



REPUBLIC OF TOGO
MINISTRY OF ENVIRONMENT
AND FOREST RESOURCES



TOGO NATIONAL BAMBOO AND RATTAN DEVELOPMENT STRATEGY AND ACTION PLAN 2025-2029



Acronyms and Abbreviations

| | |
|-----------|---|
| ANADEB | National Agency for Grassroots Development |
| B&R | Bamboo & Rattan |
| CBOs | Community-based Organisations |
| CCIT | Chamber of Commerce and Industry of Togo |
| NFSC | National Forest Seed Center |
| DEP/MERF | MERF Studies and Planning Department |
| FRD | Forest Resources Department |
| EU | European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| GDP | Gross Domestic Product |
| INBAR | International Bamboo and Rattan Organization |
| NIAT | National Institute of Agricultural Training National Institute of Statistics and Economic and Demographic Studies |
| NISEDS | |
| TIAR | Togolese Institute of Agricultural Research |
| ITTO | International Tropical Timber Organisation |
| MALRD | Ministry of Agriculture, Livestock and Rural Development |
| MoEF | Ministry of Economy and Finance |
| MEFR | Ministry of Environment and Forest Resources |
| MRV | Monitoring Vérification and Reporting |
| MVTTE | Ministry of Vocational Training and Tertiary Education |
| NGOs | Non Governmental Organisations |
| OFDE | Office of Forest Development and Exploitation |
| (SGP-GEF) | Global Environment Facility Small Grants Program |
| NBSA | National Biodiversity Strategy and Action Plan |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| UK | University of Kara |
| UL | University of Lome |
| UNCBD | United Nations Convention on Biological Diversity |
| UNCCD | United Nations Convention to Combat Desertification |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |

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FORWORD



Togo is a country with low forest cover, but high biodiversity, including bamboo and rattan (B&R) species. Bamboo appears to be an alternative solution to forest products demand, in view of its numerous products and services. Nowadays, it supplies different products around the world generating income and employment opportunities. Bamboo is also useful ecologically, for soil erosion, water recharge, conservation of biodiversity and climate resilience.

However, the bamboo industry is underdeveloped in the country as the sector still faces challenges due to the absence of a specific support strategy and action plan. The existing scarce data is very fragmented and does not allow a meaningful analysis of the bamboo and rattan resources in the country. As part of the government roadmap (FRG 2020-2025), Togo aims to plant 1 billion trees by 2030. Seizing this opportunity, and relying on technical discussions with INBAR, the MERF is committed to promoting bamboo reforestation for diverse value addition. In this logic, the development of the bamboo development strategy has become imperative.

The national development strategy is a political tool which identifies the main strategic orientations and actions to be undertaken to support the development of bamboo and rattan on the economic, social and environmental dimensions. The vision, guiding principles, strategic objectives and strategic directions are defined in order to achieving a viable and sustainable bamboo industry in Togo. The bamboo and rattan national strategy is in line with the key existing national policies and development agenda. The important ones are: Government Roadmap for the period 2020-2025, National Forestry Policy 2021, National Forestry Law 2008, National Environmental Law 2008, National Water Law National Biodiversity Strategy and Action Plan 2011, National tree planting Program Policy 2017. Besides, the strategy contributes to the planned programmes and projects for boosting the local and national economies as well as to achieve the country commitments and targets such as the "One billion trees by 2030", the UN SDG, the national land degradation neutrality targets, the NDC targets, the disaster risk reduction plan, etc. The strategy identifies key support sector policies/plans and services for the implementation of the bamboo strategy. Key sectoral policies/plans and support services for the implementation of the bamboo strategy have been identified. The different key actors are also identified and their roles clearly stipulated. The estimated costs of the actions to be undertaken have been determined.

I invite all stakeholders to take ownership of this strategy and actively participate in its implementation in order to support the development of bamboo and rattan in Togo.



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Director of Forest Resources

EXECUTIVE SUMMARY

Togo is a country with low forest cover, but high biodiversity, including bamboo and rattan (B&R) species. To various extents, B&R resources play important roles in social, economic and ecological dimensions. However, it is very difficult to know the contribution of these resources to the country GDP, the actors involved in their value chains, and therefore its real potential for sustainable development of the country. The sector's development is still facing challenges due to the lack of a specific supportive action plan. This national bamboo and rattan development strategy and action plan, is formulated for the period 2025-2029 to guide actions for the sustainable development of the sector in coherence with existing policies and national orientations in forestry sector. It will unlock the national potential of B&R resources towards a developed and well-coordinated business sector for value addition, improving livelihoods, restoring ecosystems and addressing climate concerns.

The vision of this strategy is that « ***by 2029, Togo has developed a bamboo and rattan sector through sustainable management for income generation, employment opportunities to local people, and a green and resilient development***». This will be achieved through four strategic objectives. These are (i) Enhance the management framework (institutional management capacities) of the B&R in Togo; (2) Increase the availability of B&R resources as alternatives to wood products contributing to ecosystem restoration and conservation; (iii) Improve the B&R value-chain and market development for green economy and social benefits; (iv) Develop knowledge and technologies on B&R resources.

In line with the strategic objectives, the national strategy is articulated around four key directions:

Firstly, “**strengthening the policy and institutional frameworks specific to B&R**” is a key direction to ensure the sector development. Three priority actions are deemed relevant to achieve this strategic direction:

- Priority action 1.1: Improve the management framework on B&R through the development of institutional capacities and policy instruments;
- Priority action 1.2: Develop a specific programme for B&R development;
- Priority action 1.3: Establish a solid MRV system for B&R sub-sector.

Secondly, “**promotion of B&R resource production and sustainable management**” should be of focus in regard with their limited resources countrywide. Priority during interventions should be oriented towards the following actions:

- Priority action 2.1: Improve the availability of B&R through the expansion of areas in natural lands and plantations;

- Priority action 2.2: Support B&R planting by low-income households, youth and women;
- Priority action 2.3: Encourage the sustainable management of B&R resources.

Thirdly, the strategic direction 3 is to “**Develop a sustainable bamboo and rattan based business model**” in the country. The prioritized actions include:

- Priority action 3.1: Improve the organisation, capacity building and integration between different key actors to ensure a sustainable and coordinated value chain development;
- Priority action 3.2: Encourage the diversification of the B&R based products for various purposes;
- Priority action 3.3: Promote the development of bamboo and rattan enterprises / industries and their accessibility to sustainable markets.

Fourthly, “**Support to research and innovation portfolio on BR resources**” need attention, in link with need-based capacity building, innovation and knowledge production and dissemination, and partnerships. The following actions are priority of interventions:

- Priority action 4.1: support need-based research/studies and knowledge development through enhanced collaboration with research/academic institutions;
- Priority action 4.2: Support the skills development and innovations portfolio;
- Priority action 4.3: Develop scientific and technical cooperation and partnerships.

The total budget for the implementation of the five -year action plan is about four billion three hundred ten million (4 310 000 000 FCFA) equivalent to seven million, three hundred and thirty-nine thousand, eight hundred and thirty-five (cir. 7 339 835 USD).

Multiple sources of funds are targeted to ensure a sustainable financing and implementation of the strategy by 2029. These include government budget, programmes and projects, international funding mechanisms, private sector, NGOs, funding from local communities and municipalities. The implementation of this strategy requires a coordinated engagement of several actors with different roles and responsibilities. Potential risks and constraints are identified and mitigation measures are proposed alongside. The development of an adequate monitoring and evaluation (M&E) framework is key to the successful implementation of the strategy.

1.0 Introduction

1.1 Background

For centuries, bamboo and rattan has played an important role in the daily lives of millions of people in tropical countries. It has gained importance as a substitute for wood because of its lignified culms, and its rapid growth (Akinlabi *et al.*, 2017). Indeed, bamboo is one of the fastest-growing and most versatile plant on the planet (Liese and Köhl, 2015).

In Africa, several countries (Cameroon, Ethiopia, Kenya, Tanzania, Uganda, Ghana, Madagascar) have undertaken vast research works on the sustainable use of their bamboo resources (Embaye *et al.*, 2003; Muller and Rebelo, 2010). Based on global forest resource assessment of the Food and Agriculture Organization of the United Nations (FAO) of 2020, the total cover of bamboo resources in Africa was about 4 648 000 ha, with 634 000 ha in West and Central Africa (FAO, 2020). In recent years, several African countries namely Cameroon, Ethiopia, Kenya, Uganda, Madagascar, Tanzania, and Ghana have dedicated bamboo policies and/or bamboo development strategies and action plan for propelling bamboo and rattans sector development for socio-economic and environmental development.

In Togo, there is limited research data on bamboo and rattan. The existing scarce data is very fragmented and does not allow a meaningful analysis of the bamboo and rattan resources in the country. However, it should be noted that few research has been undertaken since 2006 by Togolese researchers which has provided a broad overview of bamboo in Togo (Kokou *et al.* 2006; Kokoutsè *et al.* 2013). Although limited in number, these studies allowed to compile a list of bamboo species in Togo as well as their main uses. Five native or planted bamboo species namely: *Bambusa arundinacea*, *Bambusa multiplex*, *Bambusa vulgaris*, *Bambusa vulgaris* var. *striata* and *Oxytenanthera abyssinica* were inventoried. Additionally, about twenty introduced species, are under experimentation at the Opportunities Industrialization Centers-Togo (OIC-Togo), near Notsé.

Bamboo and rattan are primarily used as craft materials, and in some cases as medicinal or soil fertilizer (Kokoutsè *et al.* 2013). Common uses of bamboos include frames, ceiling, fences, and roofing of houses, hedges and house barriers, posts for TV antennas, construction of cabins and sheds, cages for poultry, manufacturing of chairs, benches and baskets, etc. In some cases, it is used as shards of floor tiles, firewood, windbreaks, and various craft purposes. Scattered efforts to produce and market bamboo are noted in different regions of the country. However, these efforts are not sufficiently documented and even less structured in a bamboo and rattan development strategy in Togo.

At the institutional level, it is important to mention that Togo joined INBAR in 2000. Since then, bamboo and rattan have been mentioned in certain national policy documents, notably the National Forest Action Plan (PAFN, 2014-2019), the Forest Policy of Togo (PFT), the National Reforestation Policy Program, etc. As part of the government roadmap (FRG

2020-2025), Togo aims to plant 1 billion trees by 2030. Seizing this opportunity, INBAR is in communication with the Ministry of Environment and Forest Resources on using bamboo for restoration and for diverse value addition.

1.2 Need for a national bamboo and rattan strategy

Togo is a country with low forest cover. With population increase, agricultural expansion, and fuel wood demand, the forest is highly degraded. The imbalance between forest production and demand for wood continues to increase, puts pressure on forest resources, and forcing stakeholders to resort to alternative solutions. The development of bamboo appears to be an alternative solution in view of its numerous products and services. Nowadays, it supplies different value chains around the world generating income and employment opportunities. Bamboo is also useful ecologically, for soil erosion mitigation, water recharge, conservation of biodiversity and climate resilience.

Although bamboo is a multi-purpose species for its enormous socio-economic and environmental potential, information on its resources and usages is still lacking. Moreover, few actions to promote bamboo are undertaken at country level. In addition, the absence of a specific strategy limits its ecological and socio-economic valorisation. Hence, the national development strategy is intended to be a political tool which foresees the actions to be undertaken to support the valorisation of bamboo and rattan on the economic, social and environmental dimensions.

2.0 Bamboo in Togo: situation analysis

2.1 Bamboo and rattan resources

Based on the review of available scarce information, B&R resources grows in various areas of the country.

In Togo, five species of bamboo are known to occur in natural stands: *Bambusa vulgaris var. green*, *Bambusa vulgaris var. striata*, *Oxytenanthera abyssinica*, *Bambusa multiplex*, *Bambusa arundinacea*. They occur in all ecological zones of the country, but are less observed in the Savannah Region. With regard to ecological zones and ecosystems types, these species of bamboo occur in ecological zones IV, V, II, III and I, in a decreasing gradient of occurrence of all species. The species belong to two main genus *Bambusa* and *Oxytenanthera*.

In terms of introduced species, there are about 20 species mentioned in Togo. These include *Bambusa birmanica*, *Bambusa blumeana*, *Bambusa beecheyana*, *Phyllostachys edulis*, *Bambusa oldhamii*, *Bambusa dissimulator*, *Bambusa nutans*, *Bambusa polymorpha*, *Bambusa ventricosa*, *Bambusa wamin*, *Dendrocalamus brandisii*; *Dendrocalamus latiflorus*; *Dendrocalamus membranaceus*; *Dendrocalamus strictus*; *Gigantochloa albociliata*;

Gigantochloa Spp (bali white stripe); *Gigantochloa luteostriata*; *Gigantochloa spp* (malay dwarf); *Guadua angustifolia*; and *Guadua chacoensis*.

The bamboo resources occur often as small-size stands in state owned natural forests (mostly in protected areas), state owned forest plantations, private ownership (in some plantations or natural stands, sacred forests, community forests), natural stands and often along some rivers. In terms of ownership, the bamboo resources are owned by individuals, communities, and government depending on land tenure and ownership. However, basic information on bamboo forests are missing regarding the extent (areas and distribution across the country), the knowledge on their ownership versus zone and extent, their ecological characteristics and dynamics (spatial and temporal dynamics, growing and biomass stocks, removals, etc.).

As far as the rattan resources are concerned, the lack of information is seriously acute. However, it is reported that few rattan species are available in the forest zones of the country which spans along the south part of Atakora mountain range (ecological zone IV), specifically, rattan species *Laccosperma secundiflorum* (syn. *Ancistrophyllum secundiflorum*). The use of rattan in local crafts is relatively developed, but interviews with stakeholders revealed that the raw material is imported from Ghana and Ivory Coast.

Based on the analysis above, it is relevant to point out the crucial need for improving information and data on the B&R resources in Togo through comprehensive assessment studies.

2.2 Bamboo and rattan value chain and actors

Value chain analysis is an approach that provides information on the different links from production to marketing and final uses. The documentary review as well as the interviews with stakeholders (forestry administration, craftsmen and traders) highlighted a lack of data on the structure of value chains, the relationships between key stakeholders and the quantities of products. It should be noted that bamboo is used in both crafts and construction. To date, data on supply chains, production and sale costs, and sold quantities are very rare and fragmented, making difficult a systemic analysis of the organization of the sector. Since the study by Thiam (1991) estimating bamboo production at around 700,000 culms per year, no other estimate is available to date. For example, during the interviews, it is reported that 610 poles of bamboo were recorded as quantity transported from the Kloto region to Lomé during April to June 2024, without details on the size of the poles, the regularity of the transport and the taxes.

For rattan, the resource is imported from Ghana and Ivory Coast according to an interviewed wholesaler/trader. The actors are organized into associations and make group purchases of rattan from wholesalers.

2.3 Institutions and Policy Framework

At institutional level, no specific institution is recognised to focus on bamboo and rattan in Togo. But the country has established a governance structure towards an efficient and effective management of forest resources, including bamboo and rattan. Besides, there are private institutions established to promote forest resources, specifically bamboo and rattan.

- Public institutions include the ministry of environment and forest resources, and its deconcentrated directorates at regional and district levels; the office of forests development and exploitation. Other government types institutions such as ministry of agriculture and rural development and the ministry of water resources also contribute to the effective management of forest resources.
- Private sector institutions include national NGOs involved in sustainable management of forest resources and related value-chains in Togo.
- Individual based institutions: Apart from bamboo and rattan traders, these are artisans who own and manage individual production workshops.

Regarding the policy framework, it is recognised that there are no bamboo and rattan specific frameworks currently in Togo. However, the existing policies, legal and regulatory frameworks related to forest resources in general, apply to bamboo and rattan resources in the country. These include the following

- National Forestry Policy (Politique forestière du Togo); 2021-2030: this policy aims at promoting the forest sector and conservation of forest resources;
- National Bio-diversity Strategy and Action Plan (Stratégie et Plan d'Action Nationale pour la Biodiversité SPANB) 2011 -2020.

In terms of legal framework, the relevant laws that has influence on bamboo and rattan development are as follows:

- Forestry Law (Code forestier Loi n° 2008-09 du 19 juin 2008)
- Environment Law (Loi-cadre sur l'Environnement n°2008-005 du 30 mai 2008)
- Water Law (Code de l'eau Loi n° 2010 – 004 du 14 juin 2010)
- Land Law (code foncier et domanial Loi n°2018-005 du 14 juin 2018)

Many other multilateral and international agreements contribute to strengthen the national policy frameworks: Convention on Biological Diversity - UNCBD (in 1995), UNCCD (1995), United Nations Framework Convention on Climate Change UNFCCC (1994), International Bamboo and Rattan Organization (INBAR), Aichi Targets, Nagoya Protocol (2016), Kuming-Montreal Framework, Wetlands convention; Accord international sur les bois tropicaux(AIBT)

2.4 Synthesis of SWOT analysis

The diagnostic elements analysed above are summarized as SWOT matrix below (Table 1).

Table 1. SWOT analysis

| | |
|---|---|
| <p>Strengths</p> <ul style="list-style-type: none"> - Existence of Forest office and policies - Government commitment to develop B&R sub-sector - Large number of stakeholders involved in Bamboo and rattan industry - Research institution interested to develop bamboo and rattan resources - Land available for Bamboo and rattan plantations development | <p>Weaknesses</p> <ul style="list-style-type: none"> - No specific government department / unit focusing on bamboo and rattan - No bamboo-specific frameworks and policy exist - Lack of data on B&R resources and their value chains - No organized process for technology and skills development in B&R industry - Unmanaged natural stands of bamboo - Lack of funding for bamboo and rattan sub-sector |
| <p>Opportunities</p> <ul style="list-style-type: none"> - Existence of global bamboo and rattan economy and market - Favourable international relation with countries with high expertise for B&R development - Bamboo multipurpose uses and its potential for wood substitution, carbon market and environmental services - INBAR support B&R development in its member countries | <p>Threats</p> <ul style="list-style-type: none"> - Competition for international markets - Low level of social awareness - Exploitation of wood in natural lands - Climate change threats |

2.5 Bamboo and rattan development key challenges

The bamboo & rattan sector development is facing numerous challenges similar to the forest sector development in general. In this regard, the national roadmap for strategic and sustainable development of bamboo and rattan should address the following key challenges (See table 2 below):

Table 2. Synthesis of key challenges

| Levels | Key challenges | Indicative solutions |
|------------------------------|---|---|
| Institutional/ Governance | <ul style="list-style-type: none"> - Uncoordinated interventions among institutions in charge of forest resources - No consistent and reliable statistics on B&R - Weak law enforcement regarding forest resources conservation including B&R - No specific policy or development strategy on B&R | <ul style="list-style-type: none"> Undertake assessment and establish official database on B&R Development and implement B & R policy/ strategy and action plan |

| | | |
|--------------------------------|--|--|
| Economic | <ul style="list-style-type: none"> - Poor knowledge of economic value and contribution of B&R to local and national economies - Weak value-chain development and coordination | <ul style="list-style-type: none"> Baseline studies Value chain mapping Integrated value chain development addressing bottlenecks. |
| Social | <ul style="list-style-type: none"> - Poor knowledge of stakeholders in B&R sector, including the private actors and small-scale farmers, their influence and investment potential in the value-chain development. - Social impact poorly documented (employment potential) | <ul style="list-style-type: none"> Stakeholder mapping and analysis Capacity building and support across value chain. |
| Research and data availability | <ul style="list-style-type: none"> - Few researches and valorisation - Lack of knowledge and capacity - Need comprehensive experimentation on the production and transformation of the resource - Needs of improvement of technologies and innovation | <ul style="list-style-type: none"> Improve research portfolio on B&R Undertake capacity building and skill development. Technology development and transfer |

3.0 Strategic Framework

3.1 National policy and strategy alignment

The bamboo and rattan national strategy is a roadmap directly aligned with the key existing national policies and development agenda. At higher level of country governance, this strategy is aligned with the Government Roadmap for the period 2020-2025, contributing to the economic, environmental and social directions of the country's vision by 2030. This high-level governmental portfolio mainstreams forest resources, including bamboo and rattan to some extent, into long-term strategic development of the country. Accordingly, the national strategy of bamboo and rattan development has its alignment with several existing policies and legal frameworks in Togo. This include mainly:

- The National Forestry Policy (Politique forestière du Togo); 2021-2030: this policy aims at promoting the forest sector, and conservation of forest resources;
- National Biodiversity Strategy and Action Plan (Stratégie et Plan d'Action National pour la Biodiversité SPANB) 2011 - 2020: The plan highlights the implementation of biodiversity related programs and projects to enhance sustainable use for human wellbeing and national economy, promote conservation and reverse degradation of national forests and biodiversity loss.
- The National Forestry Law (Code Forestier Loi n° 2008-09 du 19 juin 2008): sets the legal framework on forest related business in the country;

- The National Environmental Law (Loi-cadre sur l'Environnement n°2008-005 du 30 mai 2008) sets the legal and regulatory frameworks for all environmental components at the national level;
- The National Water Law (Code de l'eau Loi n° 2010 – 004 du 14 juin 2010): This code establishes the general legal framework and principles basis of integrated water resources management (IWRM) in Togo;
- The National tree planting Program (Programme National de Reboisement) 2017-2030: it aims at contributing to the extension of forest cover to 30% of the national landmass by 2050 and increasing the productivity of existing forests.

Besides, the strategy contributes to the planned programmes and projects for boosting the local and national economies as well as to achieve the country commitments and targets such as the "One billion trees by 2030", the UN SDG, the national land degradation neutrality targets, the NDC targets, the disaster risk reduction plan, etc.

3.2 Guiding principles

Five key principles guide the spirit of the national strategy on bamboo and rattan:

- Development of bamboo and rattan as alternative forest products to reduce forest degradation;
- Promotion of bamboo and rattan value-chains to increase economic and social benefits;
- Improvement of the coordination and organization of stakeholders of the bamboo and rattan value-chains;
- Enhancement of B&R based ecosystem services for green economy and climate resilience;
- Mainstreaming of gender, youth and vulnerable groups in B&R business.

3.3 Vision

The vision of this strategy is « by 2029, Togo has developed a bamboo and rattan sector through sustainable management for income generation, employment opportunities to local people, and a green and resilient development. »

3.4 Mission

The mission of this strategy is to unlock the national potential of bamboo and rattan resources towards a developed and well-coordinated business sector for value addition, improving livelihoods, restoring ecosystems and addressing climate concerns.

3.5 Strategic objectives

In order to achieve the abovementioned vision, four strategic objectives were defined:

- Enhance the management framework (institutional management capacities) of the B&R in Togo;
- Increase the availability of B&R resources as alternatives to wood products contributing to ecosystem restoration and conservation;
- Improve the B&R value-chain and market development for green economy and social benefits;
- Develop knowledge and technologies on B&R resources.

3.6 Strategic directions

According to strategic objectives, four directions were identified:

- Strengthen the policy and institutional frameworks specific to bamboo and rattan;
- Promote B&R resource production and management;
- Develop a sustainable bamboo and rattan based business model;
- Support the research and innovation portfolio on bamboo and rattan resources.

For each strategic direction, a certain number of priority actions are proposed to guide easy operationalisation and implementation of the strategy:

3.6.1 Strategic direction 1: Strengthen the policy and institutional frameworks specific to bamboo and rattan

At policy and institutional levels, the weak management framework in a context of weak institutional capacities is a key problem to sustainable B&R resource management. At the same time, there is a need to integrate of B&R into policies and legal instruments related to forestry sector, and establish of a robust MRV system specific to B&R sub-sector. In addition, the formulation of a specific programme for B&R development is perceived to contribute the B&R sector development. Therefore, three priority actions along with their relevant activities are proposed to achieve this strategic direction:

Priority action 1.1: Improve the management framework on B&R through the development of institutional capacities and policy instruments.

Well capacitated institutions with strong legal settings are the basis for sustaining the management of forest resources, especially B&R. Under this priority action, the strategy foresees the improvement of supportive framework to guide the sustainable development of B&R products in a favourable environment to all actors. It is important to specifically integrate B&R into a set of national policies and legal instruments related to forestry sector.

The institutional strengthening is critical for enabling environment and policies to promote a well-coordinated B&R sector development. For that purpose, the following activities are of a particular attention:

- (i) Enhance the governance capacities by providing adequate resources (both technical and financial) to B&R related technical institutions;
- (ii) Integrate B&R into policies and legal instruments related to forestry sector and taxes;
- (iii) Strengthen the cooperation and coordination between government, local communities and private sector by developing local and national level multi-stakeholder platform/round tables.

Priority action 1.2: Develop a specific programme for B&R development

Taking into consideration the needs of all stakeholders and mobilising relevant resources, this priority action is oriented towards the development and implementation of a specific B&R programme. This programme should adequately mainstream existing efforts to integrate the sustainable management and the increase of the productivity of natural and planted B&R forests, and the development of green economy. In that aspect, it is crucial that the B&R development focuses on the following key activities:

- (i) Formulate the B&R development specific programme;
- (ii) Raise funds for the programme implementation;
- (iii) Stimulate the engagement and involvement of stakeholders in the programme, by sensitisations, sharing and scaling-up successful initiatives;
- (iv) Provide need-oriented trainings and supports to local key actors involved in the programme

Priority action 1.3: Establish a solid MRV system for B&R sub-sector

The availability of reliable statistics on a regular basis will be critical to all actors on the status of B&R resources. All relevant resources should be mobilised to conduct B&R resource assessment for improved statistics and knowledge. It will help in orienting the strategic investments in valuing the national potential in B&R resources. A solid MRV system is therefore required to capture sufficient details on B&R resources and integrated with the national sustainable forest development goals. This effort is aimed towards the reliability of the generated information (based on quality criteria such as transparency, consistency, completeness, accuracy, etc.). Therefore, it is critical to undertake the following key activities:

- (i) Establish a dedicated B&R unit at the national level with adequate resources to implement and run the MRV system;

- (ii) Develop B&R data standards, quality criteria, frequency and data collection guidelines tailored to national and local conditions;
- (iii) Monitor and collect data on regular basis for reporting.

3.6.2 Strategic direction 2: Promote B&R resource production and sustainable management

The enhancement of resource production and management is a strategic viable pathway to improve the availability of B&R. This will lead to the expansion of areas in natural lands, the conservation of native species and the development of plantations (by government, communities and private sector). A particular attention should be given pro-poor households, youth and women by supporting them to invest in B&R planting and management of natural ecosystems. At the same time, it is crucial to mobilise different actors for doing impactful investments in bamboo and rattan production. Through technical knowledge and capacity building, these actors will be trained on nursery, bamboo propagation, cultivation/plantation and management, etc. Tools and practices for B&R resource management will be critical for promoting the use of B&R in restoration interventions in degraded lands and stabilisation of river banks and slopes. Three priority actions are essential under this strategic direction:

Priority action 2.1: Improve the availability of B&R through the expansion of areas in natural lands and plantations

The availability of B&R products depends on the production capacities of natural ecosystems and plantations. Therefore, government in coordination with local communities and authorities and private sector, should work in hands to improve the availability of the B&R resources. The key activities to achieve this priority actions are mainly:

- (i) Increase the B&R nurseries and germplasms, with a particular attention to native species;
- (ii) Establish B&R planting demonstration plots using native and introduced species;
- (iii) Promote large scale plantations of bamboo by public offices;
- (iv) Encourage private investors to invest in large scale bamboo planting and restoration;
- (v) Support restoration and conservation of B&R natural stands.

Priority action 2.2: Support B&R planting by low income households, youth and women

The development of a vital B&R sector needs the involvement and engagement of several actors. Particularly, rural communities, vulnerable and minority groups, youth and women are key operational target groups to engage in the B&R planting, maintenance and harvesting. In this regard, the promotion of B&R resource production and sustainable

management should include consideration to gender and social aspects, by undertaking the following key activities:

- (i) Form a pro-poor group (s) for targeted bamboo-based activities;
- (ii) Encourage low income households, youth and women to self-organise into cooperatives for B&R production in form of agro-forestry, shelter belts and woodlots;
- (iii) Impart trainings on bamboo nurseries, plantation establishment and maintenance;
- (iv) Facilitate the access to financial tools to support cooperatives of low income actors towards the development of B&R plantations.

Priority action 2.3: Encourage the sustainable management of B&R resources

The sustainable management of natural and planted B&R based ecosystems will contribute to guarantee the flow of ecosystem services and mitigate disaster risks. All actors should be encouraged to continuously develop actions for sustainable management of B&R resources, spanning from investments in innovative tools and approaches to capacity buildings and appropriate benefit sharing mechanisms. Tools and plans need to be tailored to context-specific considerations to encourage a participatory management at different levels. Conducting the proposed key activities is central to achieving this priority action:

- (i) Develop and implement innovative approaches and tools (e.g. Management Plan and Guidelines) for sustainable B&R resource management at national and local levels;
- (ii) Publish of manual of procedures for the sustainable management of natural stands and plantations;
- (iii) Provide technical trainings to bamboo growers on sustainable management of bamboo and rattan for different purposes;
- (iv) Enhance the role of B&R in ecological engineering for stabilisation of river banks and steep slopes, and other erosion-prone areas and other sensitive and unused areas.

3.6.3 Strategic direction 3: Develop a sustainable bamboo and rattan based business model

In this strategy, it is proposed to improve the organisation, capacity-building and integration between different key actors to ensure a sustainable and coordinated value chain development. Then, the diversification of the bamboo and rattan based products is encouraged towards alternatives to wood products for various purposes at local and national levels. At the same time, B&R small enterprises will be supported with sustainable market development at local, national and international levels. This implies the understanding of market demands and market access of local producers, processors and

business. To alleviate poverty and sustain the B&R based business, there is a need for supporting a gender-sensitive investment in B&R value chains towards green job opportunities and livelihood improvement. Three priority actions are developed below:

Priority action 3.1: Improve the organisation, capacity-building and integration between different key actors to ensure a sustainable and coordinated value chain development.

Domestic and international markets for B&R products in Togo are at a basic and immature level due to the weak organisation, weak capacities and lack of integration between different stakeholders. This priority action primarily aims at unlocking the potential of bamboo and rattan resources in value chain development and their contribution to livelihood improvement, job creation and economic development. Therefore, priorities should be oriented on the following key activities:

- (i) Develop a detailed mapping of the B&R value chains;
- (ii) Develop institutional guidelines to enhance collaboration between actors (bamboo growers, household, micro, small and medium scale enterprises, industries, research and development agencies as well as policymakers) along the value chains;
- (iii) Support the establishment of platforms to connect the Chamber of Commerce and Industry of Togo (CCIT), the research/academia; NGOs and private business, to stimulate collaboration and adequate resource mobilisation for a sustained B&R value chains;
- (iv) Facilitate development of bamboo clusters and integrated supply-chain adopting circular economy model aimed at maximizing biomass utilisation, minimizing wastage and improving profits.

Priority action 3.2: Encourage the diversification of the B&R based products for various purposes

Forest products used for various purposes (construction, furniture, artworks, energy biomass, etc.) are still dominated by wood/timber. The promotion of B&R products as alternatives to wood products will contribute to the sector development but also in reducing market demands in wood products and pressures on forest resources. Based on successful actions on sustainable management of B&R and a good understanding of the sector of B&R through a well-structured market and value chain, it is crucial to:

- (i) Promote bamboo and rattan as substitutes of wood/timber in the construction and furniture industries as well as bio-energy products in rural and urban areas;
- (ii) Encourage and support diversification of bamboo and rattan raw materials into diversified contemporary products including crafts, stick based (tooth picks, blinds), slat based (flooring), plastic substitute products and products for agriculture, horticulture and fishery sector;

- (iii) Support training and capacity building (skill and enterprise) of value chain actors;
- (iv) Disseminate innovations on B&R during commercial events, trade fairs and exhibitions locally, nationally and internationally to increase public awareness and market for B&R products.

Priority action 3.3: Promote the development of bamboo and rattan enterprises / industries and their accessibility to sustainable markets

B&R is regarded as a sector with significant contribution to economy with appropriate investments. It will attract more actors towards the unlocking of its potential in terms of green job opportunities and livelihood improvement. From the production to raw materials, transformation and marketing, investments will support farmers, youth, women, enterprises and industry. For that purpose, government need to facilitate the creation of an enabling environment to attract investments to the B&R sector. Supportive measures include the improvement of requirement for enterprise establishment, infrastructure developments, capacity building, markets linkages, stimulation for local consumption and market demand of B&R products. Commitments, especially from government and private sector, are critical to achieve this action. In this regard, the following specific interventions are proposed:

- (i) Create an enabling environment to stimulate investments in B&R sector development through taxes facilities;
- (ii) Support access to affordable credit facilities for entrepreneurs, industries and investors to create more opportunities of green jobs in B&R sector;
- (iii) Support a gender-sensitive investment in B&R value chains towards green job opportunities and livelihood improvement;
- (iv) Facilitate the access of B&R producers to local and international markets, by promoting their participation to exhibition events, e-marketing and trade agreements.

3.6.4 Strategic direction 4: Support the research and innovation portfolio on bamboo and rattan resources

Specific research portfolio is crucially needed to support understanding for bamboo and rattan resource development as well as value addition. Collaboration between research/academic institutions and end-users (decision makers, farmers, value addition enterprises and traders) will support to carry need-based research/studies on B&R. In the end, the outputs will support the development of knowledge/skills and innovations portfolio on B&R. The following priority actions are deemed to be undertaken:

Priority action 4.1: support need-based research/studies and knowledge development through enhanced collaboration with research/academic institutions

Need-based research/studies and knowledge development are fundamentals to support innovations and value addition to B&R resources. The basis is to strengthen the national research portfolio by stimulating interests, establishing networks and strongly bridging academia and policy institutions. This includes the efforts in encouraging individuals and industries to develop innovations along with the production and transformation of B&R products. This strategic action should go along with building skills and technical capacities. Proposed activities are as follow:

- (i) Map the B&R resources to produce data on diversity, distribution and biophysical properties (anatomical structure, physical, chemical mechanical, energy potential, etc.);
- (ii) Conduct collaborative research on technical itineraries of B&R species (nursery, growth conditions, planting requirements, pest and diseases controls, technical characteristics for resource exploitation, etc.);
- (iii) Produce reliable data on the environmental and socio-economic benefits from B&R to guide policy-making and regulatory settings.

Priority action 4.2: Support the skills development and innovations portfolio

The purpose of this priority action is to support the skills development and innovations portfolio as a reference point for the promotion and development of B&R products. It will induce the improvement of manufacturing practices and products towards added value creation and commercial competitiveness for both domestic and export markets. This priority action will be achieved through the following activities:

- (i) Develop B&R related topics and curricula for secondary and tertiary technical and vocational education and training programmes to build a pool of trained professionals and trainers;
- (ii) Develop training modules targeting nursery operators, bamboo growers, enterprises;
- (iii) Support the development of innovative technologies for production of diverse products and applications, while preserving cultural identity of B&R products;
- (iv) Produce publications (policy briefs, briefing papers, informative videos, scientific papers, etc.) to share case studies and best practices on B&R.

Priority action 4.3: Develop scientific and technical cooperation and partnerships

Scientific and technical cooperation and partnerships will play a critical role for capacity building in value chain interventions, and financing of sector development, knowledge share and technology transfer. Local communities and private individuals will be involved directly in the B&R development and conservation activities. Meanwhile, the private sector will play a significant role in enhancing innovations in the sector. This priority action is

considering partnerships and cooperation as relevant channel to bridge science, communities political and industrial interfaces. Key activities are the following:

- (i) Enhance cooperation and partnerships with relevant partners for knowledge sharing and technology transfer;
- (ii) Promote the participation to scientific and political events related to B&R resources;
- (iii) Organise regular study trips and cross-learnings in high B&R production countries.

3.6.5 Results framework

The chain of results expected from the implementation of the planned actions is summarized in the results matrix below (Table 3).

Table 3: Results matrix

| Priority actions and key activities (KA) | Outputs | Indicators | Target | Source of verification |
|--|---|---|--------|-------------------------------------|
| Strategic direction 1: Strengthen the policy and institutional frameworks specific to bamboo and rattan | | | | |
| <i>Result 1: Forest sector policies and institutional framework are strengthened by specific dispositions concerning bamboo and rattan</i> | | | | |
| Result 1.1. Institutional capacities and policy instruments are developed and contribute to the improvement of the B&R management | Technical institutions and governance capacities are strengthened | Number of institutions involved in capacity strengthening | 15 | Activities report |
| | B&R is integrated into policies and legal instruments related to forestry sector | Revised policies and legal instruments | 2 | Policies documents |
| | Linkage and coordination among key actors are strengthened | Number of national multi-stakeholders platforms established and operational | 1 | Activities reports |
| Result 1.2. A specific programme for Bamboo and Rattan development is implemented | National B&R development programme available | Programme developed | 1 | Programme document |
| | Lobbying for fund raising realised | Lobby meetings | 2 | Meetings reports |
| | Stakeholders involved in the programme | Number of stakeholders involved | 15 | Monitoring report |
| | Need-oriented trainings are provided to actors | Number of trainings and materials ; Number and quality of trainees | 3 5 | Manuals, training workshops reports |
| Result 1.3: A solid and functional MRV system for BR sub-sector is established | An operational B&R unit is established to run the MRV system | An operational and staffed MRV system | 1 | MRV reports |
| | B&R standards, quality criteria, frequency and data collection guidelines are established | National standards guideline | 1 | Guideline document |
| | B&R are monitored and data are collected and reported on regular basis | Updated database on B&R resources | 1 | Data base |
| Strategic direction 2: Promote B&R resources production and sustainable management | | | | |
| <i>Result 2: The areas of natural stands and bamboo plantations are increased and are under sustainable management</i> | | | | |
| Result 2.1: Natural lands | Nurseries and germplasms are | Number of nurseries and | 25 | Field visits |

| | | | | |
|--|--|--|----------------------|---|
| <i>and plantations of B&R are expanded and resources more available</i> | developed | germplasms | | |
| | B&R planting demonstration plots are established and operationalised | Number of demonstration plots | 25 | Visit of demonstration plots |
| | Large scale plantations established by public offices | Areas (ha) of B&R in plantations | 10000 | Field visit, activities reports |
| | Large scale plantations established by private investors | Areas (ha) of B&R in plantations | 5000 | |
| | Natural stands restored | Areas (ha) of B&R in Natural stands | 50000 | Field visit, activities reports |
| <i>Result 2.2: Low income households, youth and women have Bamboo's plantations</i> | Pro-poor groups are formed for targeted bamboo-based activities | Number of groups and members | 200 | Groups members list |
| | Low income households, youth and women are involved into B&R plantation activities | Number of low income households | 500 | Plantation reports |
| | | Number of youth | 200 | |
| | | Number of women involved | 300 | |
| | Trainings are imparted on bamboo products | Number of trainings Number of participants trained | 3 | Workshop reports ; list of participants |
| Low income households, youth and women are self-organised into cooperatives for BR production | Number of cooperatives | 5 | Cooperatives statues | |
| Access to financial tools is facilitated to support cooperatives of low income actors | Financial tools in use by cooperatives | 3 | Activities reports | |
| <i>Result 2.3: Sustainable management of BR tools are developed and used</i> | Innovative approaches and tools for sustainable B&R resource management are implemented | Number of tools and approaches implemented | 2 | Activities reports |
| | Manual of procedures are produced and published | Number of manuals | 3 | Activities reports; manuals |
| | Technical knowledge on bamboo propagation, nursery techniques, cultivation/plantation is provided to B&R growers | Number of B&R growers benefiting technical knowledge | 200 | Activities reports ; technical manuals |
| | B&R materials are used in ecological engineering | Number of companies using B&R materials in eco-engineering | 100 | Activities reports |
| Strategic direction 3: Develop a sustainable bamboo and rattan based business model | | | | |
| <i>Result 3. A sustainable bamboo and rattan based business model is developed</i> | | | | |
| <i>Result 3.1: Sustainable and coordinated value chain development allowing better organisation, capacity-building and integration of key actors</i> | Detailed maps on B&R value chains are available | Value chains map | 1 | mapping report |
| | Institutional guidelines are developed for effective linkage among actors | Institutional guidelines | 1 | Guideline document |
| | A legal platform connecting stakeholders exists | The established legal framework | 1 | Activities report |
| <i>Result 3.2: Encourage the diversification of the bamboo and rattan products for various purposes</i> | B&R is promoted as substitutes of wood/timber in the construction and furniture industries | Number of sensitisation | 5 | Activities reports |
| | | Number of B&R products promoted | 7 | |
| | Incentives are provided to | Number of B&R products with | | Activities |

| | | | | |
|---|---|--|--------|---|
| | support affordable B&R products for population, entrepreneurs, industries and investors | affordable prices | 5 | reports |
| | The capacities of value chain actors are strengthened | Number of trainings | 5 | Activities reports |
| | innovations on B&R are disseminated during commercial events | Number of events attended ; Number of participating innovators | 5 | Activities reports; list of innovations |
| <i>Result 3.3: Bamboo and rattan based small enterprises are strengthen and participate to sustainable markets</i> | investments in B&R sector development are stimulated | Mobilised investments due to enabled conditions | ND | Activities report |
| | Entrepreneurs, industries and investors have access to affordable credit facilities | Number of facilities established | 3 | Activities report |
| | Green job creation and livelihood improvement are supported | Number of jobs created | 500 | Activities report |
| | BR producers participated to local and international markets | Number of attended exhibition events Number of trade agreements | 5 5 | Activities report |
| Strategic direction 4: Support the research and innovation portfolio on B&R resources | | | | |
| <i>Result 4: Scientific data on B&R are produced and promoted thanks to support for research and innovation</i> | | | | |
| <i>Result 4.1: Data and knowledge on B&R resources are available and used for policies strengthen</i> | National B&R resources are mapped | Database created | 1 | Research report and papers |
| | Context-specific technical itineraries on B&R species are developed | Number of technical itineraries | 5 | Technical document |
| | Data on environmental and socio-economic benefits of B&R are available | Research reports | 3 | Research report |
| <i>Result 4.2: support the skills development and innovations portfolio</i> | Training curricula on B&R are available | Number of curricula and training programmes on B&R | 1 | Training programme |
| | Training modules are available | Number of training modules | 3 | Modules |
| | Innovative technologies and labels are developed | Number of innovations and labels created | 2 | Activities report |
| | Publications on B&R are produced and disseminated | Number of relevant publications | 15 | Research papers |
| <i>Result 4.3: Develop scientific and technical cooperation and partnerships</i> | knowledge and technologies are shared and transferred | Transferred knowledge and technologies | 5 | Activities report |
| | Togo is represented to scientific and political events on B&R | Number of attended events Number of attendants to events | 5 | Activities report |
| | Study trips and cross-learnings are effective | Number of study trips and cross-learnings | 5 | Activities report |

4.0 Implementation framework

The implementation framework of this strategy for the development of B&R resources in Togo requires a coordinated engagement of several actors with their different roles and responsibilities. Besides, a clear identification and mitigation of risks and constraints, along with a subsequent mobilization of financial resources, and the development of an adequate

monitoring and evaluation (M&E) framework, are key elements for the successful implementation of the strategy.

4.1 Key actors and responsibilities

Various actors partake in this strategy with different roles and responsibilities, and get involved at different levels (Table 3). Coordination among actors, considered as equal partners, is determinant for the successful implementation of the B&R strategy.

Table 3. Identified key actors and their roles and responsibilities

| Levels | Key actors | Roles and responsibilities |
|---|-------------------------------|---|
| State government and central institutions | MERF | <ul style="list-style-type: none"> • Overall coordination of bamboo development • Establish dedicated bamboo development unit • Harmonise bamboo strategy and action plan with existing laws, regulation, policies, directives and strategy to develop synergy in implementation. • Raise funds to support the implementation of B&R programmes |
| | MAEDR | <ul style="list-style-type: none"> • Encourage the B&R based agroforestry |
| | DRF ODEF CNSF | <ul style="list-style-type: none"> • Coordinate the establishment of bamboo plantations • Undertake national bamboo inventory • Provide support in bamboo nursery, plantation (farm communal, green corridor, shelter belts) and sustainable management • Develop management and harvesting guideline, site-specific management plan, tissue culture protocol and tissue culture unit demonstration. • Develop training package on bamboo plantation establishment, maintenance and sustainable harvesting and management. |
| | DPSSE/MERF | <ul style="list-style-type: none"> • Plan a specific programme for B&R development • Advocacy for a national funding support from the government to implement B&R programme • Ensure the monitoring and the evaluations of the actions |
| | Ministry of Energy and Mining | <ul style="list-style-type: none"> • Promote bamboo charcoal, pellets and briquettes as alternative clean energy products—a substitute to wood. |
| | Ministry of Economics and | <ul style="list-style-type: none"> • Allocate budgets for bamboo and rattan development. |

| | | |
|--|---|---|
| | Finances | |
| | Ministry of urban and construction | <ul style="list-style-type: none"> • Develop an enabling environment and market for bamboo and its engineered products in large-scale construction projects; • Technology development, demonstration and training on bamboo construction. |
| | Ministry of trade and industries | <ul style="list-style-type: none"> • Promote bamboo in international trade fairs and exhibition. • Organise national-, regional- and local-level trade fairs and exhibition. • Support operationalising government run bamboo industries in public-private partnership (PPP). • Support in creating an enabling environment, technology development and handholding support for MSMEs and industries. |
| | Ministry of Grassroots development, Youth, and Employment ANADEB | <ul style="list-style-type: none"> • Handhold establishment and strengthening of farmers, primary processors and industry cooperatives (horizontal linkages); develop vertical linkages between cooperatives. |
| | Ministry in charge of technical education and vocational training | <ul style="list-style-type: none"> • Develop course curriculum and accreditation in collaboration with technical partners: DRF, CNSF, ODEF • Support in innovation, technology promotion and transfer |
| | Ministry of Higher Education and Research | |
| | Chamber of Commerce and Industry | <ul style="list-style-type: none"> • Attract investment in the bamboo sector by prioritising and developing an attractive investment incentive package. • Promote joint ventures between domestic and foreign investors. • Coordinate development of “business models”; • Organise business-to-business (B2B) and investment meetings |
| Private sector | OIC, Individuals | <ul style="list-style-type: none"> • Create BR based enterprises • Invest in B&R value chains |
| NGOs and Associations | NGO | <ul style="list-style-type: none"> • Converge development efforts for scaling up and scaling out of interventions. |
| Municipalities, Local communities and CBOs | Nationwide communities and community based organisations | <ul style="list-style-type: none"> • Support sensitisations on B&R importance • Support efforts for scaling up and scaling out of interventions • Encourage B&R planting at local level |
| Universities | ITRA, UL, UK, | <ul style="list-style-type: none"> • Facilitate demand-driven research |

| | | |
|---------------------------|--|---|
| and research institutions | INFA, | <ul style="list-style-type: none"> • Produce capacity building and training materials • Develop innovative technologies in the manufacturing of B&R products • Research on bamboo resource, value-chain, ecosystem services and carbon |
| FTP | INBAR, FAO, UNDP, EU, ITTO, PMF FEM, World Bank; GIZ | <ul style="list-style-type: none"> • South–south cooperation and technology transfer. • Conduct action research; develop and validate different growing and value-addition enterprise models. • INBAR collaborates with DRF and donors for development of new programmes and projects. |
| Financial institutions | Local Banks and microfinance institutions | <ul style="list-style-type: none"> • Concessional loans and special financing window for growers and investors |

4.2 Resources mobilization

To ensure sustainable financing of the strategy, different sources of funds must be exploited: government budget, programmes and projects, international funding mechanisms, private sector, NGOs, funding from local communities and municipalities.

At the national level, resources must be mobilized in the State budget and in the National Forest Development Fund. Local authorities, NGOs and the private sector, through their actions in the field of the environment and climate change, will mobilize resources and carry out synergistic activities for the development of bamboo and rattan. Joint projects with research institutions must be developed to capture funding niches.

At the international level, the strategy will be able to mobilize resources through the various international mechanisms in partnership with INBAR for financing environmental protection and promoting green entrepreneurship (GEF, GCF, WB, AfDB, FAO, UNDP, GEF, FAO, EU, AFD, German cooperation, etc.). The Government will have to strengthen bilateral and multilateral cooperation mechanisms and formulate funding requests to be addressed to technical and financial partners.

4.3 Monitoring and evaluation (M&E)

A monitoring and evaluation mechanism needs to be established to guide the implementation of this strategy and resolve challenges identified in the course of implementation. The monitoring-evaluation mechanism is considered at several levels: the political level for measuring the impacts of the strategy, the strategic level for measuring strategic objectives and the operational level for measuring activity results and indicators.

The recommended mechanism will be based on:

- monitoring and evaluation tools: this mainly involves the dashboard for monitoring the implementation of the program, the annual budget and work plan, monitoring timeline, and measuring the level of achievement of results and indicators (performance monitoring);
- the operation of the system: it is based on action planning tools, monitoring of performance indicators and the collection, analysis and management of knowledge;
- mid-term and final evaluation of the implementation of the strategy and document lessons learned for future interventions.

4.4 Communication strategy

Communication aims to widely disseminate the objectives, activities and results of the strategy to the various stakeholders, in order to encourage their participation in the implementation of activities. It highlights the effects and impacts of the strategy in terms of valorizing the potential of bamboo and rattan. The main objectives of the communication are:

- ensure the mobilization of national actors (government offices, local authorities, universities and research centers, private sector, CSOs, local communities) for effective participation in the implementation of the strategy, through awareness-raising and advocacy;
- support the mobilization of financial resources from technical and financial partners and all potential financing niches;
- popularize the results and achievements of the B&R development strategy in order to involve more participant for bamboo industry development.

Operationally, communication will consist of: the development of a communications plan; the production of appropriate communication tools and supports for the various stakeholders and the use of communication channels (media, social networks, web, etc.) for the dissemination of information and the popularization of knowledge.

This communication plan will rely in its deployment on the communication services of the MERF and other ministries involved, implementation partners, public and private media and NGOs and CSOs as well as local communities organizations.

4.5 Risk assessment and mitigation

Risks that could hinder the implementation of the strategy have been identified and proposals are made in terms of mitigation measures.

Table 4. Risks assessment and mitigation measures

| Types of risks | Risks | mitigation measures |
|-------------------------|--|--|
| Natural and environment | Climate change effects Soil conditions and land degradation control | Ensure adaptive management and implementation of the strategy Adapt interventions to site-specific socio- |

| | | |
|------------------------|--|---|
| | | environmental constraints |
| Legal | Land ownership and accessibility and conflicts Weak law enforcement | Taking advantage of the ongoing projects on land reforms Ensure law enforcement with regard to existing frameworks |
| Economic and financial | Limited funding mobilisation Market development | The capitalization of financing for projects in progress or submitted for financing, the mobilization of funding partners are among other actions to mitigate financial risk. |
| Social | Low support from stakeholders and land conflicts Access to lands/ownership Intellectual properties | Raising awareness among local communities, local leaders, traditional chiefdoms and NGOs are all actions to be undertaken to strengthen social mobilization |
| Security | As Terrorist attacks/insecurity | For insecurity threats, measures are being taken to counter and stop terrorist attacks in the north of the country, and prevent its spread to the south of the country. |

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Appendices

Appendix 1. Five years action Plan

| Strategic directions, Priority actions and key activities | Annual amount (000,000 CFA) | | | | | Total Budget | Outputs | Indicators | Target | Lead Responsible | Supporting actors |
|--|--------------------------------|------|------|------|------|--------------|--|--|--------|------------------|---|
| | 2025 | 2026 | 2027 | 2028 | 2029 | | | | | | |
| Strategic direction 1: Strengthen the policy and institutional frameworks specific to bamboo and rattan | 95 | 95 | 100 | 70 | 45 | 405 | | | | | |
| <i>Priority action 1.1: Improve the management framework on B&R through the development of institutional capacities and policy instruments</i> | 25 | 25 | 15 | 5 | 5 | 75 | | | | | |
| A.1.1.1. Enhance the governance capacities by providing adequate resources (both technical and financial) to B&R related technical institutions | 10 | 10 | 10 | | | 30 | Technical institutions and governance capacities are strengthened | Number of institutions involved in capacity strengthening Number of persons trained | 15 | MERF | MAEDR Municipalities/Local governments |
| A.1.1.2. Integrate B&R into policies and legal instruments related to forestry sector and taxes | 10 | 10 | | | | 20 | B&R is integrated into policies and legal instruments related to forestry sector | Revised policies and legal instruments | 2 | MERF | Ministry of Trade Ministry of Law and Justice |
| A.1.1.3. Strengthen the cooperation and coordination between government, local communities and private sector in a participatory process the development of a national platform of multi-stakeholders | 5 | 5 | 5 | 5 | 5 | 25 | Linkage and coordination among key actors are strengthened | Number of national multi-stakeholders platforms established and operational | 1 | MERF | MAEDR ANADEB Municipalities/Local governments |
| <i>Priority action 1.2: Implement a specific programme for Bamboo and Rattan development</i> | 70 | 45 | 40 | 40 | 40 | 235 | | | | | |
| A.1.2.1. Formulate the B&R development specific programme | 25 | | | | | 25 | National B&R development programme available | Programme developed | 1 | MERF | MEF |

| | | | | | | | | | | | |
|---|------------|------------|------------|------------|------------|-------------|--|---|--------|------|---|
| A.1.2.2.Raise innovative funds for the programme implementation | 5 | 5 | | | | 10 | Lobbying for fund raising realised | Amount of funds raised | 2 | MERF | MEF, TFP, Ministry of Planning |
| A.1.2.3.Stimulate the engagement and involvement of stakeholders in the programme, by sensitisations, sharing and scaling-up successful initiatives | 20 | 20 | 20 | 20 | 20 | 100 | Stakeholders involved in the programme | Number and quality of stakeholders involved | 15 | MERF | MAEDR Municipalities/Local governments Private sector, NGO, Universities, TFP |
| A.1.2.4.Provide need-oriented trainings and supports to local key actors involved in the programme | 20 | 20 | 20 | 20 | 20 | 100 | Need-oriented trainings are provided to actors | Number of trainings and materials Number and quality of trainees | 3 5 | MERF | MAEDR Municipalities/Local governments Private sector, NGO, Universities, TFP |
| Priority action 1.3: Establish a solid MRV system for BR sub-sector | 0 | 25 | 45 | 25 | 0 | 95 | | | | | |
| A.1.3.1.Establish a dedicated B&R unit at the national level with adequate resources to implement and run the MRV system | | | 30 | | | 30 | An operational BR unit is established to run the MRV system | An operational and staffed MRV system | 1 | MERF | Universities and research institutions |
| A.1.3.2.Develop B&R standards, quality criteria, frequency and data collection guidelines tailored to national and local conditions | | | 15 | | | 15 | BR standards, quality criteria, frequency and data collection guidelines are established | National standards and guidelines | 1 | MERF | INSEED Universities and research institutions |
| A.1.3.3.Monitor and collect data on regular basis for reporting | | 25 | | 25 | | 50 | B&R are monitored and data are collected and reported on regular basis | Updated database on B&R resources | 1 | MERF | MAEDR Municipalities/Local governments Private sector, NGO, Universities, TFP |
| Strategic direction 2: Promote B&R resource production and sustainable management | 465 | 570 | 535 | 510 | 495 | 2575 | | | | | |
| Priority action 2.1: Improve the availability of BR through the expansion of areas in natural lands and | 380 | 400 | 425 | 400 | 400 | 2005 | | | | | |

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|---|-----------|------------|-----------|-----------|-----------|------------|---|--|-------------------|----------------|--|
| <i>plantations</i> | | | | | | | | | | | |
| A.2.1.1. Increase the B&R nurseries and germplasms, with a particular attention to native species | 25 | 25 | 50 | 25 | 25 | 150 | Nurseries and germplasms are developed | Number of nurseries and germplasms | 25 | CNSF | Universities and research institutions |
| A.2.1.2. Establish B&R planting demonstration plots using native and introduced species | 25 | 25 | 25 | 25 | 25 | 125 | B&R planting demonstration plots are established and operationalised | Number of demo plots | 25 | ODEF CNSF | Universities and research institutions MERF |
| A.2.1.3. Promote large scale plantations of bamboo by public offices | 200 | 200 | 200 | 200 | 200 | 1000 | Large scale plantations established by public offices | Area (ha) of B&R in plantations | 10000 | MERF | Private sector Rural communities Municipalities NGOs MAEDR |
| A.2.1.4. Encourage private investors to invest in large scale bamboo planting and restoration | 100 | 100 | 100 | 100 | 100 | 500 | Large scale plantations established by private investors | Area (ha) of B&R in plantations | 5000 | MERF | Private sector Rural communities Municipalities |
| A.2.1.5. Support restoration and conservation of BR natural stands | 30 | 50 | 50 | 50 | 50 | 230 | Natural stands restored | Areas (ha) of B&R in natural stands | 50000 | MERF | Private sector Rural communities Municipalities NGOs MAEDR |
| Priority action 2.2: Support BR planting by low income households, youth and women | 65 | 105 | 90 | 90 | 75 | 425 | | | | | |
| A.2.2.1. Form a pro-poor group for targeted bamboo-based activities | 15 | 15 | | | | 30 | Pro-poor groups are formed for targeted bamboo-based activities | Number of groups and members | 200 | MERF ANADEB | Private sector Rural communities Municipalities NGOs MAEDR |
| A.2.2.2. Encourage low income households, youth and women to self-organise into cooperatives for B&R production in form of agro-forestry, shelter belts and woodlots | 30 | 60 | 60 | 60 | 60 | 270 | Low income households, youth and women are involved into B&R plantation | Number of low income households, youth and women involved Number of trainings | 500 200 300 | MERF ANADEB | Private sector Rural communities Municipalities NGOs MAEDR |

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|--|-----------|-----------|-----------|-----------|-----------|------------|--|---|-----|------|---|
| | | | | | | | activities | Number of participants trained | | | |
| A.2.2.3. Impart trainings on bamboo nurseries, plantation establishment and maintenance | 15 | 25 | 25 | 25 | 10 | 100 | Trainings are imparted on bamboo products | | 3 | MERF | Ministry of industries Private sector |
| A.2.2.4. Facilitate the access to financial tools to support cooperatives of low income actors towards the development of B&R plantations | 5 | 5 | 5 | 5 | 5 | 25 | Access to financial tools is facilitated to support cooperatives of low income actors | Financial tools in use by cooperatives | 5 | MERF | ANADEB Private sector Banks |
| Priority action 2.3: Encourage the sustainable management of B&R resources | 20 | 65 | 20 | 20 | 20 | 145 | | | | | |
| A.2.3.1. Develop and implement innovative approaches and tools (e.g. Management Plan and Guidelines) for sustainable B&R resource management at national and local levels | | 30 | | | | 30 | Innovative approaches and tools for sustainable B&R resource management are implemented | Number of tools and approaches implemented | 2 | MERF | MAEDR NGOs Private sector Municipalities |
| A.2.3.2. Publish of manual of procedures for the sustainable management of natural stands and plantations | | 15 | | | | 15 | Manual of procedures are produced and published | Number of manuals | 3 | MERF | MAEDR Universities |
| A.2.3.3. Provide technical knowledge to bamboo growers on bamboo propagation, nursery techniques, cultivation/plantation | 10 | 10 | 10 | 10 | 10 | 50 | Technical knowledge on bamboo propagation, nursery techniques, cultivation/plantation is provided to B&R growers | Number of BR growers benefiting technical knowledge | 200 | MERF | MAEDR Universities ANADEB |

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|---|-----------|------------|------------|------------|-----------|------------|---|---|-----|------|---|
| A.2.3.4. Enhance the role of B&R in ecological engineering for stabilisation of river banks and steep slopes, and other erosion-prone areas and other sensitive and unused areas | 10 | 10 | 10 | 10 | 10 | 50 | B&R materials are used in ecological engineering | Percentage of B&R materials used in eco-engineering | 100 | MERF | MAEDR Universities Municipalities |
| Strategic direction 3: Develop a sustainable bamboo and rattan based business model | 95 | 180 | 125 | 100 | 75 | 575 | | | | | |
| <i>Priority action 3.1: Improve the organisation, capacity-building and integration between different key actors to ensure a sustainable and coordinated value chain development.</i> | 15 | 30 | 0 | 0 | 0 | 45 | | | | | |
| A 3.1.1. Develop a detailed mapping of the B&R value chains | 15 | | | | | 15 | Detailed maps on B&R value chains are available | Number of value chains mapped | 1 | MERF | MEF ANADEB CCIT |
| A 3.1.2. develop institutional guidelines to enhance collaboration between actors (bamboo growers, craft makers, business entrepreneurs and policymakers) along the value chains | | 15 | | | | 15 | institutional guidelines are developed for effective linkage among actors | Institutional guidelines | 1 | MERF | MEF ANADEB CCIT |
| A 3.1.3. establish a legal platform to connect the Chamber of Commerce and Industry of Togo (CCIT), the research/academia; NGOs and private business, to stimulate collaboration and adequate resource mobilisation for a sustained BR value chains | | 15 | | | | 15 | A legal platform connecting stakeholders exists | The established legal framework | 1 | MERF | MEF ANADEB CCIT |
| A 3.1.4. Facilitate development of bamboo clusters and integrated supply-chain adopting circular economy model aimed at maximizing biomass utilisation, minimizing wastage and improving profits | | 25 | 50 | 25 | | 100 | Bamboo clusters are developed and adopt circular economy model | Number of clusters | 3 | MERF | MEF ANADEB CCIT |
| <i>Priority action 3.2: Encourage the diversification of the bamboo and rattan products for various purposes</i> | 40 | 75 | 75 | 50 | 30 | 270 | | | | | |

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| A 3.2.1. Promote B&R as substitutes of wood/timber in the construction and furniture industries as well as bio-energy products in rural and urban areas | 10 | 10 | 10 | 10 | 10 | 50 | B&R is promoted as substitutes of wood/timber in the construction and furniture industries | Number of sensitisation Number of BR products promoted | 5 7 | MERF | Ministry of Housing and Land reform |
| A 3.2.2. Encourage and support diversification of B&R raw materials into diversified contemporary products including crafts, stick based (tooth picks, blinds), slat based (flooring), plastic substitute products and products for agriculture, horticulture and fishery sector | 25 | 50 | 50 | 25 | 15 | 165 | Incentives are provided to support affordable B&R products for population, entrepreneurs, industries and investors | Number of BR products with affordable prices | 5 | MERF | Ministry of Trade CCIT TFP Private sector NGOs |
| A 3.2.3. Support training and capacity building (skill and enterprise) of value chain actors | | 10 | 10 | 10 | | 30 | The capacities of value chain actors are strengthened | Number of trainings | 5 | MERF | Ministry of Trade CCIT TFP Private sector NGOs |
| A 3.2.4. Disseminate innovations on B&R during commercial events such as "foire de l'artisanat" and "mois de la consommation locale" to increase public awareness on BR products. | 5 | 5 | 5 | 5 | 5 | 25 | innovations on B&R are disseminated during commercial events | Number of events attended Number of participating innovators | 5 15 | MERF | Ministry of Trade CCIT TFP Private sector NGOs |
| Priority action 3.3: Promote the development of bamboo and rattan small enterprises and their connection to sustainable markets | 40 | 75 | 50 | 50 | 45 | 260 | | | | | |
| A 3.3.1. Create an enabling environment to stimulate investments in B&R sector development through taxes facilities and actor -based platforms | | 15 | | | | 15 | investments in BR sector development are stimulated | Mobilised investments due to enabled conditions | ND | MERF | CCIT |

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|--|------------|------------|------------|------------|------------|------------|---|--|--------|--|--|
| A 3.3.2. Support access to affordable credit facilities for entrepreneurs, industries and investors to create more opportunities of green jobs in BR sector | 5 | 15 | 5 | 5 | | 30 | Entrepreneurs, industries and investors have access to affordable credit facilities | Amount of credits accessed Green jobs created in BR sector | 3 | MERF | CCIT M of Trade Financial institutions |
| A 3.3.3. Support a gender-sensitive investment in B&R value chains towards green job opportunities and livelihood improvement | 15 | 25 | 25 | 25 | 25 | 115 | Green job creation and livelihood improvement are supported | Number of jobs created | 500 | MERF | CCIT M of Trade Financial institutions |
| A 3.3.4. Facilitate the access of B&R producers to local and international markets, by promoting their participation to exhibition events, e-marketing and trade agreements | 20 | 20 | 20 | 20 | 20 | 100 | B&R producers participated to local and international markets | Number of attended exhibition events Number of trade agreements | 5 5 | MERF | CCIT M of Trade Financial institutions |
| Strategic direction 4: Support the research and innovation portfolio on B&R resources | 150 | 175 | 140 | 125 | 165 | 755 | | | | | |
| <i>Priority action 4.1: support need-based research/studies and knowledge development through enhanced collaboration with research/academic institutions</i> | <i>45</i> | <i>80</i> | <i>55</i> | <i>50</i> | <i>80</i> | <i>310</i> | | | | | |
| A 4.1.1. Map the B&R resources to produce data on diversity, distribution and biophysical properties (anatomical structure, physical, chemical mechanical, energy potential, etc.) | 45 | 30 | 30 | 25 | 25 | 155 | National B&R resources are mapped | Database created Research outputs | 1 | Universities and research institutions | MERF MAEDR |

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|--|-----------|-----------|-----------|-----------|-----------|------------|--|--|----|--|---|
| A 4.1.2. Conduct collaborative research on technical itineraries of BR species (nursery, growth conditions, planting requirements, pest and diseases controls, technical characteristics for resource exploitation, etc.) | | 25 | 25 | 25 | 25 | 100 | Context-specific technical itineraries on B&R species are developed | Number of technical itineraries | 5 | ODEF CNSF | Universities and research institutions DRF |
| A 4.1.3. Produce reliable data on the environmental and socio-economic benefits from B&R to guide policy-making and regulatory settings | | 25 | | | 30 | 55 | Data on environmental and socio-economic benefits of B&R are available | Research outputs | 3 | Universities and research institutions | MERF MAEDR ANADEB |
| Priority action 4.2: support the skills development and innovations portfolio | 75 | 75 | 55 | 55 | 55 | 315 | | | | | |
| A 4.2.1. Develop B&R related topics and curricula for secondary and tertiary technical and vocational education and training programmes to build a pool of trained professionals and trainers | 10 | 10 | | | | 20 | Training curricula on B&R are available | Number of curricula and training programmes on B&R | 1 | Mo Education Universities | MVTTE M of Higher Education |
| A 4.2.2. Develop training modules targeting bamboo growers, nursery operators, micro-enterprises | 10 | 10 | | | | 20 | Training modules are available | Number of training modules | 3 | MO Education MVTTE Universities | MERF Private sector TFP |
| A 4.2.3. Support the development of innovative technologies for production of diverse products and applications, while preserving cultural identity of B&R products | 50 | 50 | 50 | 50 | 50 | 250 | Innovative technologies and labels are developed | Number of innovations Number of labels created | 2 | CCIT Universities | MO Education MVTTE M of Higher Education |
| A 4.2.4. Produce publications (policy briefs, briefing papers, informative videos, scientific papers, etc.) to share case studies and best practices on B&R | 5 | 5 | 5 | 5 | 5 | 25 | Publications on B&R are produced and disseminated | Number of relevant publications | 15 | Universities and research institutions MERF | MAEDR ANADEB Municipalities/Local governments |
| Priority action 4.3: Develop scientific and technical cooperation and partnerships | 30 | 20 | 30 | 20 | 30 | 130 | | | 5 | | |

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|--|------------|-------------|------------|------------|------------|-------------|---|--|---|--|---|
| A 4.3.1. Enhance the cooperation and partnerships with relevant partners for knowledge share and technology transfer | 10 | 10 | 10 | 10 | 10 | 50 | knowledge and technologies are shared and transferred | Transferred technologies | 5 | Universities and research institutions | Ministry of foreign affairs ; Ministry of technology MERF |
| A 4.3.2. Promote the participation to scientific and political events related to BR resources | 10 | 10 | 10 | 10 | 10 | 50 | Togo is represented to scientific and political events on B&R | Number of attended events Number of attendants to events | 5 | MERF Universities and research institutions | MAEDR ANADEB Municipalities/Local governments |
| A 4.3.3. Organise regular study trips and cross-learnings in high B&R production countries | 10 | | 10 | | 10 | 30 | Study trips and cross-learnings are effective | Number of study trips and cross-learnings Number of attendees | 5 | MERF | MAEDR ANADEB Municipalities/Local governments Universities and research institutions |
| TOTALS | 805 | 1020 | 900 | 805 | 780 | 4310 | | | | | |

Total budget (in FCFA): 4 310 000 000

Total budget (in USD): 7 339 835

Average annual budget (in FCFA): 862 000 000

Average annual budget (in USD): 1 467 967

Approximate exchange rate: 1 USD = 587,21 FCFA XOF

