									0.96	0.896	0	0	0	0	0	0	0	0	0	1.856	NT, DP	Ken INVEST, MoT&MoIT&I, MoECC&F	20 participant, 2 days each workshop = KES 280, 000	
Develop literature and disseminate it	200	IEC document			200								0	0	0.032	0	0	0	0	0	0	0	0	0.032	NT, DP	Ken INVEST	Printing cost - KES 100 per copy	
Organise investor study tours and B2B meeting	6	Investor meet			1	1	1	1	1	1	1		0	0	3.2	3.2	3.2	3.2	3.2	3.2	0	0	0	19.2	NT, DP	Ken INVEST, MoT&MoIT&I, MoECC&F	Investor Tour- 10 participant - KES 200000	
Develop standards and certification mechanisms for Bamboo products	7	Product	1	1	1	1	1	1	1	1			0	0	0	0	0	0	0	0	0	0	0	0				Standards / Code of Practice / Guidelines
Working Group meetings and technical committee	40	WG and TC meeting		6	6	6	6	6	5	5			0	0.96	0.96	0.96	0.96	0.96	0.8	0.8	0	0	0	6.4	NT, DP	KEBS, MoT&MoIT&I	Facilitation for working group meeting and Technical committee - KES 100000	
Public Private partnership															0	0	0	0	0	0	0	0	0	0	0	0	0	
Consultative meeting to develop mechanisms for public private partnership in Bamboo sector	4	Meeting		2	2								0	0	3.2	3.2	3.2	3.2	3.2	3.2	0	0	0	19.2	NT, DP	MoT&MoIT&I, Ken INVEST	20 participant, 2 days each workshop = KES 280, 000	
													0.96	1.856	7.392	7.36	7.36	7.2	7.2	7.2	0	0	0	46.688				
Governance structures on Bamboo established																												
Create and support a Unit for Bamboo Development at the Ministry of Environment Climate Change and Forestry																												
Constitution of Bamboo Secretariat	1	Department for Bamboo Development	1										0.16	0	0	0	0	0	0	0	0	0	0	0.16	NT	MoECC&F	Documentation costs: KES 100,000	
Bamboo Secretariat meeting	10	Meeting	1	1	1	1	1	1	1	1	1	1	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	1.6	NT	MoECC&F	Internal office meeting: KES 100,000	
		Committee	1																						NT	MoECC&F	Internal meeting through official order	
		Meeting	2	2	2	2	2	2	2	2	2	2	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	3.2	NT	MoECC&F	Meeting costs: KES 100,000	
Create and support Bamboo Unit at MoECC&F	1	Directorate	1	1	1	1	1	1	1	1	1	1	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	48	NT	MoECC&F	Annual Maintenance costs: KES 3000000	
Establish and support a Bamboo development Unit in each Bamboo growing county / cluster	10	Agency	10	10	10	10	10	10	10	10	10	10	24	24	24	24	24	24	24	24	24	24	24	240	NT	Council of Governors	Annual Maintenance costs: KES 1500000	

Activity	Target	Unit	Time frame (with indicator)										Budget (KES) in Million KES										Total Budget (in Million KES)	Source	Responsible agency	Comments					
			Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10									
Establish and support inter-agency technical committee at national level	1	Committee	1																						NT	MoECC&F	Office order				
	40	Meeting	4	4	4	4	4	4	4	4	4	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	19.2	NT	MoECC&F KEFRI	Meeting costs: KES 300,000				
													31.36	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2	312.16							
RESOURCE MOBILISATION																															
Develop a Bamboo investment strategy at national and county level	2	Meeting	2									4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
																												20 participant, 1 Week: KES 1500000			
	10	budget/meeting	1	1	1	1	1	1	1	1	1	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	4.8	NT	KEFRI	20 participant, 2 days each workshop = KES 300, 000					
Develop proposals for multilateral and bilateral development and climate funds and loans																															
Meetings, consultations and proposal development	10	Proposal	1	1	1	1	1	1	1	1	1	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	19.2	NT	MoECC&F	Bamboo Development Department and proposal development personnel: KES 1200000				
PES services institutionalized																															
Undertake studies to determine the PES potential in different Bamboo growing zones	1	Study	1									0	8	0	0	0	0	0	0	0	0	0	0	8	NT, DP	MoECC&F KEFRI, KFS,	One Study: 5, 000, 000				
	1	Pilot			0.4	0.4	0.2					0	0	3.2	3.2	1.6	0	0	0	0	0	0	0	8	NT, DP	MoECC&F KEFRI, KFS,	Piloting a model: KES 5, 000,000				
	10	Cluster										0	0	0	0	0	0	3.2	0	0	0	0	0	3.2	NT, DP	MoECC&F KEFRI, KFS, CG	Developing business cases for replication - KES 2,000,000				
												7.2	10.4	5.6	5.6	4	5.6	2.4	2.4	2.4	2.4	2.4	48								
												0	0	0	0	0	0	0	0	0	0	0	0	0							
MONITORING AND EVALUATION												31.36																			
Develop baseline and monitoring framework	1	Baseline	1									4.8	0	0	0	0	0	0	0	0	0	0	4.8	NT	MoECC&F (KEFRI and KFS)	Baseline data collection - KES 3,000,000					
Monitoring and evaluation																															
Monitoring		Routine	1	1	1	1	1	1	1	1	1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	32	NT	MoECC&F	Annual monitoring costs - KES 2,000,000				
External Evaluation	2	Evaluation					1					1	0	0	0	0	8	0	0	0	0	0	8	16	NT	MoECC&F	External Evaluation - KES 5,000,000				
Total Budget (Y1-Y10) in million			Annual Budget (in Millions)										8	3.2	3.2	960	1705.6	1670.4	2424	2416	2716.8	3194.944	52.2								
Total Budget (Y1-Y10) in billion KES			Total Budget (Y1-Y10) in billion KES										0.008	0.032	0.032	0.960	1.7056	1.6704	2.424	2.416	2.7168	3.194944	17.17273								

REFERENCES

- Cheboiwo J.K. and Githiomi J.K. (2012). The Status and Dynamics of Forest Products Supply and Demand in Kenya. A Paper Presented at the First IUFRO-FORNESSA Regional Congress in Nairobi, Kenya 25-29th June 2012.
- Creapo Oy (2015). Furniture Industry in Kenya: Situational Analysis and Strategy. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/22973> License: CC BY 3.0 IGO
- Gauli K., J. Durai and N. Oduor. (2018). Value Chain Analysis and Market Assessment of Bamboo Products in Kenya. International Bamboo and Rattan Organisation (INBAR) Working Paper, Beijing, China. Pp 80.
- INBAR (2018a). International Trade of Bamboo and Rattan in China in 2016. International Bamboo and Rattan Organisation- INBAR, 2018. Beijing, China
- INBAR. (2018b) Regional Bamboo Resource Assessment Report of Ethiopia, Kenya and Uganda. International Network for Bamboo and Rattan (INBAR), Report. Available at: https://www.inbar.int/resources/inbar_publications/remote-sensing-based-regional-bamboo-resource-assessment-ethiopia-kenya-and-uganda/
- INBAR (2021a). Trade Overview 2018: Bamboo and Rattan Commodities in the International Market. Beijing, China: INBAR
- INBAR (2021b). Trade Overview 2019: Bamboo and Rattan Commodities in China. Beijing, China: INBAR
- MENR (1994). "A 25-year Master Plan for forestry Sector Development in Kenya". Kenya Forestry Master Plan (KFMP) Development programmes. Ministry of Environment and Natural Resources. Forest Department Headquarters, Nairobi.
- MEWNR (2013). Analysis of Demand and Supply of wood products in Kenya, Ministry of Environment, Water and Natural Resources, WANLEY Consultancy Services, Nairobi, Kenya
- National Construction Authority (NCA). (2020). The Construction Industry Outlook in Kenya: Industry Statistics and Trends - 2020
- Research and Markets, (2020). Global Bamboos Market - By End-User (Construction, Wood and Furniture, Paper and Pulp, Textile, Medical, Agriculture, Food Products), and By Region: Latest Industry Insights, Comprehensive Analysis and Forecast 2019 – 2026. A report. Pp 157.
- Research and Markets, (2021). Bamboo Market Size, Share & Trends Analysis Report by Application (Industrial Products, Shoots, Furniture, Raw Materials), by Region (North America, Europe, APAC, CSA, MEA), and Segment Forecasts, 2021 – 2028. A report Pp 103.
- Wass, Peter (Ed.) (1995). Kenya 's Indigenous Forests.' Status, Management and Conservation. IUCN, Gland, Switzerland, and Cambridge, UK. xii + 205pp
- World Bank (2017). . Kenya Economic Update: Housing Unavailable and Unaffordable. Edition No. 15 2017. Accessed: <https://documents1.worldbank.org/curated/en/988191491576935397/pdf/114115-REVISED-PUBLIC-KenyaEconomicUpdateFINALFINALMay.pdf>
- Yuan Yuan Zhao, Duole Feng, Durai Jayaraman, Daniel Belay, Heiru Sebrala, John Ngugi, Eunice Maina, Rose Akombo, John Otuoma, Joseph Mutyaba, Sam Kissa, Shuhua Qi, Fiker Assefa, Nellie Mugure Oduor, Andrew Kalema Ndawula, Yanxia Li, Peng Gong. (2017). Bamboo mapping of Ethiopia, Kenya and Uganda for the year 2016 using multi-temporal Landsat imagery. International Journal Applied Earth Observation and Geoinformation. Volume 66, April 2018, Pages 116-125. <https://doi.org/10.1016/j.jag.2017.11.008>



For further information, please contact:

Principal Secretary
State Department for Forestry
Ministry of Environment, Climate Change and Forestry



ps@forestry.go.ke



www.environment.go.ke



State Department for Forestry



@forestry__ke