MINISTRY OF WATER AND ENVIRONMENT

THE REPUBLIC OF UGANDA

THE UGANDA NATIONAL AGROFORESTRY STRATEGY

2025/26 - 2034/35

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Foreword

In Uganda, traditional agroforestry technologies involving the leaving of big trees in home gardens and crop fields; have been used from the beginning of settled agriculture. Agroforestry research and development activities on the other hand started in 1988 by the International Center for Research in Agroforestry (ICRAF) in collaboration with several key stakeholders. Over the years, a lot of capacity has been built through training institutions such as Makerere University, Busitema University, Muni University, Nyabyeya Forestry College, and Bukalasa Agricultural College and the National Agricultural Research Organization (NARO). Additionally, agroforestry has been integrated into government policy and planning frameworks such as the 2001 Forestry Policy where it is recognized as farm forestry, the National Forest Plan – 2001, and the National Development Plans II and III.

Agroforestry has been implemented and supported through interventions financed by the government, NGOs, and the private sector. Through these interventions, we have learned several lessons such as: agroforestry can provide multiple benefits to the land owner on the same unit of land; it can minimize land degradation and maximize agricultural productivity; loss of tree cover on private land can be addressed through agroforestry. We have also learned that effective coordination among stakeholders implementing agroforestry has been limited. Sometimes, agroforestry has been implemented as a means to achieve objectives for other interventions but not the main target. These lessons prompted the need for the development of a National Agroforestry Strategy.

The development of the national agroforestry strategy involved wide stakeholder consultations, a review of relevant literature, and benchmarking related agroforestry strategies from other countries especially, the East African region. The stakeholders consulted included relevant government ministries and agencies, academic and research institutions, NGOs, and farmers' associations.

The strategy is structured in sections that include; a background section covering aspects of agriculture and forestry and how these relate to agroforestry; a hierarchy of objectives and strategic activities, a set of principles and implementation approaches; an institutional coordination structure, and a monitoring and evaluation framework to measure progress in implementation.

It is therefore my considered opinion that the implementation of this strategy will contribute to improved coordination among players, harmonize agroforestry interventions for similar locations, improve land productivity and ecosystem services as well as livelihoods of the people.

Hon. Beatrice Atim Anywar
MINISTER OF STATE FOR ENVIRONMENT

Acknowledgement

The Uganda National Agroforestry Strategy is a result of a consultative process involving various stakeholders. The process involved both physical and virtual interviews of key informants and the presentation of the draft strategy to the steering and technical working committees. It is with the support and contribution of many partners that this strategy document for agroforestry development in Uganda was developed. I would like to acknowledge the technical and financial support and effort made by those key stakeholders who should appropriately share the success of the preparation and finalization of this strategy.

On behalf of the Ministry of Water and Environment, I express our gratitude for the assistance provided by The Uganda Apiculture Development Organisation (TUNADO), VI Agroforestry, ICRAF, Woord en Daad, and the Uganda National Farmers Federation, (UNFFE) for the financial and excellent technical support. We would also like to extend our sincere appreciation to the experts involved, for taking such an important initiative and commitment for its realization. MWE also appreciates Senior Experts from MAAIF and the Research and Academia including Makerere University, School of Forestry Environmental and Geographical Sciences, Nyabyeya Forestry College, National Forestry Resources Research Institute, Muni University for their active participation during the first strategy development workshop and for providing valuable information.

Finally, my deep gratitude goes to the Ministry of Water and Environment staff, specifically the Forestry Sector Support Department Team for the guidance and persistent follow-up and efforts in the conceptualization, development, and finalization of this strategy. We also acknowledge the consultants George Kaija and Deziderius Irumba and the agroforestry review task force for facilitating the consultations and finalizing the National Agroforestry Strategy.

I'm grateful to all the stakeholders who were involved in the development of this strategy and for sharing the vision contained within. I request to exert your efforts in supporting the implementation of the proposed strategy and translating it into reality

Dr. Alfred Okot Okidi
PERMANENT SECRETARY

Executive summary

Agroforestry refers to a group of land use techniques that intentionally combine agricultural crops and/or animals with woody perennials (trees, shrubs, palms, and bamboo) in some kind of temporal or spatial arrangement. It is intended to enhance productivity, profitability, diversity, and ecosystem sustainability. Agroforestry, therefore contributes greatly to the success of agricultural productivity, conservation of forests, and Uganda's economy. In the Financial Year (FY) 2022/23, agriculture accounted for about 24% of the country's Gross Domestic Product (GDP) and 35% of its export earnings. The Uganda Bureau of Statistics (UBOS) further estimates that about 68% of Uganda's working population is employed in agriculture.

Land degradation which stands at 41% of Uganda's overall land area is a major environmental issue with negative consequences affecting the livelihoods of rural people, decreasing available water, agricultural productivity, and food security. In the forestry sector; deforestation, a key driver to land degradation is occurring at a rate of 50,147 hectares annually, contributing emissions equivalent to 8,253,982 tons of CO_2, according to Uganda's 2017 Forest Reference Level submission. Forest cover has thus reduced from 24% in the 1990s to 12% in 2017. Agroforestry has the potential to address these challenges and redeem the forest and agriculture sectors. Some of the most applicable agroforestry systems include Agrisilviculture, Agrisilvopastoral; Silvopastoral; Aquaforestry, and Entomoforestry alongside side other emerging concepts such as; Agroecology, Nature-based Solutions (NbS);

Deforestation, a key driver to land degradation is occurring at a rate of 50,147 hectares annually, contributing emissions equivalent to 8,253,982 tons of CO_2, according to Uganda's 2017 Forest Reference Level submission. Forest cover has thus reduced from 24% in the 1990s to 12% in 2017.

Farmer Managed Natural Regeneration (FMNR); and Climate Smart Agriculture (CSA).

In Uganda, Agroforestry Research and Development activities started in 1988 by the International Center for Research in Agroforestry (ICRAF) in collaboration with other stakeholders. Currently, agroforestry research is being carried out by the National Agricultural Research Organisation (NARO), the National Forestry Resources Research Institute (NaFORRI), Zonal Agricultural Research Development Institutes, and universities. Furthermore, in recognition of the important role of agroforestry, the government of Uganda has provided a conducive environment for it through policy formulation and planning processes. Policy statement No.6 of the 2001 forestry policy provides for the promotion of tree growing in all farming systems, and the development of mechanisms for the delivery of forestry extension and advisory services.

As part of capacity building, training institutions such as Makerere University, Busitema University, Muni University, Nyabyeya Forestry College, and Bukalasa Agricultural College have made significant contributions towards institutionalization and training of the much-needed human resource for agroforestry development in Uganda. These provide extension services at district agriculture and forestry departments

Despite the various interventions, challenges are hindering the effective and efficient implementation of agroforestry in Uganda. These include; limited funding for agroforestry interventions; limited coordination of agroforestry among the line ministries and the district extension services; limited awareness among the communities and related stakeholders on agroforestry systems and their benefits; limited research and learning on agroforestry practices and innovations; and limited value addition and market for agroforestry products. It's against this background that the Ministry of Water and Environment (MWE) in partnership with the Ministry of Agriculture Animal Industry and Fisheries (MAAIF), and other stakeholders developed the Uganda National Agroforestry Strategy (UNAFS) 2025/26 to 2034/35.

The strategy is envisaged to provide a systematic and "SMART" approach for scaling the adoption of agroforestry in Uganda through a hierarchy of objectives including a vision, goal, mission, and strategic objectives as summarized below:

Vision

Agroforestry practices contributing to enhanced community livelihoods, ecosystem sustainability, and climate resilience in Uganda.

Goal

Trees integrated in all farming systems in Uganda for improved agricultural productivity; ecosystem services; and climate change adaptation and mitigation.

Mission

To strengthen and promote coordinated development of agroforestry in Uganda.

Strategic Objectives:

a) To strengthen the coordination mechanisms for the adoption and implementation of agroforestry in Uganda.
b) To enhance the promotion, adoption, and scaling up of agroforestry approaches and technologies in Uganda.
c) To strengthen the capacity of key stakeholders involved in the implementation and scaling-up of agroforestry in Uganda.
d) To enhance research, knowledge transfer, and learning on agroforestry in Uganda.
e) To strengthen agroforestry value chains for the improvement of community livelihoods, biodiversity conservation, and optimization of ecosystem services delivery.

The strategy provides an institutional structure for effective coordination and implementation of the strategic agroforestry interventions. It also proposes implementation approaches such as collaboration and partnerships, gender and social inclusion, capacity building, awareness creation, research, extension services, and value addition.

Lastly, the strategy includes an elaborate monitoring and evaluation framework to guide the measurement of the progress of its implementation. The monitoring and evaluation framework also guides on the periodic review of the strategy and to adapt it to respond to situations as they arise during the 10-year implementation period.

List of Acronyms

AF:	Agroforestry
AFOLU:	Agriculture Forestry Land Use
AFRENA:	Agroforestry Research Network for Africa
ANAFE:	African Network for Agriculture, Agroforestry and Natural Resources Education
CBO:	Community-Based Organization
CSOs	Civil Society Organisations
DACUM:	Developing a Curriculum
DANIDA:	Danish International Development Agency
DFID:	The UK Department for International Development
DFS:	District Forestry Services
DPs:	Development Partners
DSIP:	Development Strategy and Investment Plan
EU:	European Union
FIP:	Forest Investment Plan
FSSD:	Forestry Sector Support Department
FY:	Financial Year
GALS	Gender Action Learning Systems
GESI	Gender Equality and Social Inclusion
GHG:	Green House Gas
GoU:	Government of Uganda
M&E:	Monitoring and Evaluation
MAAIF:	Ministry of Agriculture Animal Industry and Fisheries
MLHUD:	Ministry of Lands Housing and Urban Development
MTEF:	Mid-Term Expenditure Framework
MSc:	Master of Science
MWE:	Ministry of Water and Environment
NAADS:	National Agricultural Advisory Services
NaFORRI:	National Forestry Resources Research Institute

NAMAs: National Adaptation and Mitigation Actions
NAP: National Agriculture Policy
NARO: National Agricultural Research Organization
NARI: National Agricultural Research Institutes
NDP: National Development Plan
NEMA: National Environment Management Authority
NFA: National Forestry Authority
NGOs: Non-Governmental Organizations
PFO: Principal Forest Officer
PhD: Doctor of Philosophy
REDD+: Reducing Emissions from Deforestation and Forest Degradation
ROAM: Restoration Opportunities Assessment Methodology
SDG: Sustainable Development Goal
SLM: Sustainable Land Management
UNAFS: Uganda National Agroforestry Strategy
USAID: United States Agency for International Development
UWA: Uganda Wildlife Authority
ZARDI: Zonal Agricultural Research and Development Institute
TUNADO: The Uganda National Apiculture Development Organisation

1.0 Background

1.1 Introduction

1.1.1 Agroforestry and how it relates to Agriculture and forestry

Agroforestry refers to a group of land use techniques that intentionally combine agricultural crops and/or animals with woody perennials (trees, shrubs, palms, and bamboo) that are either maintained in the land unit or planted in some kind of temporal or spatial arrangement (Degar and Tewari 2016; Sinclair 1999). It is intended to enhance productivity, profitability, diversity, and ecosystem sustainability. Broadly, agroforestry is the practice and science of the interface and interactions between agriculture and forestry, involving farmers, livestock, trees, and forests at multiple scales. A central pillar in agroforestry is farming with trees to obtain profitable ecological and economic interactions that improve livelihoods and the environment.

1.1.2 Uganda's Agricultural Sector and the role of agroforestry

The Agricultural sector plays a central role in Uganda's economy. In the Financial Year (FY) 2022/23, agriculture accounted for about 24% of the country's Gross Domestic Product (GDP) and 35% of its export earnings. The Uganda Bureau of Statistics (UBOS) further estimates that about 68% of Uganda's working population is employed in agriculture (ITA, 2023). In the same financial year, GDP growth of 5.3% was recorded, up from 4.7% the previous year, spurred by agriculture, industry, and the service sectors (WB, 2023). According to the UN's Food and Agriculture Organization, Uganda's fertile agricultural land has the potential to feed 200 million people (FAO, 2023), sustain agriculture's historical reputation as the primary driver of economic growth (NAP, 2013), and contribute to the countries aspiration of Agenda 2030 (SDG2, and 9), end hunger, achieve food security, improve nutrition and promote

> ***In the Financial Year (FY) 2022/23, agriculture accounted for about 24% of the country's Gross Domestic Product (GDP) and 35% of its export earnings.***

sustainable agriculture as well as inclusive and sustainable industrialization and foster innovation (NDP III, 2020).

Despite agriculture being the mainstay of the economy, the sector's performance in recent years in terms of production, productivity, food, and nutrition security has been uneven (NAP, 2013). Growth in the sector is low and productivity is still below its potential. For the sector to have a sustained positive impact on economic growth, poverty reduction, and food security, the growth rate of the agricultural sector must be higher than the national population growth. In addition, the sector is characterized by low yields, primarily rainfed, and founded on small-scale subsistence farming, which puts a strain on farmers' sustainability and food security while also leaving the sector highly vulnerable to weather variability, climate hazards (especially droughts), and climate change (CIAT, 2017). This is exacerbated by land degradation challenges that have both agricultural and ecological implications (Cooper, 2018).

1.1.3 Land degradation

Globally, demands for food, feed, and fuel continue to rise at unprecedented rates, while the agricultural land base needed for production is shrinking in many parts of the world (FAO, 2017; Gibbs and Salmon, 2015). To satisfy global food demand, agricultural systems have resorted to high-external input, and resource-intensive agricultural systems which have caused massive deforestation, water scarcity, biodiversity loss, soil depletion, and high levels of greenhouse gas emissions (FAO, 2018). On top of degradation, increasing population pressure is accelerating land-use change, which does not consider ecosystem integrity; resulting in a loss of

> *Like in other parts of the world, land degradation is a major environmental issue affecting the Eastern African region, including Uganda, with negative consequences affecting the livelihoods of rural people, decreasing available water, agricultural productivity, and food security.*

agricultural productivity and biodiversity (Harte, 2001; Slingenberg et al., 2009). Consequently, the productivity of the world's land continues to decline as the human population and demand for food and goods grow exponentially, particularly in Africa (FAO, 2017; Harvey et al., 2014). Like in other parts of the world, land degradation is a major environmental issue affecting the Eastern African region, including Uganda, with negative consequences affecting the livelihoods of rural people, decreasing available water, agricultural productivity, and food security (Kirui and Mirzabaev, 2014; Gullison et al., 2007; Santilli et al., 2005). Currently, approximately 41% of Uganda's overall land area is degraded, with soil erosion being the most common cause (Cooper, 2018).

1.1.4 Deforestation and forest degradation

Deforestation and desertification adversely affect agricultural productivity, the health of humans as well as livestock, and economic activities such as eco-tourism (IPCC, 2007; Phelps et al., 2012). In Uganda, deforestation is occurring at a rate of 50,147 hectares annually, contributing emissions equivalent to 8,253,982 tons of CO_2, according to Uganda's 2017 Forest Reference Level submission, with most of the deforestation is happening on private land (FAO, 2020). Forest cover has reduced from 24% in the 1990s to 12% in 2017 (MWE, 2017). The key drivers of deforestation and forest degradation in Uganda are a) Expansion of commercial and subsistence agriculture into forest lands and bushlands; b) unsustainable harvesting of tree products (charcoal, firewood, and timber); c) expanding urban and rural human settlements, and impacts of refugees; d) free-grazing livestock; e) wildfires; f) artisanal mining operations; and g) oil exploration activities (MWE, 2017).

1.2 The role of agroforestry

To address the above threats, the government, scientists, and non-governmental organizations have sought to find ways to increase products and services from a shrinking agricultural landscape and meet increased national, regional, and global demands. In this regard, agroforestry systems that combine the production of food, fodder, fiber, and wood with ecological functions on the same field, have emerged and offered new ways for farmers to respond to the need for more food and fiber, renewable sources of energy as well as helping in adaptation to and mitigation against impacts of climate change (Djanibekov *et al.*, 2015; Dosskey et al., 2012).

The Restoration Opportunities Assessment Methodology (ROAM) undertaken in 2015 classified Uganda into 8 landscapes including Western mid-altitude farmlands, Lake Victoria Crescent, Karamoja, South Kyoga floodplains, Afro-montane high

altitude, North Moist farmlands, and Southwest rangelands, and identified a total of 8,079,622.1ha of land with opportunities for forest landscape restoration. It further identified afforestation, reforestation, agroforestry, and natural regeneration as the most preferred restoration options. Amongst these, ROAM identified agroforestry as the option with a higher likelihood of creating benefits that far outweigh the costs compared to other options (MWE and IUCN, 2016).

With this backdrop, several benefits can accrue from the practice of agroforestry to the end users in the country. These are environmental, social, and economic benefits.

The reduction of pressure on natural forests enhances environmental benefits such as; more efficient recycling of nutrients by deep-rooted trees; better protection of ecological systems; reduction of surface run-off, nutrient leaching, and soil erosion through the impeding effect of tree roots and stems on these processes; improvement of microclimate, such as lowering of soil surface temperature and reduction of the evaporation of soil moisture through a combination of mulching and shading; and enhancing increment in soil nutrients through addition and decomposition of litterfall and improvement of soil structure through the constant addition of organic matter from decomposed litter. The tree components also play key roles such as being host to edible insects, habitat for pollinators, carbon capture, increased soil carbon, refugia for biodiversity, and better regulation of water, including groundwater recharge. They have also been used as land boundary markers and to confer land use rights even where full ownership of land is not.

The economic benefits are; a) sustenance of non-wood product value chains that include increment in outputs of food, livestock fodder, fruits, nuts, gums, resins, medicinal plants, fertilizer, honey, oils, flavors, latex; b) Timber and biomass fuels (charcoal and fuelwood) value chains; and c) reduction in incidence of total crop failure, which is common to single cropping or monoculture systems; and enhanced levels of farm income due to improved and sustained productivity. More importantly, in marginal and/or degraded lands, agroforestry constitutes an alternative to land abandonment, sometimes through deliberate afforestation, and leads to diversification of land use, offering new income possibilities.

The social benefits include improvement in rural living standards from sustained employment and higher income; improvement in nutrition and health due to increased quality and diversity of food outputs; and stabilization and improvement of communities through the elimination of the need to shift sites of farm activities.

1.2 Concepts/Classifications of Agroforestry Systems

Agroforestry systems are classified according to their function or the land use type (Nair 1985). Below are the most common agroforestry classification systems

Agrisilviculture: This system has two further subdivisions i.e., simultaneous and sequential systems. In simultaneous systems, trees and crops grow (scattered, on the boundary or along contour bands) on the same piece of land at the same time. E.g. the banana coffee system in central Uganda or the shea tree-millet system in northern Uganda. In sequential agrisilviculture, trees and crop components occupy the same piece of land at different times. In this system trees and crops may exist on the same land at the same time but with the ultimate objective of trees taking over as they mature e.g. under the taungya system.

Agrisilvopastoral: The system is characterized by integrating components such as vegetable home gardens with livestock, food and cash crops, and fodder trees/ shrubs on farmlands. Functions played by the agrosilvopastoral system include the provision of food, fuelwood, fodder, finance, soil fertility improvement, erosion control, wind control, climate moderation, and many more (Azembouh et al. 2021).

Silvopastoral: The system is characterized by two agroforestry practices which are trees on pastureland and planted fodder trees/shrubs. The main components of this system are trees/shrubs as well as fodder trees/shrubs integrated into grazing systems to supplement animal feed.

Aquaforestry: This is the rearing of aquatic animals in association with trees. Litterfall from trees grown close to fish ponds can enhance the nutrients in the pond.

Entomoforestry: The deliberate interventions to manipulate trees for the sake of insects, especially multipurpose insects, and their integration with other land-use management schemes (Senthilkumar, and Jeniffer, 2023). The two most common entomoforestry forms are apiculture (bees for honey production) and sericulture (silkworms for silk production). However, insects can be reared for reasons like pollination, decomposition, nutrient cycling, food for humans and wildlife (Entomophagy), biological control (predators for crop protection), ecological monitoring as indicators of ecosystem health, and aesthetics among others.

1.2.1 Emerging Concepts Related to Agroforestry

a) **Agroecology:** FAO defines Agroecology as an "integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans, and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system" (FAO, 2018).

b) **Nature-based Solutions (NbS):** are actions to address societal challenges through the protection, sustainable management, and restoration of ecosystems, benefiting both biodiversity and human well-being (IUCN, 2020).

c) **Farmer Managed Natural Regeneration (FMNR):** Farmer Managed Natural Regeneration (FMNR) is both a technical practice and community development approach used to support local communities in restoring their natural environment through the systematic pruning and management of remnant vegetation in agricultural, pastoral, and communal land. The practice involves thinning and protecting the shoots from felled tree stumps, or wild saplings to rapidly foster their growth into mature trees (FAO, 2021).

d) **Climate Smart Agriculture (CSA):** Agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes greenhouse gas emissions (mitigation), and enhances the achievement of national food security and development goals.

1.3 History and coverage of agroforestry in Uganda

Agroforestry as an association of trees with, agricultural crops, and/or animals in a farming system is an ancient practice throughout the world, probably dating back to 7000 B.C. (FAO 1998). In Uganda, traditional agroforestry technologies involving the leaving of big trees in home gardens and crop fields; have been used from the beginning of settled agriculture (UG.Rept.wp5.sao). However, Agroforestry Research and Development activities in Uganda started in 1988 by the International Center for Research in Agroforestry (ICRAF) in collaboration with several key stakeholders, among them, the National Agricultural Research Organisation (NARO), particularly the National Forestry Resources Research Institute (NaFORRI). Others were Makerere University, the Forestry Department, NGOs, and development partners including USAID, EU, DFID, and DANIDA. The research on agroforestry interventions focused on food security, poverty alleviation,

and environmental sustainability. Initial agroforestry activities were implemented in southwestern Uganda by the Agroforestry Research Networks for Africa (AFRENA). Activities were later scaled up to cover the lakeshore region in central Uganda, the southern rangelands (Ntungamo, Isingiro, and Mbarara), the eastern lowlands and highlands (Mbale, Iganga, Tororo, Kumi, and Sironko), and the highland areas of Bundibugyo.

In 1993 agroforestry training was introduced at Nyabyeya Forestry College to provide technical personnel for promoting agroforestry. The content of agroforestry in the curricula increased gradually, from topics in 1993 to full modules in Diploma Forestry and Certificate Forestry Courses 1996 and 1998 agroforestry, respectively. In 2000 agroforestry became a separate two-year diploma course. The Certificate in Beekeeping Course that was introduced in 2000 also included 60 hours of agroforestry module. Agroforestry today is taught in agricultural colleges and various public and private universities producing the required human resource capacity to promote the adoption of agroforestry.

"The Certificate in Beekeeping Course that was introduced in 2000 also included 60 hours of agroforestry module."

In recognition of the important role of agroforestry, the government of Uganda moved to provide a conducive environment for it through policy formulation and planning processes. In 2001, forestry policy was reviewed to include policy statement No.6 (on farm forestry). Policy Statement 6 on farm forestry states*: that* tree growing on farms will be promoted in all farming systems, and mechanisms for the delivery of forestry extension and advisory services will be developed (MWE, 2001). In the same year priority Area 4.6 (Agroforestry*)* was included in the *National Forest Plan – 2001* to facilitate implementation of Agriculture (MWE, 2001). In NDP II and NDP III, Agroforestry features as one of the approaches to sustainable land management and climate-smart technologies for increasing agricultural productivity and environmental sustainability.

In 2021, MWE and other stakeholders started the process of developing an agroforestry strategy. The strategy is expected to harmonize agroforestry

approaches in the forestry and agriculture sectors and further enhance its promotion in a more coordinated manner. The strategy will define clear linkages between agroforestry and climate change, biodiversity conservation, agroecology, and other related concepts.

Uganda is currently concentrating its agroforestry research and development efforts on finding new agroforestry science as well as scaling up adoption strategies. Through interventions of government, development partners, NGOs and the private sector; agroforestry now covers various parts of the country at different scales.

1.4 Situation analysis for adoption and scaling up agroforestry in Uganda

Agroforestry adoption and scaling in Uganda is characterized by several aspects under different themes and this section analyses the current situation regarding the thematic areas described below.

1.4.1 Agroforestry Research

To effectively promote agroforestry, the government of Uganda has emphasized the need for research to develop suitable agroforestry technologies and practices in the various ecological zones to enhance uptake and scaling up. Currently, agroforestry research is conducted by the National Agricultural Research Organisation (NARO) through its nine Zonal Agricultural Research and Development Institutes (ZARDIs) and the Agroforestry Research program based at the National Forestry Research Institute (NaFORRI); universities, colleges, and NGOs.

The existence of research institutions, universities, and colleges provides an opportunity for streamlined and responsive national research and development capacity for agroforestry in Uganda. This is however constrained by limited financial resources resulting in inadequate research and technology generation. The uptake and promotion of researched and recommended agroforestry technologies are limited by poor linkages between agroforestry research and development institutions and socio-cultural constraints such as land and tree tenure, gender, perceptions, and attitudes. These constraints consequently, affect the progress of agroforestry research interventions.

1.4.2 Capacity development for agroforestry in Uganda

Training institutions, especially universities and colleges have made significant

adjustments towards institutionalization and generating capacity for agroforestry development in Uganda. Some of the universities and colleges conducting agroforestry training include Makerere University, Busitema University, Muni University, Nyabyeya Forestry College, and Bukalasa Agricultural College.

At Makerere University, agroforestry is taught as a module to undergraduate students offering forestry, agriculture, and environmental management. There are also postgraduate courses (MSc and PhD Agroforestry) in the College of Agricultural and Environmental Sciences. In addition, a short course on agroforestry (in-service) has been developed by the Department of Extension and Innovation Studies. At Busitema University (Arapai Campus) and Bukalasa Agricultural College, agroforestry is integrated into agriculture modules.

At Muni University, 3 running academic programmes have agroforestry components including; BSc Environment and Natural Resources, BSc Agriculture, and BSc Education (Agriculture Option). In addition, the university has established collaborations and partnerships with CSO partners. These include; a) the Joint project with ICRAF on Trees on Farm for Biodiversity focusing on incentivizing and motivating farmers to integrate trees on farms; b) Collaboration with CSO partners including Danish Church Aid, Tree Talk Plus, World Vision, Welthungerhilfe, CARITAS and Abi ZARDI in different thematic areas including Natural Resources Management (NRM), agroforestry research, agroecology; capacity building on agroforestry and Farmer Managed Natural Regeneration.

*The West Nile region hosts **60% of the 1.5 million refugees** in Uganda with **impacts associated with tree cover loss.***

Muni University also co-developed a manual on Agroforestry and developed agroforestry training guides for NGOs in West Wile. It is a key resource for providing technical support for scaling up agroforestry in the West Nile region because the region is faced with an influx of refugees from DRC and South Sudan. The West Nile region hosts 60% of the 1.5 million refugees in Uganda with impacts associated with tree cover loss.

In Nyabyeya Forestry College, a two-year diploma course in agroforestry has been running since 2000 with a total of 536 Diploma agroforestry graduates

(76.1% male and 23.9% female) by 2019. Agroforestry is also taught as a module to students offering other courses such as Diploma and Certificate in Forestry, Diploma and Certificate in Beekeeping, and Diploma in Biomass Energy Technology.

At lower education levels (primary and secondary schools); attempts have been made to mainstream agroforestry in the various curricula as topics. Agroforestry has also been integrated into Primary Teachers' Colleges under the Environmental Education component. Some school environmental and agricultural clubs have integrated agroforestry into their activities. With this, agroforestry skills and knowledge are imparted at an early age to the school-going population.

Additionally, Civil Society organizations are playing a crucial role in building the required capacity for the promotion of agroforestry. ICRAF and ANAFE supported tertiary institutions in agroforestry, curriculum development, staff training, and development of training materials; and also provided research grants, fellowships, and inter-institutional collaboration for graduate training in agroforestry. VI Agroforestry and other NGOs through the employment of agroforestry university and college graduates are building hands-on capacity in emerging agroforestry technologies and cascading the same to farmers.

The training institutions and civil society organizations provide an opportunity for producing the needed human resources for the promotion of agroforestry and building in-service capacity in the uptake and promotion of the newly researched agroforestry technologies. However, due to limited resources and institutional structural challenges, the trained human resources from universities and colleges never get employed in institutions at the forefront of promoting agroforestry. Some practitioners that interface with agroforestry in their day-to-day work, have capacity limitations in terms of keeping up with emerging agroforestry-related issues and trends such as ago-ecology, farmer-managed regeneration, climate-smart agriculture, nature-based solutions, and conservation agriculture.

1.4.3 Agroforestry extension, adoption and development

Agroforestry interventions in Uganda are supported and implemented by state and non-state actors at different scales. These include the Ministry of Water and Environment; Ministry of Agriculture Animal Industry and Fisheries; Academic and Research institutions; District Local Governments; NGOs and private sector institutions.

In the forestry sub-sector, forest/agroforestry extension is a mandate for the district forest services which is part of the district local governments. However, this

mandate has not been fulfilled effectively due to understaffing, limited financial resources, and other logistical constraints. In most districts, forest extension services particularly those related to agroforestry do not trickle to the lower local government levels and there are no clear efforts to tap into other extension services such as that of agriculture to ensure that agroforestry is effectively and efficiently taken up and rolled out. Consequently, agroforestry promotion activities such as awareness creation, demonstrations, and farmer outreaches are not implemented to the expected scale. Other efforts of forest extension services are reflected in the Collaborative Forest Management (CFM) arrangements regarding promoting interventions within the forest adjacent communities that increase forest resource base, reduce pressure on forest reserves as well as contribute to improving the community livelihoods.

Under the Ministry of Agriculture Animal Industry and Fisheries, agroforestry extension services are implied in the agriculture extension services. MAAIF has an elaborate structure for agriculture extension services starting at the national level to the district and sub-county level which is stipulated in the MAAIF Extension Guidelines and Standards 2016. The delivery of agricultural extension services is a decentralized function of the District Production Department and a mandate of the sub-county frontline extension staff. The directorate coordinates with state and non-state actors in extension service delivery such as NARO NARIs and ZARDI's, NAADS, CSOs, private sector, and MDAs such as MWE and NEMA. Through NaFORRI and the ZARDIs, agroforestry technologies and other crop and animal-based technologies are developed and extended to farmers through demonstrations.

The elaborate agriculture extension service structure comprising state and non-state actors is an opportunity for agroforestry extension and development. However, the effective delivery of extension services is constrained by limited finances, especially at the local government level. As such awareness and transfer of information on appropriate agroforestry technologies is limited. Additionally, there is weak intra-government and other stakeholder coordination. This has constrained information sharing and learning opportunities which is reflected in the lack of a uniform landscape approach to agroforestry interventions in the different ecological zones.

1.4.4 Agroforestry financing

The Ministry of Water and Environment has played a crucial role in agroforestry financing through development projects. Some of the development projects

include the Farm Income Enhancement and Forestry Conservation (FIEFOC I&II) Project; Skills Development and Economic Empowerment of Women and Youth in ADB-WSSP Towns and Inter-District Large Gravity Flow Scheme areas project. Under the Sawlog Production Grant Scheme, government, the EU, and FAO financed a community tree plant program on private land. Government through the NFA and district local governments provides funds to raise and distribute 1 million trees annually to communities. Despite the various projects that have been initiated, key to note is that there is no clear budget vote for agroforestry interventions in the MWE annual budget. At the district level, there has been no conditional grant to the District Forestry Services (DFS) since the reform of the forestry sector in the late 1990s. The grant was only availed starting the FY 2020/21.

The Ministry of Agriculture Animal Industry and Fisheries receives funding for agroforestry through the Directorate of Agriculture Extension Services and the component agencies such as UCDA, NAADs, NARO NARIs, and ZARDI's and associated government programmes. For example, in a bid to revamp coffee growing and increase production, government-funded the Uganda Coffee Development Authority to identify and promote suitable tree species to integrate in coffee plantations as nurse trees for different ecological zones. Through Operation Wealth Creation, the government provided funds to procure and distribute coffee and agroforestry tree seedlings to coffee farmers in the various parts of the country. Under the Plan for Modernization of Agriculture, Forestry Extension was to be funded and undertaken through the NAADS Program but this met many challenges due to the enterprise selection approach that did not favour forestry-related interventions leading to a breakdown in forestry extension services. Through NARO NARIs and ZARDIs government has invested in the promotion of agroforestry through research on agroforestry technologies.

Additionally, to address environmental degradation issues in the refugee camps, settlement areas, and IDPs; the Office of the Prime Minister together with development partners is financing and promoting suitable agroforestry interventions.

As part of government policy support on farm forestry, private sector institutions, and NGOs such as Vi Agroforestry, CARE International in Uganda, ICRAF, ECO-TRUST, and Tree Talk Foundation have played a significant role in the funding and implementation of agroforestry in different parts of Uganda. For example, private tea companies have invested in agroforestry interventions in their tea production systems.

The various government and non-state actors (development partners and NGOs) projects and programmes present financing opportunities for agroforestry. However, this may not be sustainable because of the short lifespan of some development projects. Generally, long-term financing for agroforestry and advisory/extension services is inadequate. At the local government level, there are budget limitations under the forestry department making it difficult to recruit adequate staff and finance agroforestry interventions.

1.4.5 Gender in agroforestry

The right of women to participate and access land resources in Uganda is enshrined in the policy and legal frameworks governing land ownership in Uganda. While these laws prohibit discrimination against land ownership based on gender; societal rules, norms, and perceptions, including those pertaining to gender, do not favour women in decision-making and access to land and forest resources (Acidri; 2014; FAO, 2024). Women in Uganda, who make up 50.47% of the population, own less than 20% of the land (Acidri; 2014). Compared to men, women have less access to and control over forest resources and fewer economic opportunities are available to them (FAO, 2024). While agroforestry has the potential to offer substantial benefits to women; their participation is low in enterprises that are considered men's domain, such as timber, and high in enterprises that have little or no commercial value, such as the collection of indigenous fruits and vegetables. Furthermore, the degree of women's involvement relative to men in technologies such as soil fertility management, fodder production, and woodlots is fairly high in terms of the proportion of female-headed households participating but is low as measured by the area they allocate to these activities and the number of trees they plant (Kiptot & Franzel, 2011). Women and youth can participate effectively in agroforestry only if the cultural, social, and gender norms governing land ownership are addressed.

1.4.6 Agroforestry and biodiversity

As human activities expand and intensify, natural habitats are degraded and destroyed, and as a result, Uganda's natural resource base is being depleted. This involves a critical loss of biodiversity. Biodiversity loss will adversely threaten the future of agriculture, forests and water, soil health, and other ecosystem services. Agriculture has been identified worldwide as one of the greatest threats to biodiversity. As farmland expands, crops become undiversified and uniform, and the habitat for plants and animals is destroyed. Some of the species lost during this process are of direct importance to farming, including pollinators and natural enemies of pests. Also of critical importance is the vast number of wild species that are lost when farms take over previously natural habitats. These include mammals,

birds, reptiles, amphibians, arthropods, and a vast array of poorly understood soil organisms. Fortunately, ensuring that agricultural landscapes retain some areas of the natural habitat can mitigate this trend. Maintaining trees on farms is extremely important in retaining natural habitat and its biodiversity. Also, farms that retain trees can become parts of vitally important corridors that allow species to move among areas of natural habitat such as forests and forest fragments.

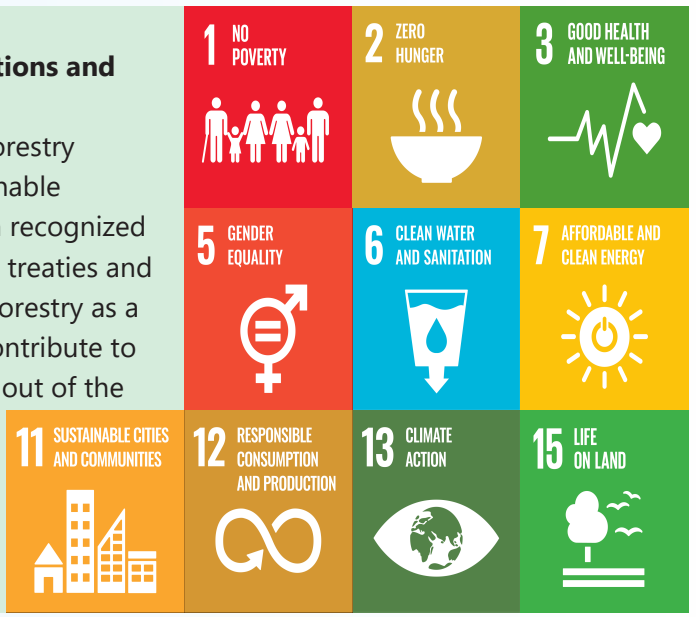
1.5 Policy, legal and institutional framework for agroforestry in Uganda

1.5.1 Policy and legal framework

Several policy and legal frameworks at international and national levels recognize and provide for the need to promote agroforestry to realize the various policy objectives. The development and subsequent implementation of the Uganda National Agroforestry Agroforestry strategy will contribute to the realization of the objectives of the existing international and national policy and legal frameworks as highlighted below

International conventions and resolutions

The potential of agroforestry to contribute to sustainable development has been recognized in several international treaties and policy meetings. Agroforestry as a land use system can contribute to achieving at least nine out of the 17 sustainable development goals (SDG) that is SDG 1, 2, 3, 5,6,7,12,13, and 15.



The UNFCCC and the Intergovernmental Panel on Climate Change (IPCC) increasingly acknowledge agroforestry as a component of climate-smart agriculture. During the 2011 Conference of the Parties (COP) 17 meeting in Durban, agroforestry was frequently mentioned as having a strong potential for climate change adaptation and mitigation including National Adaptation Plans of Action (NAPAs).

Nationally Appropriate Mitigation Actions (NAMAs) talk of agroforestry as an important component in agricultural sector actions. In addition, the United Nations Convention to Combat Desertification (UNCCD) acknowledges agroforestry's potential to control desertification and rehabilitation of degraded areas.

The Convention on Biological Diversity (CBD) recognizes agroforestry as an important practice in the ecosystem approach that contributes to its Global Strategy for Plant Conservation. Uganda signed and ratified the United Nations Convention on Biodiversity (CBD) and is very active in supporting the convention globally and prepared to implement the convention nationally including reporting on Trees on Farm Targets through NEMA. Uganda's 6th National Report to the CBD (July 2019) specifically recognizes the value of trees on farms for biodiversity conservation. Trees on farms also help Uganda to meet other international commitments including atmospheric carbon sequestration and mitigating climate change under the Paris Agreement, forest and land restoration under the Bonn Challenge, and food and nutritional security and livelihoods under the Sustainable Development Goals.

The Bonn Challenge recognizes the extensive nature of degradation and deforestation of landscapes across the globe. It sets a global goal to restore 150 million hectares of degraded and deforested landscapes by 2020 and 350 million hectares by 2030. Under the Bonn Challenge, Uganda is committed to restoring 2.5 million hectares of degraded landscapes. Of this total, 2,000,000 hectares are aimed at restoration of degraded private natural forests, national parks/game reserves, CFRs, and LFRs, while the remaining 0.5 million hectares are designated for restoration within farmlands. The Uganda National Agroforestry Strategy is a key tool to meet this commitment.

Trees on Farms Targets

Working in collaboration with ICRAF under a German Government-funded International Climate Initiative project "Trees on Farms for Biodiversity", Uganda has already made steps towards developing national trees on farms targets. This also involved research to develop ways of measuring biodiversity on farms. Based on the ICRAF and national partners' work in Uganda the following trees on farms targets are to be delivered for Uganda.

a) At the Global level, NEMA to Include Trees on Farms Targets in Uganda's subsequent Reports to the Convention on Biodiversity. *Policy basis*: Bonn

Challenge, Paris Agreement, Convention on Biodiversity.

b) At the National level, MWE to Increase tree cover across all agricultural landscapes in Uganda to at least 10% to contribute towards improving livelihoods, climate change mitigation, landscape restoration, improving food and nutrition security, protecting ecosystem services, reducing threats to biodiversity, and meeting people's needs through the sustainable use of biodiversity. *Policy basis*: Uganda Vision 2040, National Development Plan 3, Forests and Agricultural Sectoral Policies, Uganda National Biodiversity Strategy and Action Plan.

c) At the Sub-national level, MWE, District and Sub-county Local Governments, Cultural and Religious Institutions to Develop specific trees on farm targets for all agricultural landscapes in Uganda. *Policy Basis*: Uganda National Agroforestry Strategy.

National policies, legal frameworks, strategies, and plans

Nationally, several policy and legislative frameworks, strategies, plans, and visions support and influence the implementation of agroforestry initiatives in Uganda spreading across the forestry and agriculture sectors.

Some of the policy and legal frameworks are described below;

a) National Development Plan (NDP) III: Two of the 18 programmes under NDP III are explicit on enabling agroforestry as an intervention i.e. Programme 15 on Agro-industrialization and Programme 16 on Natural Resources, Environment, Climate Change, Land and Water Management. Operationalizing the agricultural extension system under programme 15 provides an opportunity to scale up agroforestry in the landscapes. Programme 16 provides for the strengthening of conservation, restoration of forests, wetlands, water catchments, and hilly and mountainous areas as well as promotes rural and urban plantation development and tree planting including the local and indigenous species.

b) Vision 2040: Chapter 5 of Vision 2040 addresses elements of social transformation and includes section 5.8 on Environment and Natural Resources. Paragraph 295 highlights the need to restore degraded lands through tree planting on private land. Paragraph 300 highlights the role of civil society organizations in environmental management and Paragraph 301 highlights women's roles in environmental management and that agroforestry interventions require the participation of women at all decision levels.

c) **Uganda Forestry Policy, 2001;** Policy Statement 6: states that tree-growing on farms will be promoted in all farming systems, and innovative mechanisms for the delivery of forestry extension and advisory services will be developed.

d) **National Forestry and Tree Planting Act, 2003:** Part II, sections 21-27 provides for the sustainable management of private forests, and Part VII, provides for the administration of local governments in the management of private forests.

e) **The National Forestry Plan, 2011/12-2021/22**: Programme 2 focuses on "promotion and intensification of tree growing on farm.

f) **National Forestry and Tree Planting Regulations, 2016**: Part VI on private forests and describes their management in regulation 71. Part VIII on Tree planting, describes tree growing and management in regulation 79 to 84. The Uganda National Agroforestry Strategy guides how tree growing on farm can be enhanced to realize the provisions in the NFTP Regulations.

g) **National REDD+ Strategy**; Strategic option 1. *Climate-smart agriculture* and Strategic option 7, on Livestock rearing in the Cattle Corridor. The strategic options generally aim at reducing the need for agricultural expansion to forest areas by intensifying agricultural production and livestock management through Sustainable Land Management (SLM) and agroforestry.

h) **Forest Investment Program for Uganda (FIP) 2017;** Environmental Co-benefits accruing from FIP investment should promote agroforestry beyond supporting REDD+ but also provide Income diversification opportunities to enhance livelihoods

i) **National Agriculture Policy (NAP) for Uganda, 2013;** *Objective 2* focuses on increasing income for farming households from crops, livestock, and fisheries; Strategy XIII of Objective 2 supports boosting agricultural production, enhancing value addition, and reducing the effects of climatic shocks and Strategy IV of objective 5 promotes dissemination of appropriate technologies (including Sustainable Land Management (SLM) and Conservation agriculture) among all categories of farmers. The Uganda National Agrorestry strategy is one of the most effective tools to ensure the realization of the National Agriculture Policy through defining strategic agroforestry interventions and technologies to guide policy implementers.

j) **National Agricultural Extension Strategy for Uganda (2015-2025);** Objectives 1 and 3 emphasize the establishment of an agricultural extension

delivery system and a mechanism for technology information packaging and disseminating. Specific objective 1.1 provides for the establishment of an effective organizational and institutional framework for pluralistic agricultural extension services.

k) **Uganda Green Growth Strategy (UGGDS, 2017).** The strategy encourages Increasing tree cover on agricultural landscapes through the promotion of agroforestry, and targets about 26,0000 ha of agroforestry by 2030 by the Government of Uganda.

l) **Parish Development Model** (PDM)- Has a vision of transforming subsistence households into the money economy. Fruit trees and coffee are among the priority commodities earmarked, with NARO ZARDIs tasked to promote these through agroforestry technologies and value addition.

m) Other policies, acts, programmes, and frameworks include; The Rangeland Management and Pastoralism Policy, 2013; Uganda Climate Smart Agriculture Country Program, 2015-2025; NAADS Act, 2001, Climate Policy and Act, Biodiversity policy and NAADs Implementation framework and the global biodiversity framework.

1.5.2 Institutional framework for agroforestry in Uganda

In practice, agroforestry belongs to none of the line ministries. In principle, the Ministry of Water and Environment coordinates tree growing through the Forestry Sector Support Department (FSSD). Coordination of agriculture on the other hand is a function of the Ministry of Agriculture Animal Industry and Fisheries (MAAIF). The multi-sectoral nature of agroforestry demands multi-sectoral collaboration rather than working in silos. Agroforestry is well articulated in Uganda's national priorities, predominantly under MWE and some elements are in MAAIF under Sustainable Land Management (SLM). It is therefore prudent to establish a coordination mechanism for agroforestry within MWE but with strong linkages with MAAIF.

Research in forestry together with agroforestry is a mandate of the National Forestry Resources Research Institute (NaFORRI) which is one of the institutes under the National Agriculture Research Organization (NARO) that principally is under the Ministry of Agriculture Animal Industry and Fisheries (MAAIF). Forestry Extension Services are decentralized to the local governments under the District Forestry Services (DFS) which has challenges related to capacity and financial aspects.

2.0 Rationale for the Uganda National Agroforestry Strategy

Agroforestry is one of the approaches used by the government of Uganda to increase forest cover in the country, used as a sustainable land management practice to increase agricultural production and productivity, contribute to income generation as well as contribute to climate change mitigation and adaptation measures. Agroforestry picked momentum in Uganda from the late 1990s to the early 2000s through the development of policies, acts, strategies, and plans that support its rollout and implementation of several government and stakeholder interventions. Such include the current growing interest in trees on farms demonstrated by the government of Uganda-funded project on farm income enhancement through forest conservation projects (MWE, 2019), the Sawlog Production Grant Scheme, the Farm Income Enhancement through Forest Conservation Project, the National Agricultural Advisory Services (and its related Operation Wealth Creation initiative) and interventions by private sector and Civil Society Organisations such as VI Agroforestry and ECOTRUST that has worked with thousands of farmers, purchasing carbon credits accumulated out of growing trees on farm.

Despite the various interventions, there are still challenges that are hindering the effective and efficient implementation and scaleup of agroforestry in Uganda. These include; limited funding for agroforestry interventions; poor coordination of agroforestry interventions among the line ministries such as MWE and MAAIF and the district extension services; limited awareness among the communities and related stakeholders of agroforestry systems and their benefits; limited research and learning on agroforestry practices and innovations; and limited value addition and market for agroforestry products. It's against this background that the Ministry of Water and Environment in collaboration with MAAIF, development partners, CSO's, and other stakeholders have developed a 10-year Uganda National Agroforestry Strategy (UNAFS) 2024/25 to 2033/34.

To achieve the goal of scaling up agroforestry in Uganda in a coordinated, well-financed manner with ongoing learning, information sharing, and integration into government plans and strategies, whilst harnessing existing enabling policy for its widespread application, the strategy is intended to offer a systematic and "SMART" approach. It proposes to make ownership easier, identify critical partners, and propose ways to leverage support to secure sufficient funding for the widespread adoption of agroforestry projects in Uganda.

3.0 Guiding Principles

Below are the guiding principles to consider while implementing the Uganda National Agroforestry Strategy;

a. In enabling the principle of inclusiveness, agroforestry should consider not only farm-scale systems, but also include agroforestry as part of the broader landscape to contribute to natural resources, forestry, and agricultural policy objectives. Therefore, Collaboration and harmonization with stakeholders is fundamental, while gender and youth participation will be emphasised. Furthermore, Participatory and evidence-based planning and implementation is vital.

b. Agroforestry systems are area and climate-specific – it is necessary to apply locally relevant and appropriate agroforestry systems, that consider the biophysical and socio-economic context (including land tenure) on a case-by-case basis and support both urban and rural agroforestry systems.

c. Agroforestry should contribute to food, fodder, fiber, and energy domains.

d. Agroforestry means different things to different people – an inclusive approach that recognizes traditional systems and indigenous knowledge as a basis for building locally sustainable systems is used.

e. Beyond national interest, issues with the service role of agroforestry also extend to the international domain in combating climate change.

f. Indigenous species that can be applied in agroforestry systems should be identified, developed, and promoted.

g. The strategy should apply the SMART principles (simple, measurable, achievable, realistic, and time-bound), it should be implementable, realistic, and have a horizon of 10 years.

h. Market-oriented and Value chain agroforestry development approach should be followed.

4.0 Strategic Direction for Agroforestry in Uganda

4.1 Vision, mission, and goal

This strategy puts forward a vision, mission, overall goal, and strategic objectives for agroforestry in Uganda as detailed below.

Vision – Agroforestry practices contributing to enhanced community livelihoods, ecosystem sustainability, and climate resilience in Uganda.

Goal – Trees integrated in all farming systems in Uganda for improved agricultural productivity; ecosystem services; and climate change adaptation and mitigation.

Mission – To strengthen and promote coordinated development of agroforestry in Uganda.

4.2 Strategic objectives and activities

STRATEGIC OBJECTIVE 1: To strengthen the coordination mechanisms for the implementation and adoption of agroforestry in Uganda

Strategic activities

a) Establish and operationalize a national coordination unit for agroforestry.
b) Form and facilitate a multi-stakeholder agroforestry working group.
c) Conduct strategic coordination meetings between MWE, MAAIF, and other stakeholders.
d) Organise participatory review meetings for the agroforestry strategy.
e) Prepare a Communications Strategy for the implementation of the Uganda National Agroforestry Strategy.

STRATEGIC OBJECTIVE 2: To strengthen the capacity of key stakeholders involved in the implementation and scaling up of agroforestry in Uganda.

Strategic activities

a) Conduct capacity needs assessment for key stakeholders in agroforestry and produce a capacity development plan.
b) Undertake capacity development based on identified capacity needs.
c) Identify and support the development of necessary agroforestry infrastructure and equipment in research and training institutions.
d) Support training institutions to review and update their curricula.
e) Strengthen the capacity of key agroforestry focal persons in ministries, DLGs, research organisations, and NGOs.
f) Strengthen Zonal Agricultural Research and Development Institutes.
g) Strengthen the delivery of agroforestry extension services at the district level.

STRATEGIC OBJECTIVE 3: To enhance research, knowledge transfer, and learning on agroforestry in Uganda

Strategic activities

a) Conduct agroforestry action-based research.
b) Participate in agroforestry-related national, regional, and international events and processes.
c) Update existing MWE and MAAIF information management systems and resource centers with agroforestry information.
d) Establish and support agroforestry demonstration sites in the different agroecological zones.
e) Conduct learning events, meetings, and conferences.

STRATEGIC OBJECTIVE 4: To strengthen agroforestry value chains for improved community livelihoods, biodiversity conservation and enhanced ecosystem services

Strategic activities

a) Identify and map the value chains of wood and non-wood agroforestry products.
b) Support farmers with equipment for value addition and skills development

on value chains for high-value agroforestry-based products (including Macadamia, cashew nuts, apiculture, shade coffee, etc).

c) Undertake targeted studies to analyse markets for agroforestry products.
d) Support the development of markets for agroforestry products at national, regional, and international levels.
e) Carry out economic evaluation on ecosystem services from agroforestry systems and practices.

STRATEGIC OBJECTIVE 5: To enhance the promotion, adoption, and scaling up of agroforestry approaches and technologies in Uganda

a) Conduct awareness campaigns on agroforestry and related approaches including farmer-managed natural regeneration (FMNR) and agroecology
b) Establish and support agroforestry seed stands.
c) Support the establishment of regional tree seed centers and certification of tree nurseries with appropriate tree species of importance for agroforestry.
d) Support the establishment and management of local agroforestry tree nurseries.
e) Establish and operationalise agroforestry Rural Resource Centers for training, demonstration, and technology incubation.
f) Facilitate the planting and management of agroforestry tree species in agricultural landscapes.

4.3 Theory of Change (ToC) for the National Agroforestry Strategy

The agroforestry strategy is developed to enhance the productivity, profitability, diversity, and ecosystem sustainability of agroecological systems. It is thus premised on the interlink between effective coordination, capacity building, research and knowledge transfer, strengthening wood and non-wood value chains as well as improving awareness of agroforestry. It is envisaged that;

- If the national agroforestry coordination unit charged with coordinating the adoption and implementation of agroforestry in Uganda is established and strengthened; Then there will be improved, collaboration and synergy building, reporting, governance and overall positive impact of agroforestry interventions in Uganda.
- If the institutional and technical capacity of key actors involved in the implementation and scale-up of agroforestry is built, Then, agroforestry

extension and reach to the smallholder farmers will be enhanced leading to its increased adoption and scale-up.

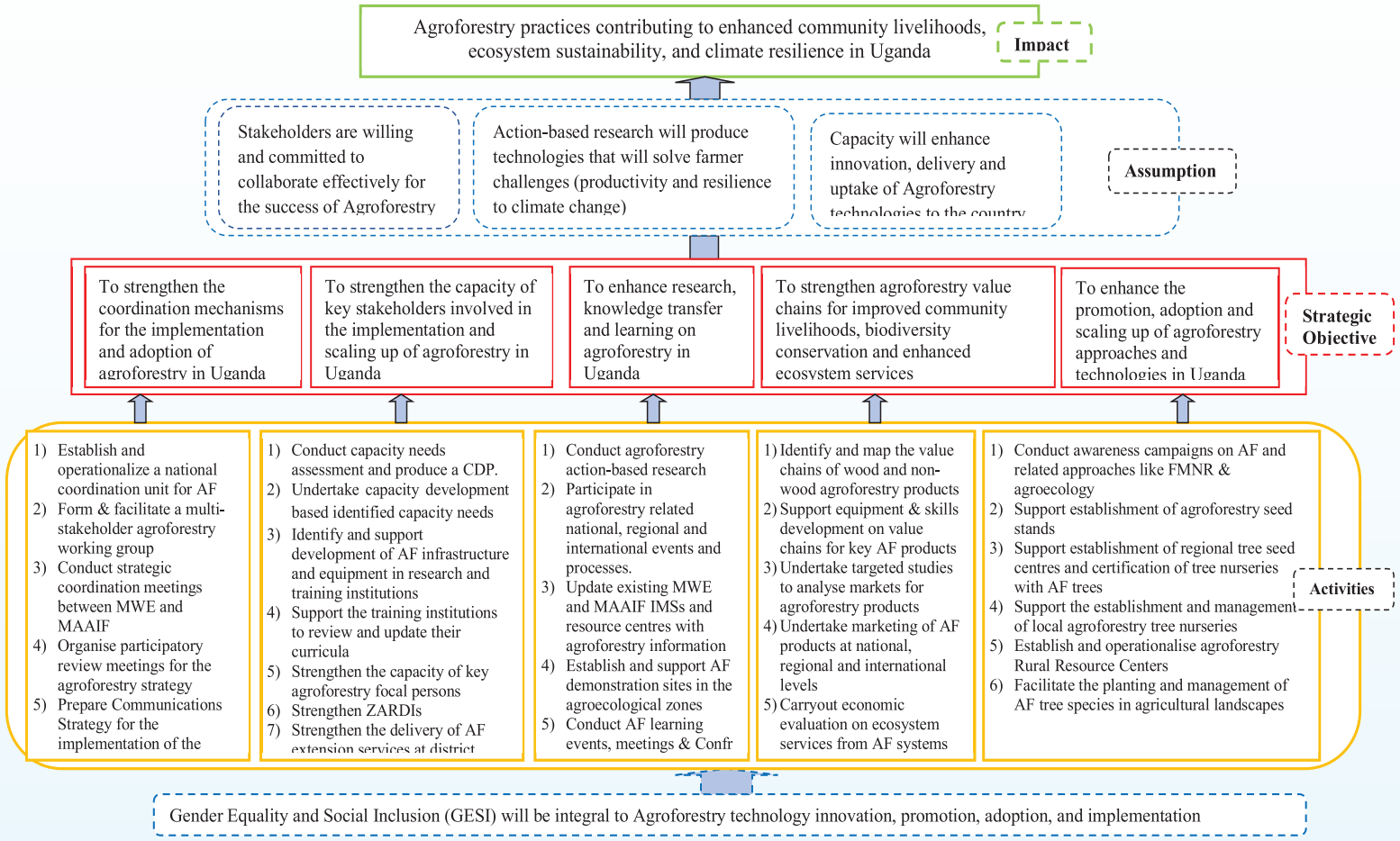
- If research, knowledge transfer, and learning on agroforestry are enhanced, Then, scientific innovations and technologies that address farmer challenges will be produced and agricultural productivity and the resilience of agroecological zones will be enhanced.
- If viable wood and non-wood value chains of agroforestry products with high commercial potential are developed and market linkages established; Then business opportunities will be enhanced, jobs and smallholder farmers' incomes will increase leading to general community livelihoods improvement, reduction in biodiversity loss, and the optimization of ecosystem services delivery
- If agroforestry awareness is promoted; Then the demand for agroforestry technologies by smallholder farmers will increase leading to improved adoption and scaleup.

The above strategic actions will ensure the achievement of the desired ultimate impact where agroforestry interventions in the different agroecological zones are contributing to enhanced community livelihoods, ensuring sustainable production and ecosystem sustainability, as well as enhancing climate resilience in Uganda. It is also envisaged that actors will integrate and mainstream gender equality and social inclusion in all actions to ensure inclusivity in participation and equitable benefit sharing.

The delivery of this ToC is premised on the following assumptions;

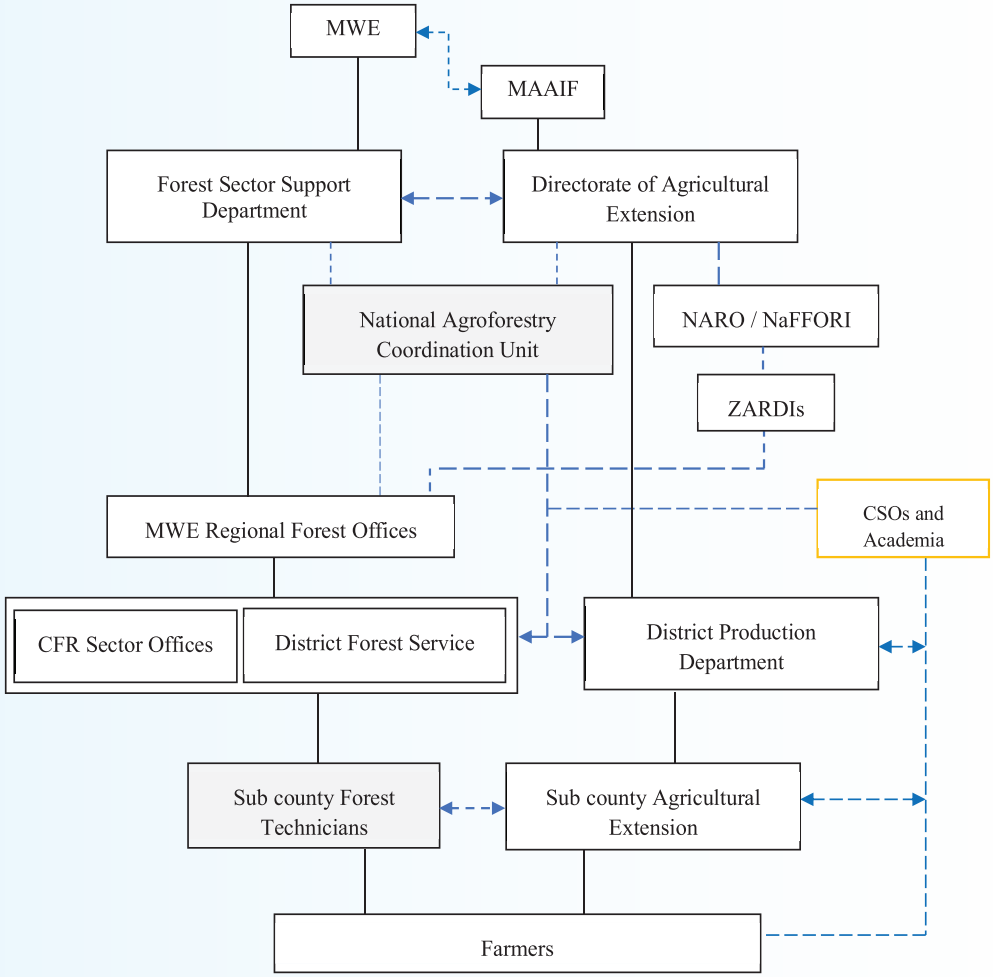
1) Stakeholders are willing and committed to collaborate effectively for the success of Agroforestry; and where there is adequate coordination, collaboration and information sharing will accelerate the adoption and scaling of agroforestry interventions
2) Action-based research will produce appropriate technologies that will solve farmer challenges (productivity and resilience to climate change)
3) Improved capacity will enhance innovation, and delivery uptake of agroforestry technologies to the farmer
4) That there will be adequate financing for agroforestry research and implementation of agroforestry innovations.
5) The ban on the recruitment of government staff would be lifted and the DFS structure adjusted to provide for hiring and facilitating of subcounty forestry technicians to deliver agroforestry extension services to smallholder farmers.

ToC Illustration



5.0 IMPLEMENTATION ARRANGEMENTS

5.1 Coordination arrangements



- - - - - lines for Collaboration/Linkage/Communication
_____ lines of Technical authority

Figure 1: Institutional arrangements for Agroforestry in Uganda

To effectively coordinate agroforestry interventions in Uganda, a multisectoral approach that brings different stakeholders together will be adopted. The MWE in collaboration with MAAIF will form a National Agroforestry Coordination Unit

which will be charged with the responsibility of coordinating awareness initiatives, reporting on all agroforestry interventions, convening the agroforestry working group, Sub Fora on Agroforestry/Urban forestry of the National Forestry Forum, fundraising, providing guidance to the correct application of the M&E system and for collating data and organizing evaluations. The Unit will further ensure alignment with the National Forestry Monitoring System (NFMS) and the collation of monitoring data to report on the agroforestry contribution to national targets and commitments through multilateral agreements such as the CBD, Aichi targets, NDCs, and Bonn Challenge/AFR100.

The National Agroforestry Coordination Unit will work through the established government structures for both MWE and MAAIF and ensure that there is collaboration, linkage, and communication between the line ministries, departments, research institutions, local governments, and CSO partners to ensure effective implementation of the strategy. For agroforestry extension to reach the farmers, government will build the capacity of the District Forest Services by recruiting sub-county forest technical officers to dispense technical guidance to farmers on tree growing, site species matching, and any other relevant silvicultural practices.

5.1.2 Roles of stakeholders in agroforestry

The Ministry of Water and Environment in collaboration with MAAIF will play a crucial role in the implementation of this strategy including coordination and building a strong consortium of stakeholders on agroforestry in Uganda. The *Agroforestry Movement* initiated by TUNADO and Woord en Daad could be a starting point in terms of building a constituency for agroforestry in Uganda. The roles of the various stakeholders in the development and promotion of agroforestry in the country are summarized in Annex III.

5.1.3 Communication

The secretariat team will publicize the implementation of the strategy by regularly communicating and sharing information on various activities through different platforms including; MWE & MAAIF websites, blogs, social media pages like X, Facebook, and LinkedIn, annual reports; mainstream media i.e. radio, TV and print media, stakeholders' meetings with all stakeholders including inter alia cultural and religious institutions. Information detailing achievements and lessons learned will be shared with all agroforestry stakeholders. Such communication will be guided by a communications strategy proposed under Strategic Objective 1.

5.1.4 Financing the implementation of the strategy

Financing the implementation of the agroforestry strategy will largely be from internal financing leveraging on existing networks, embedding interventions into annual budgets and work plans of ongoing forestry and agricultural projects and programs. There is also substantial external support for agroforestry implementation through civil society organisations (CSOs). The coordination unit will collaborate with these CSOs to capture this funding but also undertake to ensure that the following fundraising options among others are explored;

a) All fundraising proposals led by the two-line ministries embed agroforestry interventions in project design.

b) Targeted financial support be sought from the non-traditional funders including targeting Climate Change funds such as; Adaptation Funds, the Green Climate Funds e.g. the World Bank-funded project – Investing in Forests and Protected Areas for Climate Smart Development (IFPA-CD) Project, EU funded Partnership for Forests (P4F), Dutch Fund for Climate and Development (DFCD) among others.

c) Partnerships with commercial banks that extend revolving loans to farmers e.g. Green loans from ADB, Agri production loans from Centenary Bank; and tapping CSR funds from private companies like CocaCola, Nile breweries, Uganda Beverages Company Ltd, Hima Cement among others.

5.2 Implementation Approaches

5.2.1: Awareness creation

A communication strategy will be developed in a participatory way to aid the implementation of this strategy. The communication strategy will detail the relevant stakeholders, map out the series of activities to be undertaken to reach the target stakeholders, identify the messages and avenues for reaching the target stakeholders. Awareness creation will among other aspects include the production and dissemination of Information Education and Communication (IEC) materials, organizing workshops, leveraging digital platforms, and holding community meetings to disseminate agroforestry information. Government

ministries (MWE, MAAIF), local governments, NGOs, ZARDIs, and Academia will be responsible for providing agroforestry extension services and already play pivotal roles in disseminating information and providing technical support to farmers. By raising awareness about the advantages of agroforestry, stakeholders can foster a shift towards more resilient and environmentally friendly agricultural practices, contributing to food security and ecosystem health. Agroforestry awareness will also target national events like the honey week, Agroecology symposium, indigenous seed fair and land awareness week, Uganda water and environment week among others.

5.2.2: Strengthening viable wood and non-wood product value chains

To improve the value of wood and non-wood agroforestry-based products, extension services aimed at enhancing capacities for product development, value addition, and running agroforestry as a business will be supported. Such extension will begin from the establishment of standard tree nurseries for the production of high-value tree seedlings/planting materials that are responsive to the needs of smallholder farmers in different agroecological zones, private sector linkage for the provision of investment in low-cost processing equipment for value addition, the provision of incentives and subsidies for farm inputs, availing technologies for packaging and labeling, certification and linkage to national, regional and international markets.

5.2.3 Research

Research will be the main engine driving the effective implementation of the Uganda National Agroforestry Strategy. Focus will be placed mainly on action-based research aimed at developing suitable agroforestry technologies that will be applicable in the different agroecological zones of Uganda. Research will target agroforestry technologies to address identified needs related to improved community livelihoods, sustainable biodiversity conservation, and ecosystem services. Research will be conducted by research institutions such as NaFORRI, NARIs, and ZARDI's; and academic institutions and NGOs. Research activities as much as possible will be coordinated among the key players to avoid duplication and wastage of resources.

5.2.4 Extension services

Extension services will be the main pathways through which the provisions of the strategy will trickle down to the community who are the main target beneficiaries. It is therefore important that bottlenecks that hinder the effective delivery of agroforestry extension services such as limited staff at district and sub-county

levels; inadequate knowledge and skills on emerging agroforestry technologies and other concepts and lack of the required technologies etc; are addressed. This will require recruitment of extension officers and capacity building of all staff to update their agroforestry knowledge and skills.

5.2.5 Gender Equality and Social Inclusion (GESI)

Men, women, youth, the disabled, indigenous peoples, and other vulnerable groups must all participate in and share benefits fairly from agroforestry interventions. To ensure this, inclusive and transformative behavioral change methodologies such as Gender Action Learning Systems (GALS) that examine power dynamics, promote social inclusion, challenge negative stereotypes, and address social injustices at the household and community levels must be applied. Gender mainstreaming will be integral to the implementation of all actions in this strategy.

5.2.6 Partnerships and Collaborations

Given that there are several players involved in agroforestry in Uganda, partnerships and collaboration will be promoted among the different stakeholders. Partnerships and collaborations will be in the form of joint implementation of agroforestry interventions, research, capacity building, fellowships, and funding among others. Stakeholders will be expected to link up with the coordination unit to enable it to take stock of the existing funding, partnerships, and collaborations and the extent to which the strategy is being implemented.

6.0 Monitoring and Evaluation of Agroforestry Strategy Implementation

Monitoring and evaluation of the National Agroforestry Strategy will include continuous monitoring and periodic reviews and evaluations.

Continuous monitoring

The National Agroforestry Strategy will be subject to continuous monitoring to document the progress of implementation of agroforestry activities, achievements, and challenges based on the monitoring and evaluation framework shown in Annex IV. Monitoring reports will guide the MWE, MAAIF and other stakeholder to devise appropriate measures to address the identified challenges. The Agroforestry coordination unit together with other stakeholders will establish and determine the baselines and targets for the various strategic activities/indicators provided in the monitoring and evaluation framework, the basis on which progress of achievement of indicators will be measured. For effective monitoring of the Agroforestry Strategy, it is important to ensure that appropriate Agroforestry Development indicators and targets are incorporated in work plans at regional, district, and sub-county levels.

The coordination unit will undertake continuous monitoring on behalf of the Ministry of Water and Environment and the Ministry of Agriculture Animal Industry and Fisheries. Part of the coordination will be to follow up with agroforestry focal persons of government institutions and other key stakeholders to collate information on the progress of implementation of agroforestry activities and how they contribute to the realization of the strategic objectives of the Agroforestry

For effective monitoring of the Agroforestry Strategy, it is important to ensure that appropriate Agroforestry Development indicators and targets are incorporated in work plans at regional, district, and sub-county levels.

strategy. Monitoring data from the various government institutions, NGOs, and private sector institutions involved in agroforestry will be aggregated by the unit using preferable electronic data and information systems.

Review of the National Agroforestry Strategy

The National Agroforestry Strategy will be reviewed in a participatory way every two years by key stakeholders involved in agroforestry and reviews will be organised by the coordination unit. The reviews will aim at determining the progress of implementation, achievements, challenges, and whether the strategy is still responding to the prevailing context at the time of the review. Key actions will be developed depending on the findings of the review. A mid-term and final evaluation will be undertaken in the 5th year and six months before the end of the 10th year respectively to determine the extent to which the strategic objectives have been achieved, the impacts created, the challenges and gaps, and how these can be addressed. The mid-term and final evaluations of the strategy will be conducted by an external evaluator on behalf of the secretariat.

Annexes

ANNEX i: Strategy Work Plan

STRATEGIC OBJECTIVES / INTERVENTIONS	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
SO 1: To strengthen the coordination mechanisms for the adoption and implementation of agroforestry in Uganda										
1.1 Establish and operationalise a national coordination unit for Agroforestry										
1.2 Form and facilitate a multi-stakeholder agroforestry working group										
1.3 Conduct strategic coordination meetings between MWE and MAAIF										
1.4 Conduct participatory review meetings for the agroforestry strategy										
1.5 Prepare Communications Strategy for the implementation of the National Agroforestry Strategy.										
SO 2: To strengthen the capacity of key stakeholders involved in the implementation and scale up of agroforestry in Uganda.										
1.1 Conduct capacity needs assessment for key stakeholders in agroforestry and produce a capacity development plan										
1.2 Undertake capacity development based on identified capacity needs										

1.3 Identify and support development of necessary AF infrastructure and equipment in research and training institutions										
1.4 Support the training institutions to review and update their curricula										
1.5 Strengthen the capacity of key agroforestry focal persons										
1.6 Strengthen ZARDI's										
1.7 Strengthen the delivery of agroforestry extension services at district level										
SO 3: To enhance research, knowledge transfer and learning on agroforestry in Uganda										
1.1 Conduct agroforestry action-based research										
1.2 Participate in agroforestry related national, regional and international events and processes.										
1.3 Update existing MWE and MAAIF information management systems and resource centres with agroforestry information										
1.5 Establish and support agroforestry demonstration sites in the different agro-ecological zones										
1.6 Conduct learning events, meetings and conferences										
SO 4: To strengthen the agroforestry value chains for improvemed local community livelihoods, conserving biodiversity and enhanced ecosystem services										
1.1 Identify and map the value chains of wood and non-wood agroforestry products										

4.2 Support farmers with equipment for value addition and skills development on value chains for key agroforestry products										
1.3 Undertake targeted studies to analyse markets for agroforestry products										
1.5 Market agroforestry products at national, regional, and international levels										
1.6 Carryout economic evaluation on ecosystem services from agroforestry systems and practices										
SO 5: To enhance the promotion, adoption and scale-up of agroforestry approaches and technologies in Uganda										
1.1 Conduct awareness campaigns on agroforestry and related approaches including FMNR and agroecology	X	X	X	X	X	X	X	X	X	X
1.2 Establish and support agroforestry seed stands		X		X		X		X		
1.3 Support establishment of regional seed centres and certification of commmercial tree nurseries with agroforestry trees		X	X	X	X	X	X	X	X	X
1.4 Support the establishment and management of local agroforestry tree nurseries	X	X	X	X	X	X	X	X	X	X
1.5 Establish and operationalise agroforestry Rural Resource Centers.										
1.6 Facilitate the planting and management of agroforestry tree species in agricultural landscapes	X	X	X	X	X	X	X	X	X	X

ANNEX ii: COST summary (US $, 000)

Objective/Activity	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
SO1: To strengthen the coordination mechanisms for the adoption and implementation of agroforestry in Uganda										
1.1 Establish and operationalize a national secretariat for Agroforestry	10	5	5	5	5	5	5	5	5	5
1.2 Form and facilitate a multi-stakeholder agroforestry working group	20	20	20	20	20	20	20	20	20	
1.3 Conduct strategic coordination meetings between MWE and MAAIF	6	6	6	6	6	6	6	6	6	6
1.4 Conduct participatory review meetings for the agroforestry strategy			10		25			10		25
1.5 Prepare Communications Strategy for the implementation of the National Agroforestry Strategy.	7									
Sub Total	**43**	**31**	**41**	**31**	**56**	**31**	**31**	**41**	**31**	**36**
SO2: To strengthen the capacity of key stakeholders involved in the implementation and scale up of agroforestry in Uganda.										
2.1 Conduct capacity needs assessment for key stakeholders in agroforestry and produce a capacity development plan		15								
2.2 Undertake capacity development based on identified capacity needs		30	35	40	40	35	30	30		
2.3 Identify and support development of necessary AF infrastructure and equipment in research and training institutions		20	20	20	20	20	20	20		
2.4 Support the training institutions to review and update their curricula		15	15	15						

2.5 Strengthen the capacity of key agroforestry focal persons	36	36	36	36	36	36	36			
2.6 Strengthen ZARDI's		15	15	15	15	15	15	15	15	
2.7 Strengthen the delivery of agroforestry extension services at district level	200	200	200	200	200	200	200	200	200	200
Sub Total	**236**	**331**	**321**	**326**	**311**	**306**	**301**	**265**	**215**	**200**
SO3: To enhance research, knowledge transfer and learning on agroforestry in Uganda										
3.1 Conduct agroforestry action-based research		20	20	20	20	20	20			
3.2 Participate in agroforestry related national, regional and international events and processes.	45	45	45	45	45	45	45	45	45	45
3.3 Update existing MWE and MAAIF information management systems and resource centres with agroforestry information	5	5	5	5	5	5	5	5	5	5
3.5 Establish and support agroforestry demonstration sites in the different agro-ecological zones		60	60	30	30	30	15	15	15	
3.6 Conduct learning events, meetings and conferences	25	30	35	40	40	35	25	25	25	25
Sub Total	**75**	**160**	**165**	**140**	**140**	**135**	**110**	**90**	**90**	**75**
SO4: To strengthen agroforestry value chains for the improvement community livelihoods, biodiversity conservation and optimization of ecosystem services delivery										
4.1 Identify and map the value chains of wood and non-wood agroforestry products	27	27								
4.2 Support with equipment and skills development on value chains for key agroforestry products	150	150	150	150	150	150	150	150		

4.3 Undertake targeted studies to analyse markets for agroforestry products			30	30						
4.5 Market agroforestry products at national, regional and international level			40	40	40	40	40	40	40	40
4.6 Carryout economic evaluation on ecosystem services from agroforestry systems and practices				30					30	
Sub Total	**177**	**177**	**220**	**250**	**190**	**190**	**190**	**190**	**70**	**40**
SO5: To enhance the promotion, adoption and scaling up of agroforestry approaches and technologies in Uganda										
5.1 Conduct awareness campaigns on agroforestry and related approaches including FMNR and agroecology	50	50	50	50	50	50	50	50	50	50
5.2 Establish and support agroforestry seed stands		30		30		30		30		
5.3 Support establishment of regional tree seed centres and certification of commmercial tree nurseries with agroforestry trees		50	25	25	25	25	25	25	25	25
5.4 Support the establishment and management of local agroforestry tree nurseries	10	10	10	10	10	10	10	10	10	10
5.5 Establish and operationalise agroforestry Rural Resource Centres		100	100	100	100	100	100	100	100	
5.5 Facilitate the planting and management of agroforestry tree species in agricultural landscapes	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Sub Total	**1260**	**1440**	**1385**	**1415**	**1385**	**1415**	**1385**	**1415**	**1385**	**1285**
Total / Year	**1,791**	**2,139**	**2,132**	**2,162**	**2,082**	**2,077**	**2,017**	**2,001**	**1,791**	**1,636**
GRAND TOTAL										**19,828**

ANNEX iii: Agroforestry stakeholders and their respective roles

Stakeholder	Major role(s)
1) Government ministries, departments and agencies (MWE, MAAIF, FSSD, NEMA, NFA, etc)	• Provide funds for implementing the strategy • Give policy direction • Lead in agroforestry development and promotion coordination • Develop specific trees on farm targets for all agricultural landscapes in Uganda • Prepare consolidated reports on agroforestry (including Trees on Farm Targets) • Monitor the implementation of the strategy • Organize and undertake regular agroforestry training for staff
2) District Local Governments	• Provide extension services to promote agroforestry • Undertake capacity building of farmers, and M&E • Coordinate agroforestry implementation at the districts • Link with Zonal Agricultural Institutes for research and training • Mobilize farming communities to adopt agroforestry practices and innovations
3) NaFORRI/NARO	• Lead in the generation of high-yielding agroforestry technologies and diseases resistant varieties of agroforestry species for different agro-ecological zones • Link research to extension services for funding to conduct agroforestry research in the country • Lead the establishment of agroforestry Rural Resource Centers • Coordinate agroforestry research in the country with other national, regional, and international research organizations • Provide internship and volunteer opportunities on agroforestry
4) NARIs and ZARDIs	• Coordinate agroforestry research in their respective zones/regions • Establish and update their resource centers with up-to-date agroforestry information

	• Establish and maintain demonstration sites for agroforestry • Establish and maintain priority seed stands for the regions and supply required planting materials and other inputs to farmers and other stakeholders • Support agroforestry promotional activities in the zones/regions e.g. field days, media campaigns, etc. • Provide internship and volunteer opportunities on agroforestry
5) International NGOs (ICRAF, Woord en Daad, VI Agroforestry, etc)	• Provide leadership and backstop for agroforestry development and promotion • Mobilize resources from various sources for conducting agroforestry development and promotion • Support national institutions in the coordination of agroforestry activities in the country, • Create strategic linkkages with other regional and international agroforestry efforts • Advocate the establishment of an enabling environment for the effective implementation of agroforestry • Participation in the periodic reviews of the agroforestry strategy • Sharing reports on agroforestry projects and activities they are implementing with the coordination unit and other relevant government agencies
6) Local NGO's, CBO's and Cultural/religious institutions	• Take lead in the promotion and adoption of agroforestry in the country • Solicitation of funding from various sources to promote agroforestry technologies and innovations in the country • Mobilization of farming communities to adopt agroforestry practices and innovations • Social norms transformation especially on women and youth participation • Link agroforestry extension to research • Advocate for an enabling environment for the effective implementation of agroforestry • Participation in the periodic reviews of the agroforestry strategy

	• Sharing reports on agroforestry projects they are implementing with the coordination unit and other relevant government agencies • Provision of internship and volunteer opportunities on agroforestry
7) Development partners	• Provide financing for agroforestry development and promotion in the country • Ensure coordinated financial support to agroforestry research and extension
8) Farmers and Farmer organizations	• Provide funding for agroforestry promotion in the country • Link farmers and farmer organizations to research and financing institutions • Mobilize farming communities in adopting agroforestry practices and innovations • Provide leadership in the identification of key priority agroforestry research and extension issues to be addressed
9) Private Sector	• Provide financial support for agroforestry research and extension in the country • Adopt and popularize profitable agroforestry technologies and innovations • Promote agroforestry research and private partnerships in agroforestry development and investment in the country • Identify and avail markets for wood and non-wood agroforestry products
10) Training institutions (Universities and colleges)	• Integrate agroforestry curricula • Provide training and refresher courses in agroforestry • Publish research in agroforestry (special projects, MSc and PhD theses, journal articles and policy briefs) • Develop training and dissemination materials for agroforestry (manuals, guides, booklets, posters, flyers, etc.) • Setup agroforestry training or practical sites or demonstrations • Supervise student internships and research on agroforestry

ANNEX IV: MONITORING AND EVALUATION FRAMEWORK FOR THE AGROFORESTRY STRATEGY 2024-2033

STRATEGIC OBJECTIVES / INTERVENTIONS	INDICATORS	MEAN OF VERIFICATION	FREQUENCY OF DATA COLLECTION	RESPONSIBILITY
SO 1: To strengthen the coordination mechanisms for the adoption and implementation of agroforestry in Uganda				
1.1 Establish and operationalize a national coordination unit for Agroforestry	# of staff recruited or seconded to the AF coordination unit	Staff lists	Annually	MWE / FSSD; MAAIF DLGs
1.2 Form and facilitate a multi-stakeholder agroforestry working group	# of stakeholders represented on the AF working group # of meetings conducted the AF working group and action points implemented	Minutes of meetings AF reports	Biannually	AF coordination unit
1.3 Conduct strategic coordination meetings between MWE and MAAIF	# of strategic coordination meetings conducted between MWE and MAAIF, # of strategic actions arising implemented by MWE, MAAIF and other stakeholders	Activity reports	Biannually Biannually	AF coordination unit
1.4 Conduct participatory review meetings for the agroforestry strategy	# of AF strategy review meetings conducted # and categories of stakeholders participating in the review meetings # of actions from review meetings implemented	Minutes and actions of the review meetings Participant lists Reports	Every after 2 years	AF coordination unit

1.5 Prepare a Communications Strategy for the implementation of the National Agroforestry Strategy.	# of farmers reached with AF information Communication Strategy	A copy of the communication strategy	Annually	AF coordination unit District forest and agriculture officers, CSOs
SO 2: To strengthen the capacity of key stakeholders involved in the implementation and scale-up of agroforestry in Uganda.				
1.1 Conduct capacity needs assessment for key stakeholders in agroforestry and produce a capacity development plan.	# of capacity needs assessments conducted	Capacity assessment reports	Annually	AF coordination unit
1.2 Undertake capacity development based on identified capacity needs	# of capacity building events conducted # of stakeholders with improved knowledge and skills on AF	Capacity building reports	Annually	AF Focal persons AF coordination unit
1.3 Identify and support the development of necessary AF infrastructure and equipment in research and training institutions	# of research and training institutions with adequate research equipment and infrastructure # of AF research publications produced from research and training institutions	Records of equipment, Procurement documents	Annually	Research/ training institutions
1.4 Support the training institutions to review and update their curricula	# of academic institutions utilizing reviewed and up to date curricula.	Curricula review reports	Annually	Institutional AF focal persons

1.5 Strengthen the capacity of key agroforestry focal persons	# of focal persons equipped with and utilizing up-to-date AF knowledge and skills	Capacity building reports	Annually	AF coordination unit
1.6 Strengthen ZARDI's	# of zonal centers strengthened	Reports from AF zonal centers	Annually	Zonal centres staff
1.7 Strengthen the delivery of agroforestry extension services at the district level	# of forestry and agricultural extension staff recruited at district and sub-county levels % Budget allocation for agroforestry extension # of CSO advocacy engagements on DFS structural adjustments	Recruitment reports District annual work plans CSO reports	Annually	District Service Commission District forest and agriculture officers CSOs
SO 3: To enhance research, knowledge transfer and learning on agroforestry in Uganda				
1.1 Conduct agroforestry action-based research	# of AF research findings disseminated and utilized by farmers	Research reports Field reports		
1.2 Participate in agroforestry-related national, regional, and international events and processes.	# of stakeholders proactively participating in national, regional, and international events to showcase AF.	Campaign reports	Annually	AF coordination unit

1.3 Update existing MWE and MAAIF information management systems and resource centers with agroforestry information	# of AF publications and reports uploaded or made available in the information management system and resource centers # of people utilizing /accessing AF information centers	Copies of reports uploaded Records of people accessing different information systems	Quarterly Quarterly	MWE and MAAIF Communication and information managers
1.4 Establish and support agroforestry demonstration sites in the different agro-ecological zones	# of agroforestry demonstration sites established # of people served by the AF demonstration sites	Reports	Biannually	AF coordination unit / focal persons
1.5 Conduct learning events, meetings, and conferences	# of learning events, meetings, and conferences conducted	Reports of learning events	Annually	AF coordination unit
SO 4: To strengthen the agroforestry value chains for improved local community livelihoods, conserving biodiversity and enhanced ecosystem services				
1.1 Identify and map the value chains of wood and non-wood agroforestry products	# and type of wood and non-wood value chains deliberately strengthened # of AF value chains being utilized by the local communities	Reports on AF value chains	Annually Annually	AF coordination unit

1.2 Support farmers with equipment for value addition and skills development on value chains for key agroforestry products	# of stakeholders who have acquired new skills in value chains # value addition equipment provided to farmers/farmer groups	Value chain study reports	Annually	AF coordination unit, Research and training institutions District forest and agriculture officers
1.3 Undertake targeted studies to analyse markets for agroforestry products	# of AF products with clear market information from studies	Market analysis Study reports	Annually	AF coordination unit; Research institutions
1.4 Market agroforestry products at national, regional, and international level	# and quantity of AF products being marketed at national, regional, and international markets	Reports	Annually	AF coordination unit AF focal persons
1.5 Carry out economic evaluation of ecosystem services from agroforestry systems and practices	# of AF systems whose ecosystem services economic value has been determined	Ecosystem services economic Reports	Annually	AF coordination unit Research institutions
SO 5: To enhance the promotion, adoption, and scaling up of agroforestry approaches and technologies in Uganda				
1.1 Conduct awareness campaigns on agroforestry and related approaches including FMNR and agroecology	# of awareness campaigns on AF forestry conducted	Campaign reports	Annually	AF coordination unit District forest and agriculture officers

1.2 Establish and support agroforestry seed stands	# of AF seed stands established	Copies of bankable business proposals		AF coordination unit
1.3 Support the establishment of regional seed centers and certification of tree nurseries with agroforestry trees	# of functional seed centers established at regional level # of tree nurseries certified to supply quality seedlings	Presence of seed centres; Reports; lists of certified nurseries	Annually	AF coordination unit
1.4 Support the establishment and management of local agroforestry tree nurseries	# of local tree nurseries established as a result of extension services	Field reports	Quarterly	District Extension staff
1.5 Establish agroforestry Rural Resource Centers.	# of RRCs established and functional	Reports	Annually	NaFFORI / NARO
1.6 Facilitate the planting and management of agroforestry tree species in agricultural landscapes	# of tree seedlings provided by the government to support AF # of farmers trained in the management of AF trees	Reports CSO partner reports National Reports on the implementation of commitments under the different agreements (CBD, Aichi targets, NDCs, and Bonn Challenge/ AFR100)	Quarterly	District forest and agriculture officers CSOs NEMA/MWE/ AF coordination unit

ANNEX V: List of Stakeholders Consulted

#	Institution	Representatives	Telephone Contacts	E-mail address
Participants from MWE and Agencies				
1.	Minister of State for Environment	Hon. Beatrice Atim Anywar	0772998724	lass2031@gmail.com
2.	Minister of State for Water	Hon. Aisha Sekindi	0776837837	aishasekindi@gmail.com
3.	Permanent Secretary, Ministry of Water and Environment	Dr. Alfred Okot Okidi	0784544270	alfredokidi64@gmail.com
4.	Under Secretary – Finance and Administration, MWE	Ms. Nassuna Catherine	0782374474	Catherine.nassuuna@mwe.go.ug
5.	ED-National Environment Management Authority	Dr. Barirega Akankwasah	0772831348	barirega.akankwasah@nema.go.ug
6.	Deputy Managing Director, National Water and Sewerage Services	Eng. Johnson Amayo	0756866174 0790560812	Johnson.amayo@nwsc.co.ug
7.	Ag. Director Plantations Development, National Forestry Authority	Mr. Mwodi Martin Kegere	0781519433	mwodim@gmail.com
8.	Commissioner, Water Resources Planning and Regulation	Dr. Callist Tindimugaya	0772521413	ctindimugaya@gmail.com
9.	Commissioner, Wetlands Management Department	Mr. Okurut David	0782805933	Okurutdavid43@gmail.com
10.	Commissioner Water Utility Regulation Department	Eng. Christopher Tumusiime	0772701832	chris.tumusiime@hotmail.com

11.	Commissioner, Climate Change Department	Mrs. Margaret Athieno Mwebesa	0772470023	margathieno@gmail.com
12.	Commissioner, WDWRM-Monitoring & Assessment, MWE	Dr. Zaake Benon	0772417595	bzaake@yahoo.com
13.	Commissioner, Environment Sector Support Services	Mr. Mugabi Stephen David	0782059294	mugabisd@gmail.com
14.	Commissioner, Water Quality Management	Ms. Idrakua Lillian F.A	0772895585	gescca@yahoo.com
15.	Commissioner Department of Meteorology Services	Dr. Bob Alex Ogwang	0772961439	bob.ogwang@unma.go.ug
16.	Assistant Commissioner, International and Transboundary Water Affairs, MWE	Mr. Tumwebaze Wycliffe	0772438630	wtumwebaze@gmail.com
17.	Assistant Commissioner, Policy and Planning, MWE	Mr. Masaba Andrew	0782177125	kojodre10@gmail.com
18.	Assistant Commissioner Internal Audit, MWE	Mr. Walter Okello	0772595705	walter.okello@gmail.com
19.	Ag. Commissioner Water and Environment Sector Liaison, MWE	Eng. Ivan Birungi	0752252928	ivanbirungi@gmail.com
20.	Assistant Commissioner Human Resource Management, MWE	Mr. Ezati Godfrey	0772567221	ezagos@gmail.com
21.	Assistant Commissioner, PDU, MWE	Mr. Mike D. Tumwikirize	0702400040	mikhail.duncan@gmail.com
22.	Under Secretary /F&A, MWE	Dr. Mugunga Emmanuel Fred	0772511245	efmugunga@gmail.com

23.	Ag. Commissioner/ Policy and Planning Department, MWE	Mr. Ocare Denis	0772390763	docare2009@gmail.com
24.	Assistant Commissioner, Department Of Meteorology, MWE	Mr. Waisswa Micheal Milton	0777216000	mmwaiswa@gmail.com
25.	Commissioner, WDWRM-Monitoring & Assessment, MWE	Mr. Mwebembezi Leodinous	0772427656	leomwebembezi@gmail.com
26.	Assistant Commissioner / Accounts, MWE	Ms. Atebat Grace	0772350533	graceatebat256@gmail.com
27.	Assistant Commissioner, Water Quality Management Department, MWE	Mr. Etimu Simon	0782894075	simon.etimu@gmail.com
28.	Principal Assistant Secretary/MWE	Mr. Lubega Raphael	0772346755	lubegaraphael@yahoo.co.uk
29.	Information Technology Officer	Mr. Adaku Hillary Joe	0764989068	hillaryjean81@gmail.com
30.	SDO- MWE/Kyoga Water Management Zone	Mr. Emwaku E. Smith	0781863030	esmithenwaku@gmail.com
31.	CCO- M&E	Ms. Namita Cherie	0781238009	cherieamita@gmail.com
32.	Senior Economist, MWE	Ms. Namwiira Mildred Martha	0782269828	namiira11@yahoo.com
33.	Statistician/PPD, MWE	Ms. Alum Fiona	0705889885	fionaal93@gmail.com
34.	Senior Economist, MWE	Ms. Kansiime Charity	0779220597	kansiimecharity05@gmail.com
35.	Principal Water Officer, Kyoga Water Management Zones	Mr. Tumusiime P. Edmonds	0756733914	Edmondstep256@gmail.com
36.	Senior Water Officer, Upper Nile Water Management Zone, MWE	Mr. Abak Gerald	0759994449	geraldabak@gmail.com

37.	Senior Water Analyst-Victoria Water Management Zone, MWE	Mr. Emor Stephen	0772691238	emsteve36@gmail.com
38.	Principal Water Officer- Albertine Water Management Zone, MWE	Dr. Guma Brian.E.	0704028856	gubrian2@gmail.com
39.	Economist-Ministry of Lands, Housing and Urban Development	Mr. Ssempewo Mark	0704121242	Mark.Ssempewo@mlhud.go.ug
40.	Economist- Uganda Land Commission	Ms. Awachango Tracy	0706587344	tracy.awachango@ulc.go.ug
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