



REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT AND FORESTRY



National Bamboo Policy 2022



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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 sub-sector has experienced poor performance in the past.

Key barriers that have impeded 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, limited information, and inadequate decision making tools at both National and County Government levels.

Bamboo can be an important tool to achieve some of the objectives of the national development agenda including; Vision 2030, The National Strategy for Achieving and Maintaining Over 10% Tree Cover, Medium Term Plan (MTP) III, Big 4 Agenda, and other international obligations including; Sustainable Development Goals (SDGS), and Bonn Challenge.

This Bamboo Policy 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 sub-sector development in Kenya. In addition, Bamboo with its intrinsic nature to contribute to watershed development (soil and water conservation) and carbon sequestration will enhance ecological benefits.

This Bamboo Policy 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 Policy on its own is insufficient in bringing about the envisaged Bamboo commercialization.

There is a need for commitment from all citizens to ensure that contents of this Policy are implemented as per the attached implementation plan, 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.

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke, positioned above the typed name.

**Keriako Tobiko, SC, EGH,
Cabinet Secretary, Ministry of Environment and Forestry**

PREFACE

This policy aims at developing a vibrant bamboo industry benefiting present and future generations through sustainable management, increasing area grown with bamboo and enabling commercialized value-addition.

The content includes: production of quality planting material of required species in required quantities, increase the area cover of bamboo in government plantations, public spaces or private land in order to ensure sustainable supply of feed-stock to artisanal and large scale industries, sustainable management of the existing bamboo resources to derive economic, social and environmental benefit, development of holistic value-chain from quality planting material production, plantations, product development including primary processing, treatment; micro, small & medium enterprises, industrial products, marketing, and skills development, Intensification and expansion of research on bamboo to cover broad areas of application including; timber substitutes, bio-energy, fibres and textiles, food, construction and landscape restoration.

Other areas covered are: establishment of a National and Country-based Coordination structure to aid coherence in implementation of the Policy, development of strategies and regulations, promotion of capacity building at all levels including through technical assistance and technology transfer, and creation of an enabling environment for investment and scaling up of bamboo enterprises and industries.

Department for Bamboo development and commercialization under the Ministry responsible for Environment and Forestry at both levels of government is recommended.

Resources for commercialization of bamboo are to be raised from National Treasury with cross-linkages with on-going programmes and mobilization of resources from multilateral and bilateral development partners and through domestic and foreign investment.

Support to development and application of result-based monitoring and evaluation frameworks compatible with National Integrated Monitoring and Evaluation System (NIMES) is recommended.



Dr. Chris K. Kiptoo, CBS

Principal Secretary, Ministry of Environment and Forestry

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ACRONYMS AND ABBREVIATIONS

APC	Africa Plantation Capital
CBO	Community Based Organisation
CFA	Community Forest Association
CG	County Government
DP	Development Partners
EAC	East African Community
FAO	Food and Agricultural Organisation
FLR	Forest Landscape Restoration
GBM	Green Belt Movement
GO	Government Organisations
GPE	Green Pot Enterprises
Ha	Hectare
ICRAF	World Agroforestry Centre
IEC	Information Education and Communication
INBAR	International Bamboo and Rattan Organisation
KEBS	Kenya Bureau of Standards
KenINVEST	Kenya Investment Authority
KEPHIS	Kenya Plant Health Inspectorate Services

KEFRI	Kenya Forestry Research Institute
KICD	Kenya Institute of Curriculum Development
KFS	Kenya Forest Service
Ksh	Kenya Shillings
KWTA	Kenya Water Towers Agency
MoALF&C	Ministry of Agriculture Livestock Fisheries and Cooperatives
MoEF	Ministry of Environment and Forestry
MoES&T	Ministry of Education, Science and Technology
MoFA	Ministry of Foreign Affairs
MoH	Ministry of Health
MoITED	Ministry of Industrialization, Trade and Enterprise Development
MoICT	Ministry of Information, Communication and Technology
MoTIHUDPW	Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works
MoTW	Ministry of Tourism and Wildlife
MoPSYG	Ministry of Public Service, Youth and Gender Affairs
MSEA	Micro and Small Enterprise Authority
MSME	Micro, Small and Medium Enterprises
MTP	Medium Term Plan

NGOs	Non-Governmental Organizations
NIMES	National Integrated Monitoring and Evaluation System
NRF	National Research Fund
NT	The National Treasury
PES	Payment to Ecosystem Services
PLC	Private Limited Company
PPP	Public Private Partnership
SDG	Sustainable Development Goals
SEKU	South Eastern Kenya University
SME	Small and Medium Enterprises
TVET	Technical Vocational Education and Training
UN	United Nations
USD	United States Dollars
VIRED	Victoria Institute of Research in Environment and Development
WRUA	Water Resource User Association
%	per cent

ACKNOWLEDGEMENT

The National Bamboo Policy has been developed through a consultative process with contribution from key stakeholders in the bamboo sub-sector. The Ministry of Environment and Forestry wishes to acknowledge contributions by partners drawn from the National and County Governments, Academia, the private sector and individuals for their commitment and content enrichment during development of this policy.

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

Lastly our appreciation goes to the Dutch-Sino-East Africa Bamboo Development Programme for financial support towards the development of this Policy.

1.0 INTRODUCTION

1.1 Background

- 1.1.1 Bamboo is among the fastest growing woody plants in the world. It is a perennial plant belonging to the grass family *Poaceae*, subfamily *Bambusoideae*. There are over 1600 species of bamboo growing in different agro-ecological zones, ranging from sea level to 4000 meters above mean sea level. Bamboo is mostly found in the tropical and sub-tropical regions.
- 1.1.2 Bamboo has proven potential for ecosystem services such as; soil erosion control, recharge of sub-surface water resources, climate change mitigation and adaptation. There are over 10,000 documented bamboo products which include subsistence use products, timber substitutes, fibre and textile, plastic composites, food and beverage, energy, health and cosmetic industry products.
- 1.1.3 The Kenya Parliament in September 2020 classified bamboo as a cash crop and recorded it as the 16th scheduled cash crop in the country. This classification was done to accelerate commercialisation of bamboo.
- 1.1.4 A resource assessment by the Food and Agriculture Organization (FAO) and the International Bamboo and Rattan Organisation (INBAR) in 2005 showed that countries in Asia, Africa and Latin America have combined bamboo coverage of 37 million hectares. This accounted for about one per cent of the global forest area. Data from five countries in Africa namely; Ethiopia, Kenya, Nigeria, Uganda and Tanzania, indicate a combined bamboo coverage of 2.8 million hectares representing 4.1 per cent of the forest area in these countries.
- 1.1.5 Bamboo is a versatile resource which has potential to contribute to; job creation, poverty eradication, economic development and sustainable management of the environment. About 1.5 billion people depend on bamboo with an annual production and consumption of 20 million tons. In 2019, the global bamboo market was valued at over USD 72 billion, with an international trade of about USD 2.9 billion per annum.

- 1.1.6 Bamboo has been an integral part of indigenous forests in Kenya. *Oldeania alpina* (Syn. *Yushania alpina*) commonly known as highland bamboo is the only indigenous bamboo species that grows naturally in the country, occurring between 2,200 m and 3,400 m above sea level. Bamboo forests once covered over 400,000 hectares. This has reduced to about 133,273 hectares majorly located in government land / forest reserves. Since 1980s, growing bamboo has been taken up in many counties including; Migori, Vihiga, Busia, Homa Bay, Uasin Gishu, Elgeyo Marakwet, Kirinyaga, Kitui, Laikipia, Nyandarua, Embu and Tharaka Nithi. In these counties, bamboo is grown as a crop on the farms although not on a large scale.
- 1.1.7 Bamboo has continued to gain recognition in Kenya as a multipurpose plant with many uses including: timber substitute; bio energy source; a sustainable raw material for MSMEs; and, ecosystem services such as protection of water catchment areas. Intensifying growing of bamboo in forests and on farms is therefore important not only to ensure sustained supply to industries but also for domestic consumption. Bamboo growing will also contribute to: the National Strategy for Achieving and Maintaining Over 10% Tree Cover; Forest Landscape Restoration (FLR); and Bonn Challenge targets.
- 1.1.8 By the year 2000, an estimated 25 million bamboo poles were harvested annually mainly from gazetted forests. The poles were used for fencing, scaffolding, and construction of houses especially in rural areas. Bamboo splits are used for making baskets for harvested fresh tea leaves, as well as farm and household baskets. Communities living around Mount Elgon eat bamboo shoots as a delicacy. Bamboo poles, furniture, handicrafts and seedlings are the current main products from the bamboo value chain in the local market.

- 1.1.9 In Kenya, bamboo products import and export account for 0.06% and 0.02% respectively of the global 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 products imported were bamboo flooring tiles, plywood and furniture. Despite this low value of trade in bamboo, there is a great potential for improving the export trade while at the same time reducing import of bamboo products. This increase in export while reducing import will enable Kenya improve on balance of trade with other countries which are currently exporting bamboo products into the country.
- 1.1.10 Bamboo has potential to contribute to achieving Kenya Vision 2030 and the Big Four Agenda. Specifically, bamboo can directly contribute to “economic and social pillars” and flagship programs of the Vision with a focus on: MSME development; promoting manufacturing; rehabilitation of degraded lands and landscapes; ensuring equity; and eradicating poverty. Under the Big Four Agenda, bamboo will contribute to; promoting manufacturing, and supporting provision of affordable ecologically-friendly housing.
- 1.1.11 Bamboo development and promotion is advanced in different policies, strategies and plans including; MTP III, 2018-2022; Forest Conservation and Management Act, 2016; the Kenya Climate Change Framework Policy, 2016; the Kenya Green Economy Strategy and Implementation Plan, 2016-2030; and the National Industrialisation Policy, 2012-2030. Bamboo also has relevance in contributing to achieving objectives of; the Constitution of Kenya, 2010; the Kenya National Forest Program, 2016-2030; draft Kenya National Forest Policy, 2020; Agriculture (Farm Forestry) Rules 2009; and the Micro and Small Enterprise Act of 2012. Details and relevance of bamboo to the aforementioned policies and strategies are shown in **Annexure I**. However, bamboo has not had prominent investment focus and this has slowed its development and utilization. It is therefore important to develop a bamboo specific policy as well as a strategy and action plan to promote its growing and commercialization at national level.

1.2 Historical Perspective

- 1.2.1 During the colonial period, large areas of Kenya's indigenous forests including bamboo forests were cleared to establish large scale plantations of exotic tree species such as cypress, pine, eucalypts and indigenous trees that include Podo, Meru Oak, and Cedar. During the post-independence period, the Government allocated large areas of indigenous forests including those with bamboo to communities and investors for establishment of agricultural and horticultural farms.
- 1.2.2 Research to introduce and validate suitability of different types of bamboo to Kenya's agro-ecological conditions started in 1986. Twenty-two bamboo species were introduced from Asia. Among the 12 which were found to be suitable for different agro-ecological zones in Kenya include: *Bambusa brandisii*, *Bambusa vulgaris var. vulgaris*, *Bambusa vulgaris var. vittata*, *Bambusa bambos*, *Bambusa tulda*, *Dendrocalamus membranaceus*, *Dendrocalamus strictus*, *Dendrocalamus asper*, *Dendrocalamus hamiltonii*, *Gigantochloa aspera*, *Oxytenanthera abyssinica*, and *Thyrsostachys siamensis*.
- 1.2.3 Technologies on value-addition of bamboo have been developed by Ministries responsible for Environment, Forestry, and Agriculture and Non-Government Organizations (NGOs). Kenya Forestry Research Institute (KEFRI) and partners have also developed various information materials including: A Guideline for Growing Bamboo (1995); Guideline on Propagation; Management and Utilization of Bamboo (2017); Bamboo Cultivation Manual (2009); and Guidelines for Establishment and Management of Bamboo Plantations in Kenya (1995). Equipment for research and value addition of bamboo are also available at KEFRI National Forest Products Research Programme in Karura. Non-governmental organizations (NGOs) namely Victoria Institute of Research in Environment and Development (VIRED) based in Kisumu and Green Belt Movement (GBM) are promoting bamboo growing for land rehabilitation within their project target areas. A private entrepreneur has established a workshop in Vihiga County for making small handicrafts using bamboo culms.

- 1.2.4 Various development initiatives were undertaken by INBAR in partnership with KEFRI, Maseno University and South Eastern Kenya University (SEKU). These 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; and Development and promotion of Bamboo housing in East Africa. Currently, the Dutch-Sino East Africa Bamboo Development Programme is being implemented in Ethiopia, Kenya and Uganda.
- 1.2.5 Farmers mainly in South Nyanza have taken up bamboo growing. In recent years, two private players; Green Pot Enterprises (GPE) and African Plantation Capital (APC) are in the process of establishing large scale plantation on farms. In addition, a number of private nursery operators namely; Kitil Farm, Nyabera PLC, and Tiriki Gardens and Farm, have large scale nurseries producing and selling bamboo seedlings. Other notable large scale nurseries are in 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 in Busia County.

2.0 NEED FOR A BAMBOO POLICY

Despite potential of bamboo for economic, social, environmental development and response to climate change challenges, the bamboo sector is largely underdeveloped. Key barriers to development of the bamboo sector include: lack of policy / strategic direction; inadequate supply of quality planting materials; high cost of bamboo seedlings; lack of coordinated bamboo development and inadequate resources; inadequate research emanating from low funding; low level of technological adoption and innovation; weak marketing systems; and limited information and decision making tools at the national and county levels.

2.1 Bamboo can contribute to Big Four Agenda: Pillar 1:

Manufacturing (value addition of bamboo into sustenance use products, semi-industrial (MSME) and industrial products production creating rural and urban jobs); Pillar 2: Food security and nutrition (Bamboo shoots are food for humans; and feed and fodder for livestock); and Pillar 4: Affordable housing (Bamboo is a suitable construction material).

2.2 Bamboo contribute to UN Sustainable Development Goals:

Based on INBAR's declaration of UN summit for the adoption of the post-2015 development agenda, Bamboo contributes to ten of the 17 Sustainable Development Goals namely: SDG 1 (End poverty in all its forms everywhere); SDG 2 – (Zero hunger); SDG 5 – (Gender equality); SDG 7 (Affordable clean alternative energy for domestic and industrial use especially for food processing industries and reduces dependence of forests, electricity poles); SDG 9 (Industry, innovation and infrastructure development); SDG 11 (Sustainable cities and communities); SDG 12 (Responsible consumption and production); SDG 13 (Climate action); SDG 15 (Enhance the quality of “Life on land”) and SDG 17 (Establishing partnerships for the goals).

2.3 **Bamboo contributes to Kenya Vision 2030:**

Bamboo can directly contribute to the economic and social pillars of Kenya Vision 2030. Specifically, bamboo can play a role by increasing value in: agriculture (bamboo can provide additional annual income to smallholder farmers, increase green cover, and provide economic and environmental benefits through cultivation in uncultivated and degraded lands); manufacture for regional markets (production of bamboo products can lead to import substitution and supply to regional markets); environment (bamboo can be a suitable crop for watershed management and is an important vegetation in Mau Forest Complex, Mt. Kenya Forest, The Aberdare Range, Cherang'any Hills and Mt. Elgon Forest); housing and urbanization (Bamboo can be a suitable construction material for both affordable and high-end housing); and equity and poverty reduction for women, Youth and Vulnerable groups (bamboo based micro, small and medium scale enterprises can be established with little investment and at the same time provide large scale employment and jobs).

2.4 **Bamboo directly contributes to climate change mitigation and adaptation:**

Bamboo can sequester carbon comparable and superior to many tree species, reducing carbon release offering an alternative, provide renewable source of biomass energy, adaptation (it can thrive in poor soils, effective wind break); restoration (it can grow in steep slopes that are unsuitable for other crops, and its sturdy rhizomes and roots regulate water flows and prevent erosion).

2.5 **Potential Market Opportunity:**

Kenya can enormously benefit by enhancing production and consumption of bamboo. Value-chains that have enormous domestic potential include; furniture, reconstituted timber, fibre and textiles, bamboo in the construction industry and clean energy generation for domestic and industrial uses.

2.6 **Furniture market:**

Kenya's furniture market is estimated to account for USD 496 million with an annual compound growth rate of 10 per cent per annum. Bamboo furniture and seats are one of the most important globally traded commodities

2.7 **Timber substitute:**

Kenya imports considerable amount of wood and articles of wood which is valued at USD 31 million per annum. Annual domestic demand of wood/timber in Kenya is estimated at 41 million m³, out of which demand for timber, construction poles, firewood and charcoal are estimated to be 5 million m³, 1.4 million m³, 18.7 million m³ and 16.3 million m³ respectively.

2.8 **Bamboo construction:**

World Bank (2017) shows that there is an overall housing deficit of 2 million housing units in Kenya. This creates an opportunity for promoting Bamboo as a housing construction material for rural and urban construction attributed to being low-cost and high-end. Use of Bamboo in scaffolding can reduce pressure on natural forests as a source of poles.

2.9 **Bamboo energy:**

Woodfuel is the main source of cooking fuel in Kenya. About 82 % of the urban households and 34 % of the rural households depend on charcoal with the industry employing about 1 million people. The annual consumption of charcoal is estimated between 1.6-2.4 million MT, and its contribution to the economy is valued at KES 135 billion. This results in deforestation and degradation of 135, 000 ha of forests annually, out of which 60 per cent is from state forests. The scale of energy market provides opportunities for the bamboo sector to tap into the existing huge energy market. Bamboo as fuelwood, chips, pellets, charcoal and briquettes are a proven energy source, which can contribute to household, SME and large industries energy demand.

3.0 POLICY GOAL, OBJECTIVES AND GUIDING PRINCIPLES

3.1 Goal

The goal of this policy is;

To develop a vibrant bamboo sub-sector benefiting the present and future generations through sustainable management, increasing area cover of bamboo and enabling commercialization through value-addition.

3.2 Objectives

Objectives of this policy are to;

- a) Enhance production of quality planting material of required bamboo species in right quantities.
- b) Increase the area cover of bamboo through growing the species in Government plantations (102,000 ha), public spaces, and private land particularly on degraded landscapes and riparian areas (153,000 ha) by 2031.
- c) Ensure sustainable supply of bamboo raw material to artisanal and large scale industries.
- d) Sustainably manage the existing bamboo resources to derive economic, social, environmental and climate change management benefits.
- e) Facilitate development of holistic bamboo value-chain from quality planting material to high value products
- f) Enhance development of plantations to supply raw materials for processing by micro, small and medium enterprises and industrial scale investments.
- g) Intensify and expand research to cover a broad area of bamboo application including its use for; timber substitutes, construction, bio-energy, food and nutrition, fibres and textiles, and landscape restoration, as well as machines and tools.
- h) Establish a national and county-based coordination structures to aid consistency in implementation of; Bamboo Policy, development strategies, regulations, and standards.
- i) Promote capacity building at all levels through formal education, technical assistance and technology transfer.
- j) Create an enabling environment for investment and scaling up of bamboo enterprises and industries.

3.3 Guiding Principles

Implementation of this policy will be guided by the following principles:

a) **Right to a clean and healthy environment:**

Under the Constitution of Kenya (2010), every person in Kenya has a right to a clean and healthy environment and a duty to safeguard quality of the environment. Growing bamboo will contribute to: safeguarding quality of water resources; eradicating poverty; ensuring food and nutrition security; renewable bio-energy security; and biodiversity.

b) **Government led and market driven:**

Market has a fundamental role in driving the bamboo sub-sector. Support will therefore be provided by the Government to promote bamboo value-chain, upgrade product quality and market competitiveness of bamboo products.

c) **Bamboo for green growth:**

Bamboo being a renewable resource is ideal for promoting low-carbon, environmentally friendly products, and thereby green growth. Growth of bamboo sub-sector will have an impact on carbon sequestration, climate change mitigation and adaptation as well as conservation of forests through product substitution.

d) **Bamboo for increasing farmers' incomes and resilience:**

Promoting bamboo industry can contribute to increasing small scale farmer's income and resilience, and reducing persistent poverty.

e) **Bamboo for reducing pressure on forests:**

Utilization of bamboo for production of diverse timber-based products and energy products will reduce pressure on plantation, private, and natural forests.

f) **Gender, youth and vulnerable groups:**

Bamboo sub-sector contributes to gender equity and equal opportunity to youth and vulnerable groups by providing jobs and income through; bamboo planting, sustainable management, primary processing, and value addition.

4.0 POLICY DIRECTIONS

4.1 Bamboo Resource Development

Developing a robust bamboo resource base as well as sustainable management of existing bamboo resources is critical for development of diverse bamboo value-chains. The expanded resource base will ensure sustainable supply of raw materials of appropriate species to Micro, Small and Medium Enterprises (MSMEs) and large industries.

This policy has three strategies for its implementation

1. Increase production and distribution of quality bamboo planting material.
2. Increase the bamboo resource base through growing it on farm lands, degraded sites, public spaces and forest land.
3. Sustainably manage existing natural bamboo resources.

4.1.1 Production and Delivery of Quality Planting Material

Production of quality planting material is necessary for successful establishment of high quality bamboo plantations and woodlots.

Policy statement:

The Government will;

1. *Support production of quality planting material of required species in adequate quantities through strengthening of Government, private and community nurseries.*
2. *Establish a certification and accreditation procedure for ensuring the quality of planting material.*
3. *Support research, technology development and dissemination for production of quality planting material especially through vegetative propagation, tissue culture, and quality seed.*

4.1.2 Intensifying growing of Bamboo

Increased area of bamboo in gazetted forests, public spaces and farm land will increase bamboo resource base. The increase in area under bamboo will enhance; eco-system services mainly water and soil conservation, reduction in disasters such as landslides, and enhance resilience to climate change. The regenerative capacity of bamboo can greatly enhance resilience of rural households through;

additional income generation opportunities, provision of food, animal feed and fodder, and provision of biomass for renewable energy.

Policy statement:

The Government will:

- 1. Undertake site-species matching to promote suitable bamboo species in different agro-climatic zones.*
- 2. Allocate at least 5 per cent of overall annual tree planting budget (both at national and county level) to promote planting and management of bamboo.*
- 3. Promote large scale bamboo planting in Government land to achieve multiple objectives of; production, restoration of degraded landscapes, production of bamboo shoots, industrial exploitation, and soil and water conservation.*
- 4. Allocate suitable degraded forest land to investors for intensive product-targeted growing of bamboo.*
- 5. Promote bamboo planting in small holder farms to generate additional income for small holder farmers.*
- 6. Promote bamboo planting in riparian areas and in watersheds in line with wetlands policy and regulations.*
- 7. Mandate planting of bamboo on river banks and lake shores at least 30 meters from river banks and 50 meters around water bodies such as like lakes, and dams.*
- 8. Mandate planting of bamboo in forest land of above 30-degree slope, and in terraces within farm land.*

4.1.3 Sustainably manage Bamboo resources

Bamboo in gazetted forests accounts for about 95 per cent of bamboo resources in Kenya. These resources are currently not managed and / or harvested under principles of sustainable management.

Policy statements:

The government will:

- 1. Support development of Management Plan and Guidelines and implement the Sustainable Bamboo Forest Management Zonation.*
- 2. Strictly prohibit clear felling, burning, and changing bamboo forests into other land uses in line with the Forest Management and Conservation Act of 2016.*

3. *Provide bamboo access tenure to Community Forest Associations (CFAs), private companies, Community-Based Organizations (CBOs) and large scale investors to sustainably harvest bamboo.*

4.2 Promoting Value-Addition and Value-Chains

Commercialization of bamboo will be founded on private sector driven and Government propelled optimization of value-chains that target mass and niche markets. Complementary to this, artisanal enterprises by youth and women development associations will augment growth of the sector.

Policy Statement:

The Government will:

1. *Promote bamboo value-chains to contribute to the “Big Four Agenda” and “Medium-Term Plan III” of Vision 2030 especially; affordable housing, improved food and nutrition security, and industrialization and manufacturing.*
2. *Develop a centre of excellence with facilities for primary processing and value-addition to provide handholding services.*
3. *Create an enabling environment to support investment by micro, small and medium scale enterprises and large scale industries.*
4. *Support access to affordable finance and credit facilities for entrepreneurs, industries and investors.*
5. *Support development of technologies, package of practices and innovation for development of MSMEs and industrial bamboo-based value-chains.*
6. *Provide capacity building and extension services to MSMEs and industries.*
7. *Promote bamboo value-chains and industries focussed on developing timber substitutes, renewable energy and Bamboo fibre products to reduce foreign exchange burden from imports and enhance revenue from exports.*
8. *Incentivize commercialization of bamboo through tax rebates on imported equipment, tools and machines as well as by lowering electricity tariffs for bamboo factories.*
9. *Create Bamboo export promotion zones and allocate suitable infrastructure in existing industrial processing zones.*

4.3 Market Development

Markets for bamboo products are largely underdeveloped due to lack of mature domestic markets for products, as well as lack of consumer awareness and confidence.

Policy statements

The Government will:

- 1. Include bamboo and its products in preferential procurement list to provide initial market support for MSMEs and industries.*
- 2. Promote bamboo as a substitute of wood/timber in the construction industry. For example, use bamboo in scaffolding, rural and urban housing and constructing eco-tourism structures.*
- 3. Legislate 10% of procurement opportunities for wood related items in favour of bamboo.*
- 4. Support Information Education and Communication (IEC) and public awareness through television and radio programs to promote bamboo as a green and renewable product.*
- 5. Open up government procurement by creating cross-sector linkages.*
- 6. Provide suitable land to Community Forest Associations, cooperatives and other community groups to develop local, county and national bamboo hubs or market centres.*
- 7. Introduce export compensation scheme and export marketing development fund to facilitate domestic and international trade; and absorb market shocks.*
- 8. Develop regulations to protect local bamboo manufacturers from imports.*
- 9. Register bamboo with the carbon credit trading schemes to generate additional income to farmers through carbon markets.*

4.4 Research and Innovation

Research and innovation will be crucial to commercialization of bamboo. Research and innovation efforts will be pursued to effectively manage and disseminate generated knowledge.

Policy Statements

The government will:

- 1. Support research, innovation and technology generation by Government research Agencies and Universities on bamboo resource development including: planting material production protocol aimed at reducing the cost of planting material and to produce quality plants free of pests, diseases and invasiveness; value-chain; product development; and entrepreneurship.*
- 2. Create a bamboo knowledge exchange platform drawing on representation from research institutions, universities, industries and entrepreneurs to accelerate need-based technology generation, development, expansion and industrialisation.*
- 3. Develop South-South and North-South cooperation and mechanisms for technology transfer, innovation and investment.*
- 4. Support scientists to engage with counter-parts in other countries for exchange of knowledge and expertise.*
- 5. Support scientists to publish and access published literature especially in Journals*

4.5 Education, Training and Skills Development

Developing human resource capital specialised across bamboo value-chain is critical for commercialization of bamboo. Capacitated human resource capital will be necessary to provide extension services, capacity building of farmers, entrepreneurs and industry players.

Policy statement:

The Government will:

- 1. Enable development of bamboo augmented curricula and introduce teaching of bamboo in forest and agriculture related technical schools and universities.*
- 2. Introduce bamboo value-chain entrepreneurship and technical training courses in Technical Education and Vocational Training Institutes (TVETs).*

- 3. Support development of a pool of technical experts to provide extension support services and capacity building for farmers, MSMEs entrepreneurs, workers and industries.*
- 4. Support development of training packages and technical material on bamboo for dissemination.*
- 5. Support production and dissemination of technical video and radio programs on different Bamboo value-chain themes targeting farmers, and MSME sector.*
- 6. Involve schools, colleges and universities on all aspects of bamboo development in plantation, R&D and innovation.*

4.6 Awareness, Communication and Knowledge Management

Awareness on the potential and possibilities of bamboo to a wider audience especially consumers, development partners, industry, and investors is critical for developing makers as well as investment in the sector.

Policy statements

The government will:

- 1. Develop Information Education and Communication materials and create awareness through video, radio, print, social and electronic media.*
- 2. Support workshops, seminars and conferences to enable knowledge exchange and awareness.*
- 3. Commemorate World Bamboo Day across the country.*
- 4. Develop centralized bamboo related knowledge management and dissemination platform.*
- 5. Establish bamboo information and product demonstration centres in green spaces countrywide*

4.7 Creating Favourable Environment for Investment in Bamboo

Public-Private Partnership (PPP) will be the main engine for propelling domestic and foreign investment in bamboo without excluding other local investment mechanisms supportive of the informal sector. A set of measures are necessary to create a favourable environment for investment at all levels and scales.

Policy statement:

The Government will:

- 1. Coordinate with Kenya Investment Authority (KenInvest) to include the bamboo sub-sector as a preferential sector, and develop attractive investment packages for domestic and international bamboo industries and investors.*
- 2. Establish a fiscal and tax incentives mechanism to support accelerated investment in bamboo value-chains.*
- 3. Coordinate with financial institutions to give loans for investment in bamboo sub-sector at subsidised interest rates.*
- 4. Coordinate with KenInvest and revenue authority to provide complete exemption of taxes for MSME locally produced products and tax exemptions for industries and investors within the existing framework.*
- 5. Involve Kenya Bureau of Standards (KEBS) to develop standards and certification mechanisms for products by Bamboo MSMEs and industries.*

5.0 INSTITUTIONAL ARRANGEMENT

Bamboo sub-sector developmental efforts in Kenya continue to be fragmented and lack strong communication channels and structures. Planning and coordinating implementation is crucial to development of a vibrant bamboo sub-sector. The roles and responsibilities of stakeholders are shown in **Annexure II**. To enable intensified commercialization of bamboo, an institutional arrangement comprising relevant Ministries and private sector representatives will be established. The institution will be coordinated through establishing a Department of Bamboo Development at the Ministry of Environment and Forestry. This Department will provide policy oversight and have a secretariat to enhance coordination among government agencies, research institutions, private sector, and entrepreneurs. This secretariat will guide review of the Bamboo Policy every 10 years. The institutional framework: governance structure, functions of national Bamboo Secretariat and county steering committee is shown in **Annexure III**.

Policy Statement:

The government will:

- 1. Establish a Department of Bamboo at the Ministry of Environment and Forestry to provide policy implementation, oversight and coordination of various actors in the Bamboo sub-sector.*
- 2. Establish a national bamboo programme steering committee with representation from national, and county governments, private sector, and other non-state actors.*
- 3. Establish an inter-agency technical committee at the National and County levels with participation of relevant line ministries, research agencies, private sector and other non-state actors.*

6.0 RESOURCE MOBILIZATION

Commercialization of bamboo will require both financial and human resources. The government will fund implementation of this policy through the National Treasury and leveraging resources from development partners, bilateral, and multilateral development agencies.

Policy statement:

The government will:

- 1. Create a bamboo commercialisation program under the Ministry of Environment and Forestry funded by the National Treasury*
- 2. Support bamboo commercialization programs at the County level with cross-sector linkages to leverage resources.*
- 3. Mobilize resources from multilateral and bilateral development agencies, and climate change loan and grant funds to invest in bamboo sector.*
- 4. Attract investment through domestic and foreign investments; including impact investment funds.*
- 5. Develop Payment for Ecosystem Services (PES) fund for Bamboo growing and CESS from county governments.*
- 6. Leverage domestic research and development funds including; National Research Fund (NRF) and National Commission for Science Technology and Innovation (NACOSTI).*

7.0 MONITORING AND EVALUATION

Regular monitoring and periodic evaluation will be undertaken at national and county levels; and as detailed in the national Bamboo policy action plan.

Policy statements:

The government will:

- 1. Support development and application of result-based monitoring and evaluation frameworks compatible with National Integrated Monitoring and Evaluation System (NIMES).*
- 2. Include Bamboo sector performance as a standing agenda at devolution consultative forums and the associated summit.*
- 3. Carry out a midterm review of the bamboo sector performance after 5 years*
- 4. Undertake an evaluation of this Policy at the 10- year period*

GLOSSARY OF TERMS

Bamboo	A group of plants species belonging to grass family <i>Poaceae</i> , subfamily <i>Bambusoideae</i> .
Bio-energy	Renewable energy in various forms that are derived from bamboo.
Clump	A cluster of bamboo poles or culms which are interconnected or belonging to a single bamboo plant.
Community	A clearly defined group, which may, but need not be, a clan or ethnic community. These groups of users hold a set of clearly defined rights and obligations.
Community Forest Association	A group of community members engaged in forest conservation and management holding signed agreement as stipulated in Forest Conservation and Management Act 2016.
Culm	Individual bamboo poles; hollow cylinder or main stem above the ground.
Forest and Landscape restoration	An active process that brings people together to identify, negotiate and implement practices that restore an agreed optimal balance of ecological, social and economic benefits of bamboo and trees within a broader pattern of land uses.
Species	A population of bamboo plants which are capable of producing offspring through sexual and asexual means and share common and specialized characteristics different from others.
Stakeholder	An individual or group having a vested interest in bamboo.
Sustainable management	Present harvesting or use of bamboo culms, which does not compromise ability to regenerate the same or degrade the carrying capacity of ecosystems and habitats.

Annexure I

Relevance of Bamboo to existing Acts / Policies / Strategies and Action Plan

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
1.	The Constitution of Kenya (2010)	<ul style="list-style-type: none"> • The Government will establish and support forestry management institutions at national, conservancy and ecosystem levels including local communities, landowners and other stakeholders. • The Constitution classifies forests into three categories namely public, community and private forests, in which bamboo can be planted • The Constitution requires the country to work towards achieving a forest cover of at least 10% of the land area to ensure sustainable resource use, growth and employment creation.
2.	The Medium Term Plan III (2018-2022)	<p>Bamboo can be used to address various flagship programmes and projects under MTP III:</p> <ul style="list-style-type: none"> • Rehabilitation and Protection of the Water Towers: The programme will continue with rehabilitation and protection of the five major water towers namely; The Aberdare Range, Mt. Kenya, Mau Forest Complex, Mt. Elgon and Cherengany Hills as well as other water towers and catchment areas in the country. • Rehabilitation of Urban Rivers: The programme will continue to rehabilitate the Nairobi Rivers and other urban rivers within counties. • Promotion and Piloting of Green Energy: The programme aims at promoting green energy options by piloting innovative options that can be commercialized in order to make Kenya a world leader in green energy. • Forest Conservation and Management: This includes; establishment of forest plantations, promotion of forest-based nature enterprises, establishment of commercial woodlots, promotion of bamboo establishment and utilization and, control of invasive species. • Forestry Research and Development: Research activities related to promotion of sustainable forest products utilization, forestry conservation and management, biodiversity and environment management, and strengthening environmental governance will be undertaken.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
3.	The Forest Conservation and Management Act (2016)	<ul style="list-style-type: none"> • Land reclamation: The sector will identify and map all degraded land in the country. The programme will also rehabilitate and reclaim 60,000 Ha in the counties prone to landslides, floods and heavy soil loss. • Classifies bamboo under “indigenous forest”, and enables maintenance and conservation (including sustainable production of wood and non-wood products” of indigenous forest within jurisdiction of local authority). • The annual financial estimates shall make provision for all estimated expenditure of the Kenya Forest Service for the financial year, and in particular shall provide for: <ul style="list-style-type: none"> ◦ Development and promotion under license of timber and Bamboo plantations and recreational tourism in public forests. • Programmes and strategy for achievement and maintenance of tree cover of at least ten per cent of the land area of Kenya. • Provides for incentives for increasing forest and tree cover.
4.	The Kenya National Forest Program (2016-2030)	<p>Bamboo can contribute towards the following commitments of the Program:</p> <ul style="list-style-type: none"> • To promote sustainable forest management. • To achieve a forest cover of at least 10% of the land area. • To enhance environmental resilience to climate change. • To creating an enabling environment for investments in forestry. • To enhance efficiency, effectiveness and skills throughout forest value chains. • To promote public-private partnerships. • To increase community participation in forest development. • To make forestry information accessible to improved awareness and decision making. • To improve forestry education and research and technical skills development. • To ensure broad-based economic empowerment in the private sector, gender, youth and special groups. • To promote alternative energy sources and efficient use.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
5.	<p>The Kenya National Forest Policy 2020 (Draft)</p>	<p>The Policy states that the Government will in:</p> <p>Indigenous Forests</p> <ul style="list-style-type: none"> ◦ Promote the rehabilitation restoration, protection and management of water catchment areas and other ecological fragile areas. ◦ Encourage and support land owners to sustainably manage natural and riverine forests. <p>Plantation Forests</p> <ul style="list-style-type: none"> ◦ Promote the establishment and management of commercial forests on public, private and community land and increase the productivity of plantation forests through scientific management. ◦ Promote private sector participation in establishment and management of plantations on public land. ◦ Facilitate the management of plantation forests on a commercial basis through appropriate forest management arrangements and incentives. ◦ Promote plantation species and genetic base diversification to improve ecological resilience and enhance product diversity. ◦ Identify and invest in species that play a crucial role in conserving biodiversity, providing habitat for wildlife, conserving soils, regulating water supplies and sequestering carbon dioxide. ◦ Identify and invest in commercially viable exotic species with proven potential to supply quality industrial wood. <p>Dryland Forests</p> <ul style="list-style-type: none"> ◦ Promote sustainable management of dryland forestry in arid and semi-arid areas ◦ Support rehabilitation of degraded dryland forests and encourage tree planting in arid and semi-arid areas. ◦ Promote the development of management plans for dryland forests with the participation of local communities and ensure implementation of the plans. ◦ Promote commercial tree growing of suitable tree species in dryland areas.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
		<ul style="list-style-type: none"> ◦ Promote sustainable production of charcoal. ◦ Create a conducive environment for the establishment of forest-based enterprises. ◦ Promote the conservation of genetic resources in dryland forests. <p>Agroforestry and Farm Forestry</p> <ul style="list-style-type: none"> ◦ Support agroforestry and farm forestry through a National Strategy and Action Plan to guide investment by government and all key stakeholders. ◦ Create awareness of and encourage private and community land owners to invest in agroforestry and farm forestry as viable land uses. ◦ Provide a coordination mechanism for development of agroforestry and farm forestry to avoid duplication and ensure sustainable utilization of available resources.. ◦ Align this Policy with agricultural policies to promote agroforestry and farm forestry for private and community owners or occupiers of agricultural land. ◦ Promote agroforestry and farm forestry through partnerships with private and community landowners to increase on-farm tree cover and to reduce pressure on reserved forests. ◦ Provide economic and non-economic incentives for investment in agroforestry and farm forestry. ◦ Promote on-farm tree species diversification and systems for certification of improved planting material. ◦ Facilitate inclusion of agroforestry and farm forestry in the agricultural crop insurance scheme. ◦ Promote development of forest-based enterprises and facilitate pre-production agreements between the farmers and the forest-based industries. ◦ Promote the processing and marketing of farm forestry products. ◦ Promote agroforestry and farm forestry development through irrigation, forest extension and technical services.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
		<p>Forest Products and Industries</p> <ul style="list-style-type: none"> ◦ Promote and support the development of diverse forest-based enterprises. <p>Forestry Education and Training</p> <ul style="list-style-type: none"> ◦ Support forestry education and training institutions in promoting forest sector development. ◦ Establish linkages between forestry education and training institutions and forestry industry to enhance practical skills of forestry graduates. ◦ Establish forestry vocational training and continuing education programmes. <p>Forestry Research and Development</p> <ul style="list-style-type: none"> ◦ Promote research in alternative species including indigenous trees to meet market requirements ◦ Promote research and training in non-wood products. ◦ Develop the capacity of research institutions to disseminate information and forest technologies. ◦ Promote investment in research and innovation in order to attain high productivity and meet national and international standards.
6.	The Kenya Climate Change Framework Policy (2016)	<p>Bamboo growing plays a role in carbon sequestration and can be used to contribute towards the development of the low carbon resilience.</p> <p>This policy states that the Government will:</p> <ul style="list-style-type: none"> • Put in place mechanisms for sustainable utilisation of natural resources to enhance climate resilience and adaptive capacity to protect the natural capital of Kenya. • Identify and implement fiscal, taxation and other policy options in priority areas with high GHG emission abatement potential that enhance sustainable development. • Mainstream low carbon growth options into the planning processes and functions of the national and county governments. • Put in place mechanisms to develop and promote clean technologies in all sectors of economic development.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
		<ul style="list-style-type: none"> • Promote the creation of green jobs by establishing an enabling policy framework for investment, and creating business friendly regulatory environments in key areas such as renewable energy, clean manufacturing and sustainable agriculture. • Identify research and technology needs; and promote strategic and systematic climate change-related research, impact and vulnerability assessments, and technology development and diffusion. • Put in place mechanisms to encourage and facilitate locally appropriate climate change technological development, including strategies to enhance and maintain human capacity, especially amongst the youth. • Enhance the capacity of the public and private sectors, civil society and research institutions to develop and utilise technological innovations. • Identify and implement incentives for the private sector and institutions of higher learning to undertake R&D and develop affordable and locally appropriate adaptation and mitigation technologies. • Enhance linkages between government, academia, private sector, civil society and global climate change innovation institutions. • Put in place mechanisms to facilitate the integration of indigenous, traditional and local knowledge into R&D and technology development. • Put in place mechanisms to enhance resource mobilisation for climate change R&D and technology development. • Collaborate with, and support, private sector and civil society in incorporating climate change knowledge into advocacy and public awareness raising programmes.
7.	The National Land Use Policy (2016)	<ul style="list-style-type: none"> • The land in Kenya can be public, community or privately owned.

Relevance of Bamboo	
S. No	Act / Policy / Strategy / Plan
8.	<p>The National Land Policy (2012)</p> <ul style="list-style-type: none"> • Kenya has clear land tenure, which enables farmers, private growers and/or industry to establish, manage and harvest Bamboo in private land with clear land and/or Bamboo tenure.
9.	<p>Agriculture (Farm Forestry) Rules, 2009</p> <p>These Rules shall apply for the purposes of:</p> <ul style="list-style-type: none"> Promoting and maintaining farm forest cover of at least 10 percent of every agricultural land holding and to preserve and sustain the environment in combating climate change and global warming. Conserving water, soil and biodiversity. Protecting riverbanks, shorelines, riparian and wetland areas. Sustainable production of wood, charcoal and non-wood products. Providing food and fodder. Carbon sequestration and other environmental services.
10.	<p>The Kenya Green Economy Strategy and Implementation Plan (2016-2030)</p> <ul style="list-style-type: none"> • The strategy considers bamboo in its Strategic Objective “Promoting green technologies in construction industry” and has set an indicator of number of houses built with sustainable materials.
11	<p>The Kenya Industrial Transformation Programme (2015)</p> <ul style="list-style-type: none"> • This programme proposes a flagship project to develop low-cost housing ecosystem, where the bamboo can be included

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
12.	The National Industrialization Policy (2012)	<ul style="list-style-type: none"> • States the importance of the high value addition. In that, the government shall pursue 4 measures to promote a better environment for the industrialization of natural resources. <ul style="list-style-type: none"> ◦ Natural and agricultural resources will no longer be exported in their primary state. ◦ Fast track establishment of Special Economic Zones (SEZs), Industrial Zones and SME Parks in line with Kenya Vision 2030. ◦ Develop appropriate incentive packages for the establishment and dispersion of industries across the counties and ◦ Promote establishment of industrial, science, and technology parks. The bamboo is placed in the “Agro-processing and value addition sub-sector, one of the 22 prioritized industrial sub-sectors
13.	The Micro and Small Enterprise Act (2012)	<ul style="list-style-type: none"> • In Part V - Development and Promotion of Micro and Small Enterprises • Clause 49 - Development of markets and provision of marketing services • The MSEA (Micro and Small Enterprise Authority) shall in partnership with the relevant Government Ministry and agencies and other stakeholders: <ul style="list-style-type: none"> ◦ Identify markets for products generated by micro and small enterprises and provide linkages between the micro and small enterprises and potential markets. ◦ Organize trade fairs and shows in order to promote products generated by micro and small enterprises; ◦ Conduct market research, survey and analysis. • Clause 50 - Technology transfer, acquisition • The MSEA shall, in order to promote technology transfer, acquisition and adaptation of new and modern technologies <ul style="list-style-type: none"> ◦ Mobilise funds and resources for the development of appropriate technology in relevant research institutions and enterprises that develop technology for the micro and small enterprises sector.

S. No	Act / Policy / Strategy / Plan	Relevance of Bamboo
		<ul style="list-style-type: none"> ◦ Encourage innovation and transfer of technology- in order to increase competitiveness of micro and small enterprises products and services. ◦ Provide incentives to encourage invention and innovation by micro and small enterprises ◦ Establish technology parks for graduating micro and small enterprises. ◦ Develop in collaboration with relevant institutions, programmes in standardization and product development for different sectors. ◦ Facilitate micro and small enterprises to access relevant equipment either through, purchasing, leasing or franchising. ◦ Develop programmes to enable micro and small enterprises comply with environmental legislation ◦ Conduct research on available technologies with a view to improving them. ◦ Import modern and appropriate technologies for use by micro and small enterprises. ◦ Develop, in collaboration with relevant institutions, programmes for improving credit access and other financial services by micro and small enterprises. <ul style="list-style-type: none"> • Clause 51 - The MSEA has established a Micro and Small Enterprises Development Fund whose purpose is to: <ul style="list-style-type: none"> ◦ Finance the promotion and development of micro and small enterprises in accordance with this Act. <ul style="list-style-type: none"> • Provide affordable and accessible credit to micro and small enterprises. • Finance capacity building of micro and small enterprises. • Finance research, development, innovation and transfer of technology.

Annexure II: Roles and Responsibility of Stakeholders

Potential stakeholders in the bamboo sub-sector include; State and its sectoral ministerial departments, County governments and local authorities, community-based organizations, civil society organizations, the private sector, and Technical, Vocational and Education Training, and financial partners. The following is a list of various roles in implementing the National Bamboo Policy.

Stakeholder	Role and Responsibility
GOVERNMENT MINISTRIES AND DEPARTMENTS	
Ministry of Environment and Forestry	<ul style="list-style-type: none"> • Responsible for implementation of the Bamboo Policy and establishment of a department for overseeing bamboo issues. • Lead the national level steering committee, • Provide regular strategic and advisory support for implementation of the policy • Coordinate the proposed Kenya’s inter-ministerial coordination committee of all agencies that are relevant to the bamboo.
Ministry of Agriculture, Livestock Fisheries and Cooperatives	<ul style="list-style-type: none"> • Promote the growing of bamboo by farmers in spaces and areas where agricultural activities cannot be undertaken • Promote application of bamboo in productive activities such as agriculture, horticulture, aquaculture, sericulture, apiculture, feed & fodder, vegetable. • Promote use of bamboo to control soil erosion on slopes of more than 30 degrees, and • Encourage bamboo farming along bank of rivers, and shores of lakes, reservoirs and ponds
Ministry of East African Community and Northern Corridor Development	<ul style="list-style-type: none"> • Promote bamboo-based tourism by the use of bamboo in constructing cottages, resorts, hotels and promoting eco-tourism sites • Promote production of bamboo souvenirs for tourists and artistic packaging material for the Tourism sector. • Promote cross-border trade of bamboo products within East African Community (EAC) • Develop and harmonise import and export codes (IEC) for Bamboo products.

Stakeholder	Role and Responsibility
Ministry of Industrialization and Enterprise Development	<ul style="list-style-type: none"> • Establish Incentive systems for bamboo-based micro and small-scale enterprises. • Promote marketing of bamboo products. • Ensure production of quality and quantity bamboo products. Government should provide viability gap funding.
Ministry of Energy	<ul style="list-style-type: none"> • Formulate attractive policies and incentives to welcome private investments for production of bamboo bio-energy products. • Support development of bamboo charcoal, briquettes and pellets. • Develop program and regulatory framework for community-based charcoal production with the aim to formalize bamboo energy sector. • Provide incentives to promote charcoal production from bamboo.
Ministry of Lands and Physical Planning	<ul style="list-style-type: none"> • Allocate land for large scale bamboo plantation establishment
Ministry of Transport, Infrastructure, Urban Development, Housing and Public Works	<ul style="list-style-type: none"> • Promote durable bamboo houses for affordable housing and other public buildings. • Promote use of bamboo in furniture industries • Encourage the use of bamboo in construction of culvert bridges and foot bridges.
Ministry of Education, Science and Technology	<ul style="list-style-type: none"> • Promote the use of bamboo for production of furniture for public entities like schools, offices, library, hospitals and dormitories. • Promote the use of bamboo based bio-energy in schools and universities. • Initiate teaching of bamboo planting and management as a part of syllabus.
Ministry of Devolution and the Arid and Semi-Arid Lands	<ul style="list-style-type: none"> • Include bamboo as a priority product to achieve the national tree planting targets. • Include bamboo development as key sector for national planning, action plan and allocate sufficient budget to implement the action plan both at national and at county levels. • Mainstream bamboo in gender and youth policies
Stakeholder	Role and Responsibility

	<ul style="list-style-type: none"> • Encourage the use of Bamboo in disaster management • Allocate sufficient funds for Women and Youth Enterprise Development Funds to promote Bamboo growing and product development.
NON-STATE ACTORS	
Non-Governmental Organizations	<ul style="list-style-type: none"> • Support community-based implementation of Bamboo policy • Encourage partnerships with government agencies to facilitate implementation of Bamboo activities
Private Sector	<ul style="list-style-type: none"> • Create off-take markets for bamboo raw material • Support financing of bamboo SMEs in bamboo sector • Support development of standards for bamboo products
Faith -Based Organizations	<ul style="list-style-type: none"> • Encourage uptake of bamboo value chains by members

Annexure III: Institutional Framework

The important role of bamboo in Kenya’s economy has been recognized by the government. Consequently, commercialization of bamboo was a key delivery target in the second Medium Term Plan (MTP II) of 2013 to 2018. However, due to lack of policy and strategic governance structure, limited progress has been made. Through this policy, the Government intends to establish a governance structure that will improve effectiveness and efficiency in sustainable management of bamboo value –chain and its commercialization in Kenya.

Drawing on lessons from the Asia region which has extensive experience with development of bamboo industries, three possible options towards streamlining bamboo value-chain in Kenya are proposed. Functions of these structures will be operationalised through defined roles and responsibilities presented in Annexure II.

Bamboo governance structure is presented as Figure 1 below:

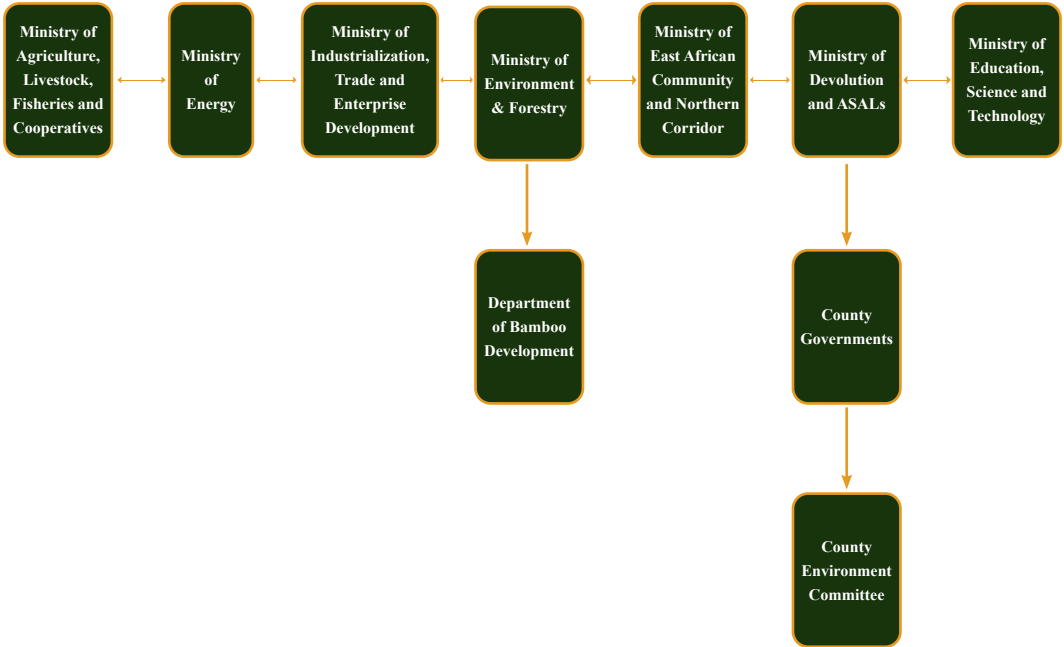


Figure 1: Bamboo Development Institutional Framework

Proposed Functions of National Bamboo Department

The Department shall provide an overarching coordination of implementation on the National Bamboo Policy and shall:

- a) Ensure the mainstreaming of Bamboo development by the National and County Governments
- b) Oversee implementation of the National Bamboo Policy and its continuous review
- c) Provide policy direction on management, extension, research, education and training on Bamboo
- d) Provide guidance on review, amendment and harmonization of sectoral laws and policies to achieve objectives of the policy
- e) Ensure provision of resources for Bamboo programs and investments

Membership of National Bamboo Department, and County Steering Committee National Bamboo Programme Steering Committee

Ministries responsible:

- Environment and Forestry
- Agriculture, Livestock, Fisheries and Cooperatives
- Public Service, Youth and Gender Affairs
- Energy
- Transport, Infrastructure, Housing, Urban Development and Public Works
- Lands and Physical Planning
- Education, Science and Technology
- Industrialization, Trade and Enterprise Development

County Steering Committee members

County Executive Committee Members In-charge of:

- Environment and Forestry
- Agriculture, Livestock, Fisheries and Cooperatives
- Public Service, Youth and Gender Affairs
- Energy
- Transport, Infrastructure, Housing, Urban Development and Public Works
- Lands and Physical Planning
- Education, Science and Technology
- Industrialization, Trade and Enterprise Development

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