THE REPUBLIC OF UGANDA

MONITORING, EVALUATION, ACCOUNTABILITY AND LEARNING (MEAL) FRAMEWORK FOR THE NBSAP II OF UGANDA

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FOREWORD

Uganda ratified the United Nations Convention on Biological Diversity (CBD) in September 1993, and set in motion a national process to integrate biodiversity conservation and management actions into development planning and implementation of conservation actions aligned to the global standards. Since ratification, Uganda has produced two National Biodiversity Strategy and Action Plans (NBSAPs), and six National Reports on the progress of implementation of the CBD in the country. The NBSAP II which runs between 2015/16 and 2025/26, proposed a Monitoring and Evaluation (M&E) framework to support regular monitoring, and evaluation of the implementation of the NBSAPs. Whereas under the convention's Article 26, Uganda has complied with the requirement for national reporting, a voluntary peer review of the NBSAP II implementation showed that not only was a comprehensive monitoring and evaluation framework missing, but that the framework needed to be expanded to include accountability and learning. The current MEAL (Monitoring, Evaluation, Accountability and Learning) framework is designed to meet this need.

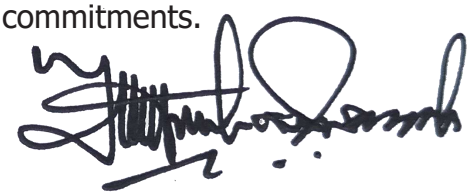
Within the MEAL framework, monitoring is a continuous process used to keep project activities/ progress on track, identify day-to-day issues, and provide timely information to management and stakeholders for informed decision-making and course correction. Evaluation is a process for ensuring and assessing the effectiveness, relevance, efficiency, impact, and sustainability of interventions. It is performed periodically and its scope differs from case to case—it can be formative or summative. Accountability is a key feature that gives power to beneficiaries, donors, clients, and other relevant stakeholders to hold implementing agencies accountable for their interventions, actions, policies, and priorities. Accountability mechanisms include complaint-handling mechanisms and feedback practices, especially to women, persons with disabilities, minorities, persons, and other marginalised communities. Learning is a key success factor for refining programming by adding value for improvement, revising strategies, and updating plans and frameworks based on key lessons learned, findings and recommendations.

The MEAL framework comprises six sections; (i) The logic models which consist of the theory of change (TOC), the Results Framework; and the Logical Framework; (ii) Planning MEAL Activities, the plan, budget, and calendar under the Performance Management Plan (PMP); (iii) Collecting MEAL data consisting of quantitative and qualitative data; (iv) Analysis of MEAL data; non-statistical, descriptive, and statistical analyses; (v) Using MEAL data; and (vi) Accountability and learning mechanisms and support mechanisms. The logic models developed in the MEAL framework are aligned with the NBSAP II, the third National Development Plan (NDP III), and the Vision 2040, thereby ensuring that the biodiversity conservation indicators contribute to economic development, and fulfilment of the country's obligations. The PMP developed refined the indicators of the NBSAP II through stakeholder engagement and expert judgement into 42 key indicators for biodiversity conservation in Uganda. The data collection, and analysis are based on best practices in the country and experiences from other Parties to the CBD. The MEAL data will be used to address sustainable use and management of biodiversity and ecosystems. MEAL framework provides for accountability to Indigenous Peoples and Local Communities (IPLCs), all citizens of Uganda, public sector through ministries, agencies and local governments, civil society, academic and research institutions, private sector, and development partners.

The MEAL framework will be used to monitor and evaluate the progress, effectiveness and efficiency of interventions implemented as part of the NBSAP II. The framework requires that the monitoring and evaluation are done in a participatory manner that allows for feedback and complaint mechanisms, and learning opportunities leading to strengthening and/or revision of the project implementation to achieve the joint goals of the project and all the stakeholders. At every step of monitoring and evaluation, IPLCs, public sector, civil society, development partners will participate

in the planning, collection of data and analysis, and use of the results of the MEAL. The increased stakeholder participation is expected to lead to mobilisation of additional financial, technical and human resources, and increase the conservation outcomes, and the social and economic benefits of implementing the NBSAP II.

On behalf of the Government of Uganda, the National Environment Management Authority welcomes the development of this MEAL framework. The framework is a forward step towards realising the country's biodiversity targets, and ensuring that sustainable biodiversity conservation and use for the improved welfare of the people of Uganda, and the fulfilment of global biodiversity conservation commitments.



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ACKNOWLEDGMENTS

The Monitoring, Evaluation, Accountability and Learning (MEAL) Framework was developed by an Expert Working Group (EWG) under the leadership of the National Environment Management Authority (NEMA), on behalf of the Government of Uganda. The activity benefited from financial support provided by the Norwegian Agency for Development Cooperation (NORAD) through the Wildlife Conservation Society (WCS). The following institutions were involved in the development of the MEAL.

1. The National Environment Management Authority
2. The Ministry of Tourism, Wildlife and Antiquities
3. The Ministry of Agriculture, Animal Industry and Fisheries
4. The Ministry of Water and Environment
5. Uganda Wildlife Authority
6. National Forestry Authority
7. Uganda National Council of Science and Technology
8. National Agricultural Research Organisation
9. Makerere University College of Agriculture and Environmental Studies, and the College of Natural Sciences.
10. Mukono District Local Government
11. Buikwe District Local Government
12. Kayunga District Local Government
13. Jinja District Local Government
14. Wakiso District Local Government
15. Nature Uganda
16. The Wildlife Conservation Society

NEMA is grateful of the review inputs from the Technical Committee on Biodiversity Conservation, the Technical Committee of the Board, and the NEMA Board of Directors. Gratitude is also extended the CBD Focal Person and the Monitoring and Evaluation Unit; for coordinating the development of the MEAL.

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ACRONYMS

AWF	African Wildlife Fund
DRR	Disaster Risk Reduction
ECOTRUST	Environmental Conservation Trust- Uganda
FSSD	Forest Sector Support Department
GBF	Global Biodiversity Framework
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for the Conservation of Nature
LGs	Local Governments
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MEAL	Monitoring, Evaluation, Accountability and Leaning
MEMD	Ministry of Energy and Mineral Development
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoLHUD	Ministry of Lands, Housing and Urban Development
MoTIC	Ministry of Trade, Industry and Cooperatives
MoWT	Ministry of Works and Transport
MWE	Ministry of Water and Environment
NAFIRRI	National Fisheries, Resources, Research Institute
NAGRC&DB	National Animal Genetic Resource Centre and Data Base
NARO	National Agricultural Research Organisation
NBSAP II	Second National Biodiversity Strategy and Action Plan
NDP	National Development Plan
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NPA	National Planning Authority
OPM	Office of the Prime Minister
PAU	Petroleum Authority of Uganda
PGRC	Plant Genetic Resource Centre
PIAPs	Programme Implementation Action Plans
PMP	Performance Management Plan
SDGs	Sustainable Development Goals
TCBC	Technical Committee on Biodiversity Conservation
TOC	Theory of Change
UBOS	Uganda Bureau of Statistics
UCDA	Uganda Coffee Development Authority
UDC	Uganda Development Corporation
UECCC	Uganda Electricity Credit Capitalisation Company
UEPB	Uganda Export Promotions Board
UETCL	Uganda Electricity Transmission Company Limited
UGGDS	Uganda Green Growth Development Strategy
UNBS	Uganda National Bureau of Statistics
UNCST	Uganda National Council of Science and Technology
UNMA	Uganda National Meteorological Authority
UVRI	Uganda Virus Research Institute
UWA	Uganda Wildlife Authority
UWCEC	Uganda Wildlife Conservation and Education Centre
VPR	Voluntary Peer Review
WCS	Wildlife Conservation Society
WMD	Wetland Management Department
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

The National Environment Management Authority (NEMA), on behalf of the Government of Uganda, received financial support from the Wildlife Conservation Society (WCS) through the Norwegian Agency for Development Cooperation (NORAD) to support the development of a Monitoring, Evaluation, Accountability and Learning (MEAL) framework. The framework will be used to support the implementations and reporting of progress on the National Biodiversity Strategy and Action Plan (NBSAP). The MEAL framework is required for effective tracking, review, and/or assessment and reporting of the progress in the implementation of the NBSAPs.

The motivation for the MEAL framework as an improvement upon the M&E framework emerged out of the work undertaken as part of the NBSAP II Voluntary Peer Review (VPR). Between 2019 and 2021, the National Environment Management Authority (NEMA) coordinated a VPR of the implementation of the NBSAP II (2015-2025). The recommendations from the VPR included the call to accelerate mainstreaming through enhanced program governance, capacity-building, knowledge management, and communication, through; monitoring and learning, sectoral programmes, local governments, human resource capacity building, knowledge management, and communication, among others.

Additionally, at the international level, the first draft of the Post-2020 Global Biodiversity Framework (GBF), to replace the 2011-2020 Biodiversity Strategy, was released in July 2021. The Post-2020 GBF builds on the Strategic Plan for Biodiversity 2011-2020 and sets out an ambitious plan to implement broad-based actions to turn about a transformation in society's relationship with biodiversity and to ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled. The three goals of the GBF are: (i) Reducing threats to biodiversity with eight targets (Targets 1-8); (ii) Meeting people's needs through sustainable use and benefit-sharing (Targets 9-13); and (iii) Tools and solutions for implementation and mainstreaming (Targets 14-21). The MEAL framework is captured in the goals and targets, and in the implementation framework, which comprises; the implementation support mechanisms, enabling conditions, responsibility, and transparency, and outreach, awareness, and uptake.

The Draft Post 2020 GBF indicates that the framework will be supported by three additional documents: (a) a monitoring framework with headline indicators, (b) a glossary with a definition of terms used in the framework, and (c) supporting technical information on each draft goal and target. The GBF aims to facilitate implementation, which will be primarily through activities at the national level, with supporting action at the subnational, regional, and global levels including to facilitate regular monitoring and review of progress at the global level.

The performance implementation plan of the MEAL shows 42 performance/ context indicators to be implemented over the remaining four years of the NBSAP II. The performance/ context indicators were refined from the over 200 output indicators, and more than 50 intermediate and strategic indicators of the NBSAP II. The performance/ context indicators were developed with anticipation of the GBF, and the potential for the implementation period of the indicators to extend beyond the current timeline.

The evaluation plan is based on three schedules of evaluation, annual evaluation for indicators where the cost of environmental damage without immediate mitigation action would be high for example pollution in fragile ecosystems. For many of the indicators the evaluation will be conducted every five years; however, the MEAL proposes consideration for accountability and learning; therefore, the biannual evaluation activities are proposed to enhance stakeholder involvement in the direction of implementing the NBSAP II. The evaluation plan proposes increased use of participatory approaches

in the evaluation including group assessment, focus group discussions, and group informant surveys. The participatory approaches have to be set from the outset including revision of benchmark indicators and target indicators. There will be need, as well, for evaluation reports that show the feedback with beneficiary stakeholders to the funding partners such as government, development partners, civil society and private sector. An annual monitoring schedule was adopted throughout the implementation of the MEAL for the NBSAPII. Nonetheless, given the large number of indicators and stakeholders and implementing entities involves, it is proposed that the actual monitoring be undertaken quarterly even though the reporting will be annual, in this way the databases can be populated gradually over an extended period of time.

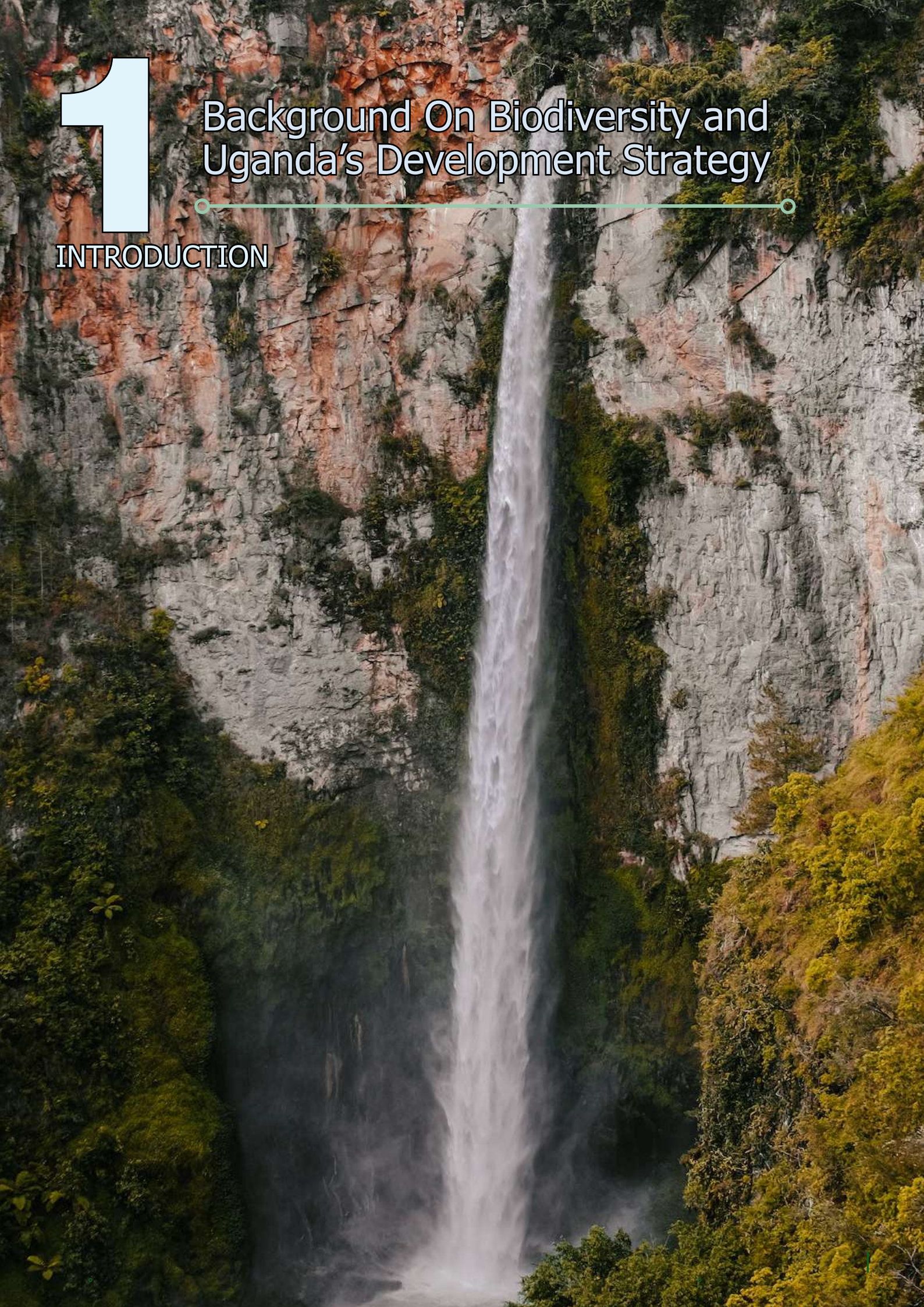
Both the evaluation and monitoring plan will be increasingly integrated in the national statistical system under the Uganda Bureau of Statistics (UBOS), and the fiscal data analysis systems at the MoFPED. The data generated will also be used to draw inference on livelihoods and economic performance across the country. The estimated budget for the MEAL is $9.45 million. However, most of the resources, about 60% ($ 5.73 million) are for actions already covered under government obligations, some of which have already been implemented. About 40% or $3.73 million would require mobilising additional resources from different sources including government, development partners, civil society and private sector.

The MEAL framework is divided into eight sections of the report;

i. The introduction, which covers the background and context of the framework;
ii. The logic models which consist of the theory of change (TOC), the Results Framework; and the Logical Framework;
iii. Planning MEAL Activities, the plan, budget, and calendar under the Performance Management Plan (PMP);
iv. Collecting MEAL data consisting of quantitative and qualitative data;
v. Analysis of MEAL data; non-statistical, descriptive, and statistical analyses;
vi. Using MEAL data;
vii. Accountability and learning mechanisms; and
viii. Supporting actions for the MEAL.

The results of the MEAL framework will be used for adaptive management, and progress reporting for NBSAP II implementation, and proposed revisions in line with the Global Biodiversity Framework (GBF). Adaptive management uses the feedback achieved from the MEAL to reinforce implementation of NBSAP II actions. Adaptive management will be strengthened in environmental compliance mechanisms such as environmental and social management plans (ESMPs), compliance and voluntary audits, use of economic instruments (fiscal taxes, compliance and resource charges and fees), and the use of systems of environmental economic accounting (SEEA) in macroeconomic planning and policy formulation. Adaptive management will also be included in national and sub-national planning and budgeting as part of the national budget cycles through indicators mainstreamed in the Programme Implementation Action Plans (PAIPs) for NDP III implementation. Progress reporting is key for the annual reporting of institutions, for period reporting such as through the national reports, and voluntary peer review mechanisms (VPRs), and compliance reports for management of ecosystems, natural resources, and biodiversity within a national and international setting, and project reports.

Three supporting actions were also included into the MEAL framework. These are; developing and disseminating tools to support knowledge and information exchange, developing a harmonised data reporting tool for the MEAL dash board/ platform, and developing an integrated review mechanism into the MEAL framework. These actions are included in the strengthening monitoring and evaluation actions for the NBSAP II, in the PMP.



1 Background On Biodiversity and Uganda's Development Strategy

INTRODUCTION

1.1 Background on biodiversity and Uganda's development strategy

Biodiversity conservation is a critical part of Uganda's Constitutional obligations for the Government and Citizens. Article 27, of the Constitution states that natural resources should be managed and utilised in a sustainable manner, and that the state should take all possible measures to prevent or minimise damage and destruction to environment resulting from pollution and other causes, and that the state would promote and implement energy policies that ensure that people's basic needs while preserving the environment, among others (GoU 1995). The Government included biodiversity conservation in the long-term development strategy, the Vision 2040, the Uganda Green Growth Development Strategy (UGGDS), and the medium term development strategy, currently, the third National Development Plan (NDP III). The second National Biodiversity Strategy and Action Plan (NBSAP II) informed the biodiversity conservation strategies integrated into the UGGDS, and NDP III. The goal of NBSAP II is to enhance biodiversity conservation, management and sustainable use and fair sharing of the benefits.

Uganda is one of Africa's richest species biodiverse countries, with an estimated 1,742 terrestrial vertebrate species (with more than half of Africa's birds), and at least 3,662 plant species (Plumptre et al. 2017). Uganda's ecosystems are defined based on the 13 land cover classes comprising five forest land cover classes of broadleaved plantations, coniferous plantations, Tropical High Forest (THF) well stocked, THF low stocked, and woodlands. Farmlands which comprise small-scale farmlands and commercial farmlands, which are the largest ecosystem areas in the country, and they cover about half of the total area (NEMA 2021). The natural rangelands include bushlands, and grasslands. Open waters (of lakes and rivers) and wetlands are also major components of Uganda's ecosystems while built up areas are rapidly increasing (UBOS 2019).

The NBSAP II proposed regular monitoring of the biodiversity targets in the country, mid-term and end-term evaluation of the strategic action plan. The Monitoring, Evaluation, Accountability and Learning (MEAL) framework was developed to firstly describe the improvements on the monitoring and evaluation carried out through the National Reporting System, and the Voluntary Peer Review (VPR). The lessons learned from the national reporting and the VPR include the need to accelerate mainstreaming capacity-building, knowledge management, and communication, through; monitoring and learning, sectoral programmes, local governments, human resource capacity building, knowledge management, and communication, and the need to strengthen the NBSAP targets and implementation capacity to address the drivers of biodiversity loss.

The Post-2020 GBF builds on the Strategic Plan for Biodiversity 2011-2020 and sets out ambitious plans to implement broad-based actions to bring about a transformation in society's relationship with biodiversity and to ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled. The three broad goals of the GBF are:

i. Reducing threats to biodiversity with eight targets (Targets 1-8);
ii. Meeting people's needs through sustainable use and benefit-sharing (Targets 9-13); and
iii. Tools and solutions for implementation and mainstreaming (Targets 14-21).

1.2 Purpose and objectives

Monitoring of biodiversity conservation under the NBSAP II has always relied on the results framework presented in the NBSAP document. The indicators, outputs, implementing agencies, proposed timelines and resources are all indicated in the NBSAP II document. Both the NBSAP II and its implementation and M&E framework are in line with the country's obligations under Article 6 of the Convention on Biological Diversity (CBD). The NBSAP II is composed of eight strategic objectives, 34 national targets, 56 key outcome indicators, and 184 output indicators.

The NBSAP II plan for monitoring and evaluation proposed: (i) monitoring at different levels and intervals with the full involvement of different stakeholders, with the National Environment Management Authority (NEMA) as the lead organisation to coordinate monitoring and evaluation of NBSAP II with support of the Technical Committee on Biodiversity Conservation (TCBC); and (ii) for NEMA to compile monitoring reports received from stakeholders to produce an annual state of biodiversity report, which will provide a basis for implementation and serve as a guide for future strategic planning.

The NBSAP II review through the Voluntary Peer Review (VPR), and evaluation of NBSAP I included in the NBSAP II report showed that there were gaps in the implementation of the NBSAP linked to the lack of a comprehensive monitoring, evaluation and reporting system. Throughout the period of NBSAP implementation there was very limited information on the engagement between the responsible agencies, and the beneficiaries of biodiversity conservation actions in the country. Whereas progress was made on ecosystem conservation, and biotechnology regulation in the country, the participation of community level actors such as Indigenous Peoples and Local Communities (IPLCs) was neither recorded or reported on. The consensus from the VPR was that the monitoring and evaluation framework needed to be improved to enhance reporting, stakeholder engagement and/or participation, and accountability for the responsibilities of different actors, and the resources mobilised.

The Monitoring, Evaluation, Accountability and Learning (MEAL) framework for the NBSAP II was developed to capture the aspirations of the M&E Framework proposed in the document. Therefore, the MEAL integrates the goals and targets, and strengthens the implementation support mechanisms, enabling conditions, responsibility, and transparency, and outreach, awareness, and uptake. The MEAL framework was developed to coincide with the transition into the Post 2020 Global Biodiversity Framework (GBF). The GBF will be supported by a monitoring framework with key outcome indicators, and output indicators.

The objectives of Uganda's MEAL for the NBSAP II are to:

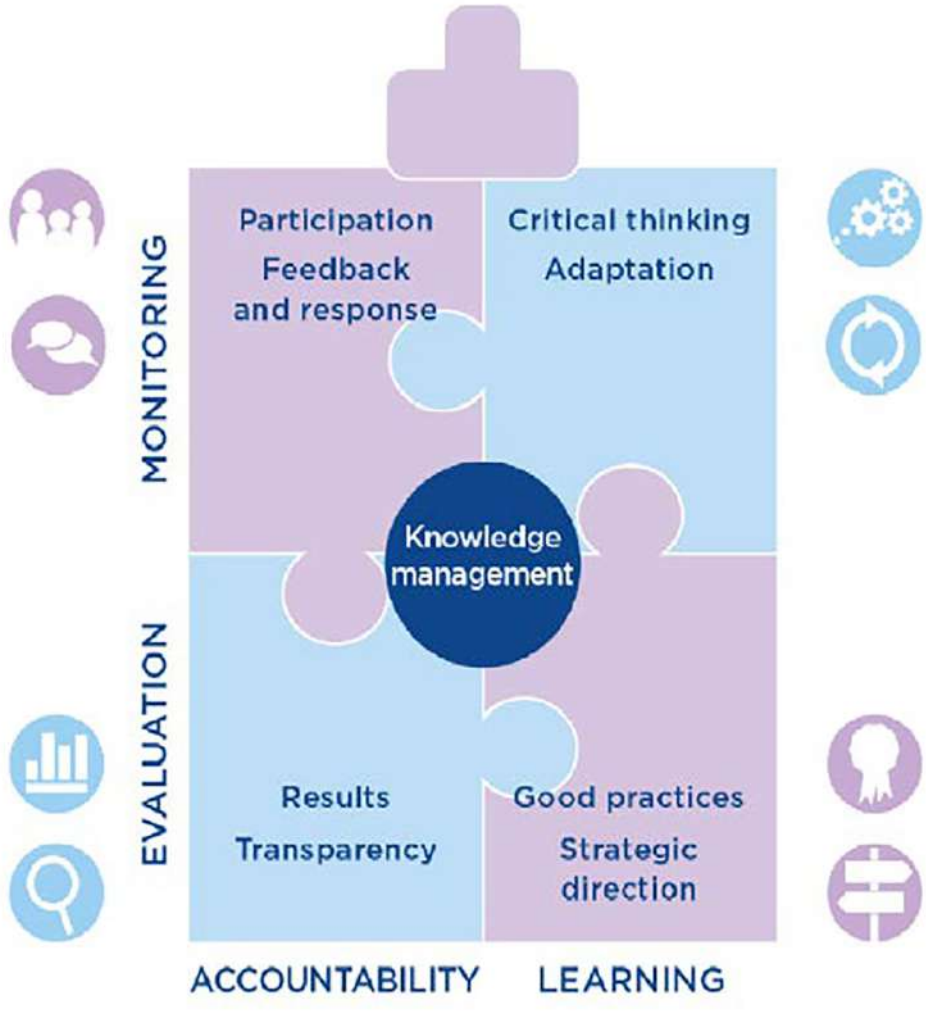
1. continuously monitor and evaluate the level of progress made by different stakeholders towards achievement of each target based on their mandates and responsibilities as described in the NBSAP II strategy and action plan.
2. illuminate areas of progress as well as areas of neglect to allow all stakeholders (public, private, civil society, development partners, IPLCs), especially NEMA and the Technical Committee on Biodiversity Conservation (TCBC) to adjust and strengthen its programmes of intervention as needed.
3. provide a platform to identify gaps, opportunities and weaknesses and a basis for revising the NBSAP II including through stakeholder participation and engagement.
4. promote the continuous involvement and participation of stakeholders in the implementation of NBSAP II strategies, actions, and activities.
5. align the actions outlined in the NBSAP II strategy to Uganda's long-term development framework as articulated in Vision 2040, the medium-term National Development Plans (NDP III and NDP IV), and the Global Biodiversity Framework (GBF).

6. monitor and evaluate the level of mainstreaming of NBSAP II into strategic and other plans of different stakeholders or sectors, including the monitoring of gender issues.
7. monitor, evaluate and provide accountability for financial resources set aside for NBSAP II and to identify funding needs for planned biodiversity activities. This will reveal if scarce natural resources are being effectively allocated and utilised.
8. enhance compilation of national reports to the Convention every four years on biodiversity measures that have been carried out to implement the provisions of the Convention and the effectiveness of these measures. The information generated through regular monitoring and evaluation of NBSAP II will facilitate this process.
9. support learning at stakeholder level including IPLCs, public institutions, private sector, and civil society while also enhancing inter institutional learning synergies, especially under the Programme Based Approaches of planning and implementation of actions.

1.3 Understanding of the MEAL Framework

The starting point for the MEAL Framework is the traditional monitoring and evaluation (M&E) system. Monitoring is a continuous process used to keep project activities/progress on track, identify day-to-day issues through process monitoring, and provide timely information to management and stakeholders for informed decision-making and course correction. Evaluation is a process for ensuring and assessing the effectiveness, relevance, efficiency, impact, and sustainability of interventions. It is performed periodically and its scope differs from case to case—it can be formative or summative.

Figure 1: The MEAL puzzle



Source: MEAL D Pro (2019)

The new components are Accountability and Learning. Accountability is a key feature that makes all concerned programme/project persons accountable. It gives power to beneficiaries, donors, clients, and other relevant stakeholders to hold implementing agencies accountable for their interventions, actions, policies, and priorities. Accountability mechanisms include complaint-handling mechanisms and feedback practices, especially to women, persons with disabilities, minorities, and other marginalised communities. Learning is a key success factor for refining programming by adding value for improvement, revising strategies, and updating plans and frameworks based on key lessons learned, findings and recommendations.

Monitoring, Evaluation, Accountability and Learning (MEAL) is a standard framework as described in the following notes. The MEAL framework is composed of four components; monitoring, evaluation, accountability and learning. Monitoring and evaluation (M&E) are often taken together as the continual and systematic collection of data to provide information about a programme, project, or policy, and the systematic assessment of the design, implementation, and results of an ongoing or completed programme, project or policy, respectively.

In addition to M&E, there is often the need for the programme, project, or policy to use data to demonstrate and improve the effectiveness, efficiency, and outcomes of the project. When the data collection and assessment is done to promote a commitment to balance and respond to the needs of all stakeholders in the activities of the project or programme; including project partners, donors, participants, and the organisation itself. Accountability is embraced by promoting: transparent communication; alignment with standards of donors or partners; responsiveness to stakeholder feedback, ideas, suggestions, complaints, and commitment to providing information on how their input informed the decisions taken; and participation of stakeholders in initiating and/or defining the parameters for conducting MEAL.

Learning refers to the intentional reflection, thoughtful discussion of what is working and not working so as to achieve a stated objective or goal. Learning consists of: incentivising all project work as a learning opportunity by modelling, encouraging, and rewarding learning; establishing a workplace that encourages curiosity, and challenging assumptions in the spirit of learning; embedding learning processes such as the use of checklists to prompt learning, and learning questions in agendas; promoting adaptive management i.e. analysing M&E data promptly and frequently, actively seeking to understand project data, using evidence to inform decisions, adjustments in project design, planning and implementation, and sharing information as a way of informing on organisational or sectoral best practices.

1.4 Scope of the MEAL Framework

The MEAL framework comprises five phases, namely:

Phase 1: designing the logic models. The three logic models are the theory of change (TOC), the Results Framework; and the Logical Framework. These models are the foundation that describes the change the project seeks to achieve, the results targeted, and the steps through which the change will occur and will be measured.

Phase 2: Planning MEAL Activities, the plan, budget, and calendar. There are several tools that are used to implement the MEAL, and all these tools and the accompanying activities need to be included in a work plan showing the calendar, budgets, and responsibility.

Phase 3: Collecting MEAL data consisting of quantitative and qualitative data. Tools will be developed for collecting data to help decision-making and learning in a timely manner. The tools for collecting data will be described in the MEAL framework

Phase 4: Analysis of MEAL data; non-statistical, descriptive, and statistical analyses. The data collected is analysed, and the analysis is the basis for the inference made to achieve the

outcomes of accounting, learning, and reporting of the results.

Phase 5: Using MEAL data. MEAL data can be used internally to inform management and externally to communicate and promote accountability.

The MEAL Framework was developed within the context of implementing the NBSAP II 2015-2025. The MEAL will support reporting for stakeholder institutions implementing components of the Uganda NBSAP II. At the same time, the smart indicators developed will support alignment with the Programme Implementation Action Plans (PIAPs) of the third National Development Plan (NDP III).

The MEAL will contribute to the programme indicators for NEMA, the National Planning Authority (NPA), the Ministry of Water and Environment, and other agencies and institutions under Programme 5 (*Natural Resources, Environment, Climate Change, Land and Water Management*) of the NDP III, as well as the Office of the Prime Minister and the Policy Committee on the Environment. The MEAL will also help streamline the National Reporting and set a benchmark for the NSBAP II and all other subsequent NBSAPs.

2 Logic Models for Uganda's MEAL

2.1 The context of biodiversity conservation in development planning

Uganda implements a Comprehensive National Development Planning Framework (CNDPF) that is anchored on the long-term (30 years) development strategy, the Vision 2040. The medium-term planning occurs through the National Development Plans (NDPs); the current medium-term plan is the NDP III. The CNDPF ends with the Programme Work Plans, and the Budget Estimates that are included in the National Budget and subsequently the Background to the Budget (BTTB) that are presented and published in June every year.

The Vision 2040 highlights several biodiversity and ecosystems that are critical to the success of the Ugandan economy. These include agriculture, forestry, wetlands, water resources, and nature-based tourism while those indirectly linked through environmental management and extraction of resources are manufacturing, minerals, and oil and gas and information (GoU 2013). Even if only one-fifth (8/40) of targets and sub-targets in Uganda's vision 2040 are linked to biodiversity conservation only two targets are directly associated with biodiversity conservation; these are to increase forest cover, by land area percentage from 15% in 2010 to 24% by 2040, and to increase wetland area cover from 8% of land area to 13% by 2040.

In July 2020, the Government started implementing the programme-based approach to planning and programming for the public sector led through the third National Development Plan (NDP III) 2020/21 – 2024/25. Under the NDP III, the Sector, Ministry, Department, Agency and Local Government plans are aligned, and linked to the Programme Based Budgeting System (PBBS). The NDP III is composed of 18 programmes recently increased to 20 Programmes. As shown in Table 1, 13 of the revised 20 Programmes of NDP III have interventions that contribute to biodiversity conservation in the country.

Table 1: The 20 Programmes under NDP III implementation

Programmes	Biodiversity related Actions	Responsible agencies
01 Agro-industrialisation	i. Animal breeding, production, administrative units and research facilities ii. Crop, Livestock and Fisheries and Forestry Research iii. Develop and release market responsive coffee varieties, and support agronomy iv. Seed multiplication centres in prison farms v. Technology incubation and business centres and Incubate 28 technologies; vi. Agricultural extension support, value addition, among others vii. Water for Production Support viii. Acquire additional heavy earth moving and biological equipment to support robust mechanical removal of the mass water weed in all major water bodies. ix. Crop and livestock pests and disease control x. Engage Private Sector to setup pesticide, acaricide, animal vaccine, drug manufacturing xi. Soil management xii. Standards and compliance for products	• NAGRC&DB • NARO • UCDA • Uganda Prisons • MAAIF • MWE • UNRA • Uganda Development Corporation (UDC) • Uganda National Bureau of Standards (UNBS)
02 Mineral Development	i. Strengthen monitoring and inspection of mining operations to minimise negative social and environmental impacts ii. Strengthen capacity to monitor, inspect and enforce health, safety and environmental provisions	Directorate of Geological Surveys and Mines (DGSM)/ LGs/ NEMA/ UNBS/MWE
03 Sustainable Development of Petroleum Resources	i. Enhance Quality Health, Safety, Security and Environment (QHSSE)	UNBS/MEMD/ Petroleum Authority Uganda (PAU), NEMA

04 Manufacturing	ii. Upgrade industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes	MoTIC/ MoTIC
	iii. Formulate, implement and enforce standards, laws, and regulations to facilitate adoption to green manufacturing	
05 Tourism Development	i. Promote natural and cultural/heritage conservation ii. Enhance and maintain ecological integrity of wildlife conservation	UWA, MWE,
07 Private Sector Development		
08 Sustainable Energy Development	i. Develop biogas cogeneration ii. Large hydropower plants initial activities finalised; EIA recommendations implemented iii. Promote use of new renewable energy solutions (solar water heating, solar drying, solar cookers, wind water pumping solutions, solar water pumping solutions) iv. Promote uptake of alternative and efficient cooking technologies (electric cooking, domestic and institutional biogas and LPG) v. Promote use of energy efficient equipment for both industrial and residential consumers	MEMD MEMD MEMD, UECCC MEMD MEMD/ UETCL
09 Integrated Transport Infrastructure and Services		
10 Sustainable Urbanisation and Housing	i. Conserve and restore urban natural resource assets and increase urban carbon sinks ii. Undertake waste to wealth initiatives which promote a circular economy iii. Develop green buildings, risk sensitive building codes and systems to promote energy efficient housing iv. Increase urban resilience by mitigating against risks of accidents, fires and flooding v. Develop and implement integrated physical and economic development plans in the new cities and other urban areas vi. Implement participatory and all-inclusive planning and implementation mechanism to enforce the implementation of land use regulatory and compliance frameworks	MoLHUD/ LGs/ MWE/Urban Authorities NEMA MoWT, MoGLSD,
12 Human Capital Development		
15 Community Mobilisation and Mind-set		
13 Technology Transfer and Development (Innovation, Technology Development & Transfer)	i. Establish a material science, nano and bio science technology centres; space science and aeronautics technology institute and nuclear science, research and development centre ii. Design and implement special Academic programmes for Nano technology, space exploration, nuclear technology, bio sciences, virus research, engineering and others	UNCST UVRI
14 Public Sector Transformation		

17 Regional Development	i. Undertake massive sensitization and awareness campaigns on environment ii. Strengthen compilation of statistics for cross-cutting issues. iii. Harmonize the PFMA, PPDA, LGA, and regulations to improve the Public Financial Management systems (PFMs) iv. Strengthen the alignment of the Programmes, MDA and LG Plans to the NDP III v. Strengthen expenditure tracking, inspection and accountability on green growth	MWE UBOS MoFPED NPA NPA, MoFPED
18 Development Plan Implementation	i. Integrate migration and refugee planning and all other cross cutting issues in national, and local government plans ii. Strengthen implementation, monitoring and reporting of local governments and MDAs on NDP III, and UGGDS	NPA NPA
11 Digital Transformation	i. Coordinate and harmonize the implementation of ICT infrastructure and services; and Environment and human safety ensured	MoICT&NG
06 Natural Resources, Environment, Climate Change, Land and Water Management	i. Coordination, planning, regulation and monitoring of water resources at catchment level ii. Develop and implement integrated catchment management plans for water resources catchment areas iii. Develop and implement wetland and forest management plans iv. Develop a national green growth financing and investment plan v. Demarcate and gazette conserved and degraded wetlands vi. Maintain natural water bodies and reservoirs to enhance water storage capacity to meet water resource use requirements vii. Strengthen enforcement capacity for improved compliance viii. Build partnerships with stakeholders such as Urban Authorities, Uganda Police, on-state actors to enhance compliance to water use and pollution regulations and permit conditions ix. Strengthen conservation, restoration of forests, wetlands and water catchments and hilly and mountainous areas x. Promote rural and urban plantation development and tree planting including the local/indigenous and exotic species xi. Formulate economic and social incentives for plantation forests xii. Promote application of performance based sustainable forest management criteria for all forest sector development aspects and scale up agroforestry in climate smart agriculture xiii. Establish dedicated fuel wood plantations necessary to contribute to achieving or exceeding net biomass surplus levels xiv. Develop wetland management plans to support gazetting and demarcation xv. Restore the natural integrity of degraded wetlands to their ecological functionality xvi. Ensure the protection of rangelands and mountain ecosystems xvii. Implement national targets on threatened/endangered species, restoration of natural habitats, management of invasive alien species with support and participation of local communities and indigenous peoples xviii. Identify and declare special conservation areas to raise the conservation status of areas outside protected areas that are important biodiversity areas xix. Integrate environmental management in all disaster and refugee response interventions xx. Improve the management of Local Governments and private forests xxi. Leverage technology to strengthen enforcement capacity for improved compliance to standard agro-forestry practices.	MWE NPA NFA MWE NEMA LGs MAAIF

	i. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use natural resources and mitigate disasters ii. Increase funding for promoting non-consumptive uses of the natural resources iii. Complete the automation and integration of the Land Management Information System with other system iv. Fast track the formulation, review, harmonization, and implementation of land laws, policies regulations, standards and guidelines v. Develop and implement a framework that reduces adverse per capita environmental impact of cities	NEMA, MWE, NFA MoLHUD NEMA, Urban Authorities MWE, Local Governments UBOS
	vi. Mainstream environment and natural resources management in policies, programmes and budgets with clear budget lines and performance indicators vii. Improve coordination, regulation and monitoring of environment management at both central and local government levels viii. Increase funding for decentralized environment management ix. Promote natural resource accounting to improve the national income measurement x. Undertake economic valuation of selected ecosystems and their services. xi. Integrate natural capital and ecosystem service accounting into the system of national accounts xii. Build sectoral, institutional and local government capacity in natural capital accounting xiii. Support local community-based ecotourism activities for areas that are rich in biodiversity or have attractive cultural heritage sites xiv. Promote payment for ecosystem services, biodiversity offsets and benefit sharing arising from use of biological resources	
16. Governance & Security		
19. Judiciary		
20. Legislature	i. Strengthen Parliament to effectively play its role in the national budget processes for proper implementation of NDPIII priorities	Parliament

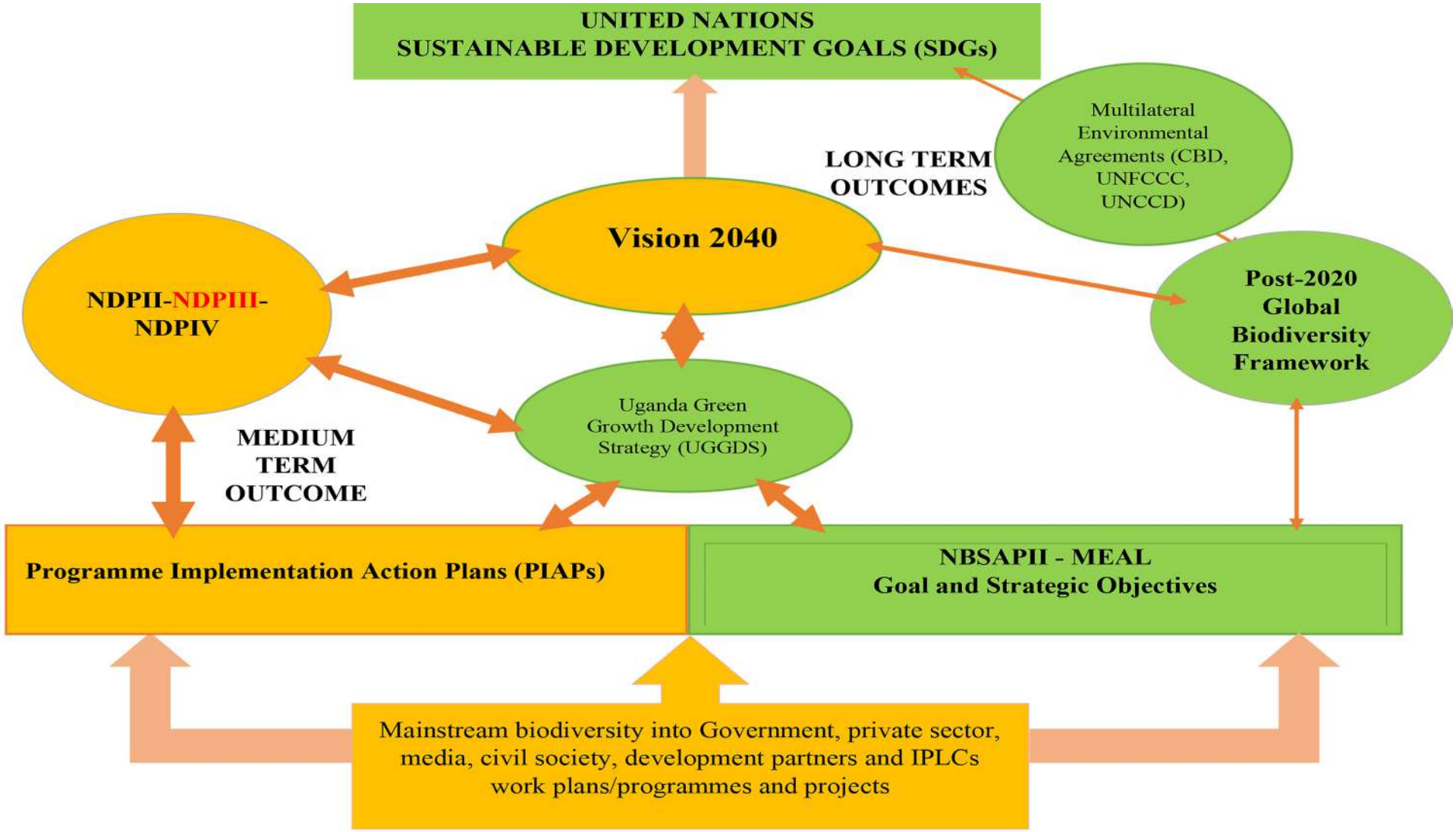
2.2 The Theory of Change

The Theory of Change for the MEAL builds on the conceptual framework of the NBSAP II (NEMA 2016). The conceptual framework embraces aspects of the goal of Uganda's Vision 2040, which is "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years." The starting point are the strategic, and routine interventions of different actions including communities, public sector, private sector, civil society and non-governmental organisations, and development partners. These actions coalesce to contribute to the eight strategic priority areas under NBSAP II. The strategic actions of NBSAP II all contribute to one strategic goal to enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits. When the NBSAP actions are successful they are fully aligned with both the NDP III, based on the interventions highlighted in Table 1 above, and concurrently with the Sustainable Development Goals (SDGs). The cohesion between the national development objectives and the SDGs is because the SDGs were considered in the development of the NDP III, and the conversation on SDGs was also part of the development of the NBSAP II for Uganda.

As shown in Figure 2, the upper level policy components of the Theory of change flows the national policies, laws and regulations represented in the NDP III, on one hand, and the SDGs on the other hand. The aspirations under the Vision 2040 are represented by a headline indicator to increase the per capita income in Uganda to $9,500 by 2040.

Concurrently, the three goals of Global Biodiversity Framework (GBF) are: Reducing threats to biodiversity; Meeting people's needs through sustainable use and benefit-sharing; and Tools and solutions for implementation and mainstreaming. Therefore, the GBF framework works at the overarching layer alongside the Vision 2040 and NDP III, and at the lower layers of implementation to develop and use tools and solutions to not only conserve and sustainable management and use biodiversity, but to do so while meeting the needs of people, and to reduce the threats to biodiversity going forward.

Figure 2: Theory of Change for the MEAL



2.3 Results Framework

The results framework presented in Figure 3 below shows the framework of interventions to be undertaken by the responsible institutions in implementation of Uganda's NBSAP II. The results framework is organised along the eight strategic areas identified for the NBSAP II, and the implementation actions are presented as the intermediate outputs that contribute to the eight strategic objectives. The results framework contributes to the goal of the NBSAP II, which is to enhance biodiversity conservation, management, and utilisation and fair sharing of the benefits.

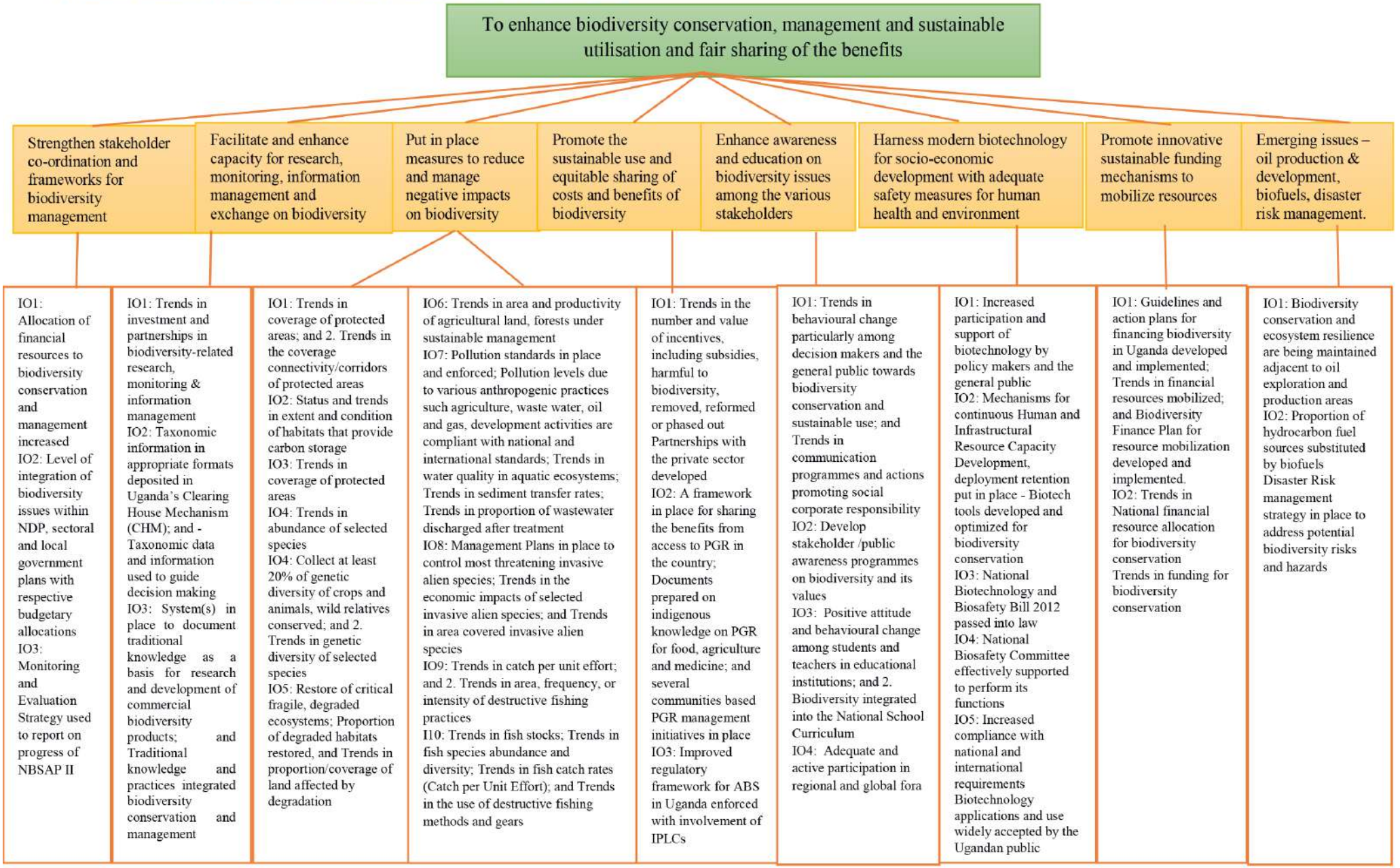
The results framework is both a planning and management tool that provides the basis for monitoring & evaluation. It provides a program-level framework for managers to monitor the achievement of results and to adjust relevant programs and activities when necessary (USAID 2010). It gives the reader an instant idea of what a program is trying to achieve. Results Framework focuses specifically on impact and the outcomes of the work done through the program. The results framework shows how the achievement of strategic objectives, and outputs (IRs) leads to the achievement of the next higher order of objectives, ultimately resulting in the goal of the programme. Whereas the results framework is also a high-level planning document, it is more aligned to the key implementation actions to be undertaken by actors unlike the TOC, which provides an overarching framework of the plan or the logical framework which provides the layout for monitoring and evaluating the plan. The statements in the RF articulate the project's hierarchy of objectives, describing the causal (or vertical) logic of the project, and therefore, the logic underlying the plan is often easier to understand at a glance in the results framework.

The results framework of the MEAL contributes to eight strategic objectives:

1. To strengthen stakeholder coordination and frameworks for biodiversity management;
2. To facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity;
3. To put in place measures to reduce and manage negative impacts on biodiversity;
4. To promote the sustainable use and equitable sharing of costs and benefits of biodiversity;
5. To enhance awareness and education on biodiversity issues among the various stakeholders;
6. To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment;
7. To promote innovative sustainable funding mechanisms to mobilise resources for implementing NBSAP II; and,
8. Emerging issues of oil and gas production and development, biofuels, and disaster risk management.

Below the strategic objectives are the Intermediate outputs (IO) linked with the strategic objectives. The intermediate objectives are linked to the indicated and the implementation outputs that are included in the Performance Management Plan.

Figure 3: Results Framework for the MEAL for the NBSAP II



2.4 Logical Framework for NBSAP II (indicators, assumptions)

The logical framework is shown in Tables 2, 3, 4a & 4b, 5, 6, 7, 8 and 9. The logical framework shows the goal, intermediate outcome, output and activities and their matching indicators, means of measure and assumptions. The indicators are measures used to track progress, reflect change or assess project performance. The measurement methods identify how the project will gather the data to track the progress of the indicators. The assumptions are especially important in the Log-frame because they complement the vertical logic of the hierarchy of objectives by introducing the horizontal logic of the NBSAP II.

The vertical logic would always hold true: activities result in outputs, outputs result in intermediate results, and intermediate outcomes into goals. Making the assumptions explicit provides a reality check by pointing out that vertical logic succeeds if and only if the assumptions at each level of the Log-frame hold true.

The goals, intermediate outcomes, outputs and activities in the vertical logic, and the indicators in the horizontal logic are compiled based on the NBSAP II, and Sixth National Report (6NR). The means of measure and the assumptions were based on the MEAL development. The means of measure were based on synthesis of the 6NR and the biodiversity reports collated. The means of measure and assumptions were also based on discussions with the Technical Committee on Biodiversity Conservation (TCBC) and other biodiversity stakeholders in the country.

Table 2: Logical framework for the SO1: Strengthen stakeholder coordination and frameworks for biodiversity management

	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: Allocation of financial resources to biodiversity conservation and management increased	Increased financial resources allocated to biodiversity conservation actions in line with the NBSAP II	Biodiversity Expenditure Reviews as part of the National Reports, and NSOER	Availability of resources
Output: Put in place measures to enhance inclusive and equitable stakeholder participation and coordination	Review, update and initiate a participatory and inclusive process of implementation of NBSAP	Annual reports of stakeholder institutions, NSOER, and National Reports	Availability of resources, and supporting project partners.
Activities			
Capacity of the biodiversity coordination mechanism strengthened	Collaboration and information flow among stakeholders improved	Annual reports of stakeholders, NSOER, National Reports	Regular annual reporting among NBSAP II stakeholders
An integrated biodiversity management policy framework developed	A National Biodiversity Policy Framework in place	Updated National Environment Management Policy	Update of the National Environment Management Policy completed
Relevant stakeholders at different levels, and establish/ reinforce networks and task forces, including especially on gender and women's empowerment mapped.	Stakeholders and stakeholder groups are identified and established	Gender disaggregated database of stakeholders	Availability of resources to create database as part of ongoing projects
Capacity building sessions on the NBSAP, gender and biodiversity, and implementing conservation plans and initiatives with a gender perspective across the environmental sector conducted	Number of women and men trained	Training reports	Appropriation of resources to capacity building among stakeholders
Government and other relevant stakeholders lobbied to put in place a coordination mechanism for implementation of Multilateral Environmental Conventions	A coordinated mechanism put in place for enhanced information sharing across sectors	Annual reports of the secretariat for implementation of the NBSAP	Appropriation of resources
Biodiversity and ecosystem services valuation tools to quantify and monitor the environmental, economic and social value of biodiversity developed and utilised	Integration of biodiversity issues in the NDP, sectoral and District Development Plans	Programme and District Development Plans with biodiversity values addressed.	Appropriation of resources
Guidelines for mainstreaming biodiversity into national, sectoral and district plans developed	Biodiversity issues planned and budgeted for at National and Local levels		
	Guidelines report updated	Appropriation of resources	

Biodiversity and ecosystem services valuations to mainstream biodiversity into decision making and to develop a business case for biodiversity undertaken and utilised	Biodiversity issues planned and budgeted for at National and Local levels	System of Environmental Economic Accounting with biodiversity updated at the National Statistical Office, UBOS.	Availability of resources, and supporting project partners.
Mapping of the status and trends of ecosystems undertaken	Number of maps produced and disseminated	Reports and maps developed	Availability of resources, and supporting project partners.
Intermediate outcome 2: Level of integration of biodiversity issues within NDP, sectoral and local government plans with respective budgetary allocations	Increased integrated of biodiversity issues in NDPs, Programme Plans, and District Development Plans	Biodiversity Institutional and Policy Review report updates	Availability of resources, and supporting project partners.
Output: Mainstream biodiversity in NDP, sectoral and district plans	Biodiversity mainstreamed among the green growth indicators of the NDP III, and for all Programmes.	Biennial review reports	Availability of resources, and supporting project partners.
Activities			
Develop a gender responsive guideline for implementing NBSAP II	• Gender-responsive guidelines and budgets in place (MGLSD, NEMA)	Guidelines document updates	Availability of resources
Produce and disseminate NBSAP II to stakeholders	• Number of stakeholders with NBSAP II; and Devise a monitoring and feedback mechanism on NBSAP information on consumption (NEMA)	NBSAP II document disseminated to stakeholders	The NBSAP II was successfully completed, printed and distributed
Facilitate the mainstreaming of NBSAP II actions in national, sectoral and district plans and programmes	• Key issues in NBSAP II mainstreamed and budgeted for in national, sectoral and district plans and programmes; and Equitable and gender responsive budgets and allocation (NEMA, NPA, LGs)	Field reports of process of facilitation of NBSAP II mainstreaming into Plans and Programmes	Availability of resources
Undertake regular cross-sectoral consultations on NBSAPII implementation	• Revised strategies for implementation of NBSAP as appropriate (NEMA)	NBSAP II stakeholder consultation reports	Availability of resources, particularly staff time.
Intermediate outcome 3: Monitoring and Evaluation Strategy used to report on progress of NBSAP II	Monitoring Evaluation, Adaptation and Learning (MEAL) Framework developed	MEAL Framework document signed by Authority	Availability of resources
Output: Carry out periodic monitoring and evaluation of NBSAPII	**Annual monitoring, mid-term and final evaluation of the NBSAP II, and the National Reporting Reports**	**Monitoring reports, and evaluation report documents.**	**Availability of resources**
Activities			
Develop and implement a gender responsive NBSAPII Monitoring and Evaluation strategy with SMART indicators	• A Monitoring and Evaluation Strategy in place; and Disaggregated data and gender-specific indicators exist as part of M&E (NEMA and MGLSD)	Annual monitoring reports component on gender response and SMART indicators	Availability of resources, and staff time
Undertake Monitoring and Evaluation of the implementation of NBSAPII	• Periodic monitoring and evaluation of NBSAPII (NEMA and NPA)	Monitoring reports, and evaluation report documents.	Availability of resources

Table 3: Logical framework for the SO2- Facilitate and build capacity for research, monitoring and information management

	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment
Inter-mediate outcome 1&2: Improve management effectiveness of Protected Areas	At least 17 percent of terrestrial and inland water ecosystems in Uganda are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas for socio-economic benefit of the population	Annual reporting for the MWE, National Biomass Surveys, surveillance reports MAAIF	Inclusion in annual work plans
The outputs: Effectively and equitably manage protected areas in Uganda	Trends in effective and equitable management of PAs.	Annual reports of PAs (UWA, NFA), MTWA, MWE	Available resources to collate and compile reports
Activities			
Develop and implement participatory PA management plans	• Number of PA management plans developed and implemented (UWA, NFA, Local governments)	UWA and NFA annual reports	Collation and compilation completed annually.
Promote protected areas as core drivers for nature-based tourism development in the local economy	• Number of visitors to protected areas; Tourism revenue generated form protected areas; and -Tourism related infrastructure in place (UWA and NFA)	UWA and NFA annual reports	Collation and compilation completed annually.
Establish/maintain viable wildlife/biodiversity corridors with respect to community safeguards	• Number of wildlife/biodiversity corridors established through community-government dialogue (UWA, NFA and Local Governments)	UWA and NFA annual reports, NGOs – WCS, WWF, AWF, etc.	Availability of resources to collate and compile
Support gender-responsive alternative livelihood options for communities adjacent to Pas	• Number of women and men with livelihood improvement initiatives in place; and Trends in revenue shared with communities (UWA, NFA, MGLSD)	UWA and NFA annual reports	Collation and compilation completed annually.
Identify and implement PA networks to conserve ecologically sensitive vegetation types, habitats, species and genetic diversity	• Number of PA networks with well-protected ecosystems, species and genetic resources (UWA, NFA and Local Governments)	UWA and NFA annual reports, NGOs – WCS, WWF, AWF, etc.	Availability of resources to collate and compile
Mitigate human wildlife conflicts	• Number of incidences of human wildlife conflicts in previously vulnerable areas; and Number of human wildlife mitigation initiatives in place (UWA)	UWA and NFA annual reports, NGOs – WCS, WWF, AWF, etc.	Availability of resources to collate and compile

Strengthen partnerships with adjacent communities to PAs for mutual benefits (Supporting REDD+)	• Number of partnerships with community groups	UWA, NFA annual reports, NGOs – WCS, WWF, AWF, ECOTRUST, IUCN, etc.	Availability of resources to collate and compile
Intermediate outcomes 3$4: Status and trends in extent and condition of habitats that provide carbon storage Trends in coverage of protected areas	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15%of degraded ecosystems	MWE/CCD, UWA and NFA annual reports, NGOs – ECOTRUST, WWF etc.	Availability of resources to collate and compile
Output: Implement climate change mitigation and adaptation for biodiversity conservation including disaster risk reduction from climate change impacts	Ecosystem resilience enhanced including through community resilience, to climate change	MWE/CCD, UWA and NFA annual reports, NGOs – ECOTRUST, WWF etc.	Availability of resources to collate and compile
Activities			
3.2.1 Reduce deforestation and increase timber stocks countrywide to reduce pressure on current stocks, especially in natural forests	• Reduced emissions from deforestation; Reduced emissions from forest degradation; Conservation of forest carbon stocks; Sustainable management of forests; Enhancement of forest carbon stocks; Improved livelihoods of adjacent communities	FSSD, MWE/CCD, UWA and NFA annual reports, NGOs – ECOTRUST, WWF etc.	Availability of resources to collate and compile
3.2.2 Develop guidelines and capacities for ensuring gender-responsive, equitable and transparent implementation of REDD+ in partnership with CSOs, including women's organisations	• Guidelines developed; Numbers of beneficiaries of REDD+ trained	FSSD, MWE/CCD, UWA and NFA annual reports, NGOs – ECOTRUST, WWF etc. LGs	Availability of resources to collate and compile
3.2.3 Enhance carbon stocks and storage by mainstreaming climate change into the REDD+ strategy as well as in sector policies, plans and projects	• Number of sector policies and plans that have mainstreamed climate change	MWE/CCD, NPA, MoFPED, etc.	Availability of resources to collate and compile
3.2.4 Support afforestation, tree planting and re-forestation activities at all levels	• Acreage afforested; and Plant a least 200,000 ha trees annually to contribute to national target in Vision 2040	NFA, FSSD, MWE/CCD, and NPA etc.	Availability of resources to collate and compile
3.2.5 Promote and support restoration of degraded wetlands	• Wetland areas restored; and Restore at least 11,250 ha annually to contribute to the achievement of the national target in Vision 2040	MWE, NEMA annual reports, NGOs – IUCN, Nature Uganda etc.	Availability of resources to collate and compile

3.2.6 Enhance biodiversity and ecosystems' resilience to climate change especially in biodiversity hotspots	• Number of Policy makers, technocrats and local communities appreciate the linkage between biodiversity conservation and climate change	MWE/CCD, NPA, MoFPED, Parliament of Uganda	Availability of resources to collate and compile
3.2.7 Establish buffer zones for protection of critical conservation areas with high biodiversity within Pas	• Number of protected areas with buffers • Area under Buffers	UWA and NFA annual reports, NGOs – WCS, WWF, ECOTRUST etc.	Availability of resources to collate and compile
3.2.8 Monitor and control bush burning in fire prone areas	• Number of fire control mechanisms put in place • Trends in acreage affected by fires	UWA and NFA annual reports, NGOs – WCS, WWF, Nature Uganda etc.	Availability of resources to collate and compile
3.2.9 Collect and store diverse gene pools, including through community and women-led seed banks as a basis of genetic adaptation to climate change and for enhancing food and nutritional security	• Number of accessions of drought resistant crop varieties in adequate quantities in gene banks/seed banks	NARO/PGRC, MAAIF	Availability of resources to collate and compile
Intermediate outcome 5: Trends in abundance of selected species	The extinction of known threatened species plants and animals inside and outside protected areas prevented and their conservation status improved	MTWA, UWA and NFA annual reports, NGOs – WCS, IUCN etc.	Availability of resources to collate and compile
Output: Identify and implement measures for protection of threatened and vulnerable species	Extinction of threatened species prevented	MTWA, UWA and NFA annual reports, NGOs – WCS , IUCN etc.	Availability of resources to collate and compile
Activities			
Protect threatened, endemic and vulnerable species inside and outside protected areas	• Reduction in the number nationally extinct, threatened and vulnerable species; Number of Species Management Plans under implementation; Number of previously extinct species reintroduced (UWA, NEMA, NFA, Local Governments)	MTWA, UWA and NFA annual reports, NGOs – WCS, IUCN etc.	Availability of resources to collate and compile
Support ex-situ conservation of plant and animal resources	• Number of functional ex situ institutions (NARO)	NARO, UWCEC, NAGRC&DB	Availability of resources to collate and compile
Engage local communities including women, men and youth in curbing destructive use of threatened plant species	• Number of strategies developed and implemented; and Number of women and men participating in enforcement measures.	NARO/PGRC, MAAIF, NFA, UWA, NGOs – Nature Uganda,	Availability of resources to collate and compile

Effectively combat poaching and illegal wildlife trade and trafficking through strengthening law enforcement	• Deterrent laws in place; Number of points of entry and exit controlled; Number of cases reported and successfully prosecuted; and Number of well trained, motivated, equipped and coordinated law enforcement personnel (UWA and MTWA)	Ministry of Internal Affairs (Police and Customs), URA, UWA, MTWA, MWE/NFA, NEMA Annual reporting	Compilation and reporting available
Strengthen the capacity of CITES Management Authority and CITES Competent Authorities	• Number of cases reported and successfully prosecuted; and Number of trophies confiscated at border points (MTWA)	Ministry of Internal Affairs (Police and Customs), URA, UWA, MTWA, MWE/NFA, NEMA Annual reporting	Compilation and reporting available
Strengthen PA institutional capacity and coordination for effective monitoring of wildlife	• Availability of up to date data on wildlife species trends (UWA)	MTWA, UWA, NFA annual reporting	Compilation and reporting available, resources available
Intermediate outcome 6&7: 1. Collect at least 20% of genetic diversity of crops and animals, wild relatives conserved; and 2. Trends in genetic diversity of selected species	The genetic diversity of cultivated plants and domesticated animals including their wild relatives and other socio-economically valuable species conserved	NARO, MAAIF, NFA, UWA, NAGRC& DB, NGOs – Nature Uganda,	Availability of resources to collate and compile
Output: Put in place measures for protection of genetic diversity cultivated plants, domestic animals	Loss of genetic diversity of cultivated plants and domesticated animals minimised	NARO, MAAIF, NFA, UWA, NGOs – Nature Uganda,	Availability of resources to collate and compile
Activities			
Collect through local and gender-responsive approach information on availability of plant and animal germplasm	• Information on germplasm documented (NARO, MAAIF)	NARO, NAGRC&DB, Universities, Biodiversity databank, NGOs – WCS Annual and biennial reporting	Compilation and reporting timely, availability of resources
Support national and local repositories for plant and animal genetic resources	• Fully functional national and local repositories for plant and animal genetic resources (NARO and MAAIF)	NARO, NAGRC&DB, Universities, Biodiversity databank Annual and biennial reporting	Compilation and reporting timely, availability of resources
Identify, collect and conserve indigenous species and varieties	• Important species and varieties are adequately conserved (NARO and MAAIF)	NARO, NAGRC&DB, Universities, Biodiversity databank Annual and biennial reporting	Compilation and reporting timely, availability of resources
Reintroduce germplasm of species extinct in the country	• Number of germplasm reintroduced (NARO, MAAIF)	NARO, NAGRC&DB, Universities, Annual and biennial reporting	Compilation and reporting timely, availability of resources
Strengthen human and infrastructural capacity for genetic resources conservation and management	• Genetic resources conservation and management is effective (NARO, MAAIF)	NARO, NAGRC&DB, Universities, Annual and biennial reporting	Compilation and reporting timely, availability of resources
Educate local farmers including women, men and youth on the importance of preserving genetic diversity	• Number of local community groups, women, men and youth trained on issue, risks and benefits of genetic diversity (NARO, MAAIF)	NARO, NAGRC&DB, Universities, Annual and biennial reporting. LGs, MAAIF, NEMA	Compilation and reporting timely, availability of resources

Intermediate outcome 8, 9 & 10: 1. Restore of critical fragile, degraded ecosystems; 2. Proportion of degraded habitats restored, and 3. Trends in proportion/coverage of land affected by degradation	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero to reduce degradation	NFA, UWA annual reports, biomass surveys	Compilation timely, available resources
Output: Institute and implement measures to stop further loss of natural habitats	Degraded natural habitats restored	NEMA – NSOERs, MWE/FSSD – Annual reports, MTWA and UWA Annual reports	Compilation timely, available resources
Activities			
Identify, map and prioritise degraded habitats including forests and wetlands	• Trends in extent of selected forests and wetlands (FSSD, NFA, WMD, NEMA, Local governments)	NFA- Biomass surveys, MWE/WMD – survey reports, NEMA monitoring reports/ NSOER	Availability of resources
Assess the rate of conversion of the degraded/ threatened habitats by human activities	• Trends in the proportion of natural habitats converted (NFA, FSSD, NEMA)	NFA- Biomass surveys, MTWA/ UWA monitoring and annual reports, MWE/WMD – survey reports, NEMA monitoring reports/ NSOER	Availability of resources
Estimate the productivity of the degraded/ threatened habitats	• Trends in primary productivity (Academia)	Universities, MAAIF, NFA, UWA technical feasibility studies	Inclusion into work plans, research interest
Estimate the proportion of land affected by desertification	• Trends in the proportion of land affected by desertification (Academia and MAAIF)	Universities, MAAIF, technical feasibility studies	Inclusion into work plans, research interest of donors
Promote awareness on regulations that protect fragile ecosystems	• Increased awareness of laws and regulations regarding the protection of fragile ecosystems (NEMA and Local governments)	NEMA/ Biodiversity stakeholders, NFA, MWE, annual monitoring reports	Timely compilation
Sensitise policy makers on drivers of habitat loss, and for support to reverse the rate of habitat loss	• Number of policy makers advocating for protection of ecosystems (NEMA, NFA, UWA, WMD, FSSD)	Parliament of Uganda reporting, NEMA-NSOER, annual reports, MWE and MTWA annual reports	Inclusion into collated data, timely compilation
Put in place species recovery plans for the degraded/threatened habitats	• Extinction risk trends of habitat dependent species (UWA, NFA and Local governments)	NFA- Biomass surveys, MTWA/ UWA monitoring and annual reports, MWE/WMD – survey reports. NGOs – WCS, Nature Uganda, IUCN, etc.	Availability of resources
Restore and safeguard ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being	• Vulnerable areas restored and protected	MWE, NEMA, NFA, UWA, MTWA – annual reports, surveys. Technical studies by universities and other researchers.	Inclusion into collated data, timely compilation
Develop mechanisms for fair and equitable sharing of costs and benefits of using wetlands	• Number of cost and benefit sharing mechanisms implemented (NEMA and WMD)	NEMA, MWE/WMD, Biodiversity stakeholders – NGOs and Communities.	Inclusion in work plan, availability of resources

Table 4a: Logical framework for the SO3 - To put in place measures to reduce and manage negative impacts on biodiversity

	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied	Trends in investment and partnerships in biodiversity-related research, monitoring & information management	Annual monitoring and inventory reports	Availability of resources
Output: Support research in strategic areas of biodiversity conservation and sustainable use	Research, knowledge and information generation supported and used regularly.	Period reports of stakeholders	Support was provided
Activities			
Support innovative research, science and technology in the management of biodiversity with particular focus on value addition, product development and innovation with due considerations of women, men and youth	• Industrial development and commercialization of innovations and new biodiversity–based products.	Annual monitoring and inventory reports	Availability of resources
Support Product testing and quality assurance and standards development	• Standards developed for new biodiversity – based products	Updated standards compendium	Completion of standards development, and resources
Undertake taxonomic research to improve knowledge of little known taxa (especially those which may have commercial value)	• Research initiatives on underutilised taxa undertaken.	Biodiversity research inventory updates	Availability of resources
Develop sector research priorities in biodiversity	• Biodiversity research agenda (guideline) in place	Guideline document	Stakeholder engagement undertaken
Promote research and bioprospecting on PGR, including medicinal plants	• Number of functional biodiversity research Institutions with identified priority research areas in biodiversity.	Biodiversity research inventory updates	Availability of resources
Enhance national capacity in information management and research which supports biodiversity conservation	• Discoveries of valuable natural products; and Number of innovations/ patents made • Infrastructure for biodiversity information management; and Human resource in place	Annual reporting from biodiversity stakeholder institutions, and Biodiversity research inventory updates	Availability of resources

Ensure that Uganda benefits from international cooperation and opportunities for information exchange and support in the field of biodiversity at the local, national, regional and international levels	• Research grants received; Number of programmes funded; and Level of funding and information exchange on biodiversity achieved (NEMA)	Contracts, MOUs, Agreements signed as reported in annual stakeholder reports.	New partnerships, funding and collaborations were achieved
Inter-mediate outcome 2: Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied	Taxonomic information in appropriate formats deposited in Uganda's Clearing House Mechanism (CHM); and - Taxonomic data and information used to guide decision making	Review of the CHM for updates	New opportunities for update and use of the CHM occurred
Output: Build capacity for information management and exchange in taxonomy	Capacity for information management and exchange in taxonomy in Universities and Research Institutions built	Annual Biodiversity Inventory updates reports	Availability of resources
Activities			
Conduct awareness raising on the role of taxonomy in biodiversity conservation in public and private institutions	• Role of taxonomy in biodiversity conservation well understood in relevant institutions	Stakeholder engagement surveys	Availability of resources
Create awareness on the application of taxonomic information in many production sectors of the country such as agriculture, trade, health, development and regulatory agencies as well as local communities	• Number of production sectors beginning to use taxonomic information	Stakeholder engagement surveys	Availability of resources
Support institutions with taxonomic data and information (through funding, increased personnel or better infrastructure) to make this information easily available to end -users	• Mechanisms for taxonomic data acquisition and sharing are in place and being used	Stakeholder engagement surveys	Availability of resources
Support and train women, including women's indigenous groups and women's organizations, on taxonomy, taxonomic data, information	• Number of women taxonomists or para-taxonomists trained	Stakeholder engagement surveys	Availability of resources
Develop taxonomic knowledge bases of biodiversity in formats that are accessible to women and men and other end users	• Number of kits distributed to women and men	Stakeholder engagement surveys	Availability of resources
Improve taxonomic infrastructure and tools to provide adequate taxonomic information	• Improved taxonomic infrastructure and tools in place in relevant institutions	Stakeholder engagement surveys	Availability of resources
Establish Centre(s) of Taxonomic excellence	• A centre of excellence for taxonomy established	Facility established and operations in place with staff	Availability of resources

Undertake human resource capacity development in taxonomy at all levels and retain taxonomists with job descriptions in their institutions	• Increased number of taxonomists in the country	Stakeholder engagement surveys	Availability of resources
Provide incentives/employment opportunities to women and men graduates with taxonomic backgrounds to retain them e.g. prioritising taxonomy in Environmental Impact Assessments (EIA)	• Number of women and men graduates employed	Stakeholder engagement surveys	Availability of resources
Inter-mediate outcome 3&4: Traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels	1. System(s) in place to document traditional knowledge as a basis for research and development of commercial biodiversity products 2. Traditional knowledge and practices integrated biodiversity conservation and management	National State of Environment Reports, and National Reports	IPLCs issues integrated into the NSOER and National Reporting, and availability of resources
Output: Strengthen the role of indigenous peoples and local communities in biodiversity conservation and management including gender considerations	Traditional knowledge and practices in biodiversity management integrated through action-learning practices	National State of Environment Reports	IPLCs issues integrated into the NSOER
Activities			
Promote the role of traditional knowledge, innovations and practices in the management and use of biodiversity	• Indigenous knowledge and practices are being widely applied in biodiversity conservation.	Stakeholder engagement surveys	Availability of resources
Document traditional knowledge and practices of women and men that promote conservation and sustainable use of biodiversity e.g. in herbal medicine	• Groups and communities whose IK and TK, respectively, have been integrated during NBSAP implementation	Stakeholder engagement surveys	Availability of resources
Develop Community Action Plans for biodiversity conservation in strategic areas	• Sector-based Community Action Plans for biodiversity conservation	Stakeholder engagement surveys	Availability of resources
Develop access and benefit sharing arrangements with indigenous peoples and local communities, with respect to intellectual property rights	• Access and benefit sharing arrangements with indigenous and local communities; and Number of MTAs and MOUs signed with local communities, IPLCs, women and women's groups (UNCST)	Stakeholder engagement surveys	Availability of resources

Table 4b: Logical framework for the SO3- To put in place measures to reduce and manage negative impacts on biodiversity

Strategic objective	Indicators	Means of measurement	Assumptions
The goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: Trends in area and productivity of agricultural land, forests under sustainable management	Management plans are in place and implemented for areas under agriculture, aquaculture and forestry	Annual reports of MAAIF, NFA, FSSD (MWE)	Availability of resources and technical support
Output: Sustainably manage areas under agriculture, aquaculture and forestry in an equitable manner	Management of agricultural practices, and forests for biodiversity conservation and sustainable use improved	Annual reports of MAAIF, NFA, FSSD (MWE)	Availability of resources and technical support
Activities			
Promote agricultural practices which minimise the negative impacts of agricultural production on biodiversity and ecosystem functioning	• Measures put in place to ensure a win-win situation for agricultural production and biodiversity conservation	Annual reports of MAAIF/ NSOER	Availability of resources and technical support
Promote agro-forestry practices among local communities with particular focus on women and men farmers (supporting REDD+)	• Significant increase in area and distribution of agro-forestry practices in the country; and Number of women and men engaged in agroforestry practices	District Annual Reports/ NSOER, FSSD Surveys	Availability of resources and technical support
Strengthen tenure rights, including of women farmers to support sustainable land management (SLM) practices that conserve agro-biodiversity	• Significant increase in area and distribution of SLM practices in the country	Annual Reports MAAIF, Districts.	Availability of resources and technical support
Promote sustainable management practices to support the conservation and sustainable use of biodiversity in forests	• Mechanisms put in place to protect biodiversity in forests	Annual reports NFA, FSSD, Districts	Availability of resources and technical support
Support local communities including IPLCs, women and men to diversify their livelihoods through biodiversity friendly enterprises which ease pressure on the resource base	• Livelihoods initiatives put in place	Annual reports NEMA, NSOER	Availability of resources and technical support
Promote women's enterprises to enhance their participation and leadership in biodiversity conservation	• Number of women's enterprises promoted	Annual reports NEMA, NSOER	Availability of resources and technical support

Implement forest management planning that zones and protects timber production to meet demand whilst restocking for future needs (supporting REDD+)	• Reduced emissions from deforestation; Reduced emissions from forest degradation; and -Conservation of forest carbon stocks	Annual reports NFA, FSSD, Districts	Availability of resources and technical support
Improve forest timber harvesting and utilisation technologies (supporting REDD+)	• Reduced emissions from deforestation; Reduced emissions from forest degradation; and Conservation of forest carbon stocks	Annual reports NFA, FSSD, Districts	Availability of resources and technical support
Intermediate outcome 2, 3, 4, 5 & 6: 1. Pollution standards in place and enforced; 2. Pollution levels due to various anthropogenic practices such agriculture, waste water, oil and gas, development activities are compliant with national and international standards; 3. Trends in water quality in aquatic ecosystems; 4. Trends in sediment transfer rates; and 5. Trends in proportion of wastewater discharged after treatment	Pollution levels in critical urban ecosystems has been brought to levels that are not detrimental to ecosystem function and biodiversity	Annual monitoring and reporting – MWE, NFA, NEMA, NWSC, Cities and Municipal Authorities, and Districts	Availability of resources and technical support
Output: Reduce pollution levels that are detrimental to biodiversity	Management of pollution levels and waste in vulnerable ecosystems monitored and supported	Annual monitoring and reporting – MWE, NEMA, NWSC, Cities and Municipal Authorities, and Districts	Availability of resources and technical support
Activities			
Monitor and enforce compliance to effluent standards requirements	• Trend in pollution levels; Management; and Enhanced capacity (infrastructure, human resources and financial) to detect and manage pollution in place (WQMD, WRMD, Municipalities authorities, and City Authorities)	Annual monitoring and reporting – MWE, NEMA, NWSC, Cities and Municipal Authorities	Availability of resources and technical support
Monitor the impact of agrochemicals on selected pollinators	• More data is available on the impact of agrochemicals on pollinators (NARO and MAAIF)	Annual reporting MAAIF, NFA, NEMA	Availability of resources and technical support
Manage all forms of waste in an effective and efficient manner to reduce its negative impact on the environment, including through local-level waste management and recycling initiatives	• Effective and efficient options for managing all forms of waste are under implementation; Increased number of waste management/ recycling options being adopted; and Number of new facilities operating (or planned) (NEMA)	NEMA, MWE, NWSC, Cities and Municipal Authorities	Inclusion in work plans, availability of resources
I**ntermediate outcome 7, 8 & 9: 1**. Management Plans in place to control most threatening invasive alien species; 2. Trends in the economic impacts of selected invasive alien species; and 3. Trends in area covered invasive alien species	Invasive alien species harmful to biodiversity, socio-economic development and human health are managed to prevent their introduction and establishment	Monitoring reports – MAAIF, NFA, NEMA, NARO	Inclusion in work plans, availability of resources

Outputs: Control IAS that have adverse impacts on biodiversity and human health and gender-differentiated livelihoods	Eradication and control measures for alien invasive species put in place	Monitoring reports – MAAIF, NFA, NEMA, NARO	Inclusion in work plans, availability of resources
Activities			
Develop and implement management plans to prevent the establishment and introduction of alien invasive species	• National guidelines on invasive species in place; Adequate measures to contain alien invasive species in vulnerable ecosystems are in place; An inventory of alien invasive species; and Management plans developed and implemented (NARO, NEMA, MAAIF, WMD, NFA and Local governments)	Monitoring reports – MAAIF, NFA, NEMA, NARO	Inclusion in work plans, availability of resources
Eradication or control existing alien invasive species	• Capacity (personnel, equipment, human resource) built for monitoring alien invasive species; Trends in alien invasive species.	Monitoring reports – MAAIF, NFA, NEMA	Inclusion in work plans, availability of resources
Intermediate outcome 10 & 11: 1. trends in catch per unit effort; and 2. Trends in area, frequency, or intensity of destructive fishing practices	The impacts of fisheries activities on fish stocks, species and ecosystems are within safe ecological limits	Annual Monitoring reports – Naira, MAAIF, LGs	Inclusion in work plans, availability of resources
Outputs: Put in place measures to control illegal fishing and over exploitation	Fisheries resources sustainably managed	Annual Monitoring reports – Naira, MAAIF, LGs	Inclusion in work plans, availability of resources
Activities			
Put in place effective control measures to manage fishing and alien fish species such as the Nile Perch Salvinia molesta including promoting awareness of existing regulations	• Trends in fish catch; and Measures put in place to control alien fish species (MAAIF)	Annual reports MAAIF, Naira	Availability of resources
Put in place and implement control measures for the Water Hyacinth, and the congress weed	• Reduced surface area under Water Hyacinth, congress weed and *Salvinia molesta*	Annual reports MWE, MAAIF	Availability of technology, resources
Promote sustainable aquaculture for local communities including women and men for socio-economic development	• Trends in farmers (women and men) and local community groups engaged in aquaculture; and Trends in catch	Annual reports of MAAIF, LGs	Extension services, availability of capital
Undertake SEA/EIA on policies, programmes or projects that are likely to have significantly negative impacts on aquatic biodiversity	• All key projects and programmes are subjected to SEA/EIA	Annual reports of NEMA	Compliance of stakeholders

Develop and or implement appropriate mitigation measures against habitat degradation of open water resources including by identifying and promoting alternative livelihood sources for women and men	• Number of mitigation measures put in place to restore degraded open water habitats; and Number of alternative livelihood options identified and promoted.	Annual reports of NEMA	Compliance of stakeholders
Promote private sector investment and participation in aquatic biodiversity conservation	• Trends in private sector investment in aquatic biodiversity conservation.	Annual reports of MAAIF, UBOS surveys	Level of participation of private sector
Support transboundary management of fisheries resources	• Harmonised fisheries legislations and management practices; and Transboundary fisheries management initiatives in place.	MAAIF, MWE, EAC, Nile Basin Initiative	Work plans and available resources
Intermediate outcome 12, 13, 14 & 15: 1-Trends in fish stocks; 2-Trends in fish species abundance and diversity; 3-Trends in fish catch rates (Catch per Unit Effort); and 4-Trends in the use of destructive fishing methods and gears	Fish are managed and harvested sustainably, legally, overfishing is avoided and recovery plans and measures are in place for all depleted species	Annual reports of MAAIF, UBOS surveys	Availability of resources
Output: Strengthen measures for sustainable harvesting of fish and other aquatic life	Sustainable harvesting of fish and invertebrate stocks promoted	Annual reports of MAAIF, UBOS surveys	Availability of resources
Activities			
3.10.1 Strengthen community and resource use groups participation in fisheries management, including by identifying gender-differentiated roles across the sector	• Number of fishing community's groups including women and men in landing sites actively participating in fisheries management • Documentation of gender-differentiated roles	Annual reports of Districts, Naira, MAAIF, UBOS surveys	Availability of resources
3.10.2 Regulate and control importation and usage of fishing gears	• Number of reported and successfully prosecuted cases • Trends in fish population structure	Annual reports of MAAIF	Availability of resources
3.10.3 Strengthen monitoring, control and surveillance fishing activities	• Number of reported and successfully prosecuted cases Trends in fish population structure	Annual reports of MAAIF, MWE	Availability of resources
3.10.4 Develop and implement gender-responsive community fisheries management plans	• Number of community fisheries management plans; and Number of women and men participating in the plan development and implementation	Annual reports of MAAIF,	Availability of resources
3.10.5 Provide adequate support to Beach Management Units (BMU)	• Number of BMUs supported	Annual reports of MAAIF	Availability of resources

Table 5: Logical framework for the SO4- Promote sustainable use and equitable sharing of cost and benefit of biodiversity

Strategic objective	Indicators	Means of measurement	Assumptions
The goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: 1. Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out	Appropriate incentives for biodiversity conservation and sustainable use are in place and applied	Inventories of sustainable use initiatives	Collation of data by biodiversity resource managers
The outputs: Phase out incentives harmful to biodiversity	Incentives for conservation and sustainable use of biodiversity introduced	Annual reports of biodiversity stakeholders	Availability of resources
Activities			
Develop economic instruments to encourage activities that enhance biodiversity conservation and discourages activities that impact negatively on biodiversity	• Number of economic instruments supporting biodiversity conservation and sustainable use (NEMA)	Inventory reports	Collation of data by biodiversity resource managers
Identify and support women groups to adopt more sustainable alternatives for household and income-generating activities to enhance livelihoods and biodiversity conservation	• Number of women's alternative strategies identified and promoted; and Number of alternative practices adopted/promoted by women (MGLSD, and Local governments)	Annual reports of biodiversity stakeholders	Availability of resources
Introduce pro-poor environmental taxes and levies and market-based instruments	• Effective taxes and other instruments to manage biodiversity are under implementation (MoFPED)	Annual reports of biodiversity stakeholders	Availability of resources
Promote and support Green Procurement through purchasing of environmentally preferable products or services, taking into consideration the necessity, not only for quality and price, but also for biodiversity conservation-conscious business	• Green procurement is being widely used to protect biodiversity and its sustainable use (PPDA)	Annual reports of biodiversity stakeholders	Availability of resources
Undertake Environmental Impact Assessments (EIA) of all policies, programmes or projects which have the potential for negative—or positive—impacts on biodiversity	• Number of EIAs completed for policies, programmes and projects (NEMA)	Annual reports of biodiversity stakeholders/ NEMA	Availability of resources

Integrate biodiversity accounting into national accounting and reporting processes	• Number of EIA processes that include community participation; and Biodiversity accounting reflected national accounting and reporting processes (NEMA and NPA)	Annual reports of biodiversity stakeholders/ NEMA	Availability of resources
Intermediate outcome 2: Partnerships with the private sector developed	At least 2 partnerships established to ensure that wild harvested plant-based products are sourced sustainably	Reports of the biodiversity stakeholders	Public notification systems used, willingness of stakeholders to share information
Outputs: Establish public-private partnerships (PPP)	Public Private Partnership (PPP) for sustainable use of biodiversity promoted	Compilation of contracts and MOUs or Agreements	Compilation undertaken
Activities			
Promote PPP to collect, harvest and process plant based products for commercialization	• Evidence of collaborative ventures between the private sector and public institutions (UNCST and NARO)	Reports of the biodiversity stakeholders	Public notification systems used, willingness of stakeholders to share information
Support value addition on plant based products for commercialization by local community groups	• Private sector and local communities engaged in processing for value addition on plant based products (MTIC, UEPB, NEMA and Local governments)	Reports of the biodiversity stakeholders	Public notification systems used, willingness of stakeholders to share information
Intermediate outcome 3: A framework in place for sharing the benefits from access to PGR in the country; Documents prepared on indigenous knowledge on PGR for food, agriculture and medicine; and Several community based PGR management initiatives in place	A well-established framework for implementing the Multilateral System of accessing and sharing of benefits arising from access to PGR in place	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Output: Implement ITPGRFA, CBD and the Nagoya Protocol on ABS jointly	Promote synergies in the implementation of ITPGRFA, CBD and the Nagoya Protocol on ABS	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Activities			
Develop and implement mechanisms for sharing the benefits from access to PGR in the country	• Effective documented mechanisms for sharing benefits from access to PGR put in place and are being implemented (NARO, NEMA and UNCST)	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Document traditional knowledge, innovations and practices in PGR	• Detailed documentation of traditional knowledge, innovations and practices in PGR available (MDAs, Local governments; NARO)	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.

Disseminate traditional knowledge information/ documents to enhance sustainable use of biodiversity (planning for food security and health care, i.e. medicinal plants)	• Documents on indigenous knowledge distributed to relevant stakeholders (NCRI)	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Initiate and support community based PGR management initiatives in various parts of the country	• Some PGR management activities initiated in some parts of the country (NARO and Local governments	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Intermediate outcome 4: Improved regulatory framework for ABS in Uganda enforced with involvement of IPLCs	The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in force	Monitoring reports – NEMA, stakeholders	Available resources
Outputs: Enforce the Nagoya Protocol on ABS	Domesticate the Nagoya Protocol on ABS, with particular consideration of social safeguards	Monitoring reports – NEMA, stakeholders	Available resources
Activities			
Accede to the Nagoya Protocol on ABS	• Instrument of accession (NEMA)	Document review	Assent by the Government
Review the ABS Regulations and incorporate relevant elements of the Nagoya Protocol	• ABS Regulations reviewed incorporating elements of the Nagoya Protocol (NEMA)	Document review	Availability of resources
Build capacity to enforce the Nagoya protocol on ABS	• Number of institutions trained (NEMA)	Training reports	Availability of resources
Promote and regulate bioprospecting and bio-trade activities	• Both bio-prospecting and bio-trade are regulated for the benefit of the local communities (UNCST)	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.
Support the Establishment of a functional Intellectual Property (IP) regime on ABS	• Joint ownership of patents and other IP rights reserved (UNCST)	Inventorying of activities	Collation and compilation done by biodiversity stakeholders and shared.

Table 6: Logical framework for the SO5 - To enhance awareness and education on biodiversity issues among the various stakeholders

Strategic objective	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1,2,3: Trends in behavioural change particularly among decision makers and the general public towards biodiversity conservation and sustainable use; and 2. Trends in communication programmes and actions promoting social corporate responsibility			
Develop stakeholder /public awareness programmes on biodiversity and its values	People are aware of the meaning and values of biodiversity and the steps they can take to use it sustainably	Monitoring and annual reports of biodiversity stakeholders	Inclusion in work plans and available resources
The outputs: Conduct public awareness on biodiversity	Awareness of NBSAP II among key stakeholders Policy makers, professionals, private sector, general public promoted	Monitoring and annual reports of biodiversity stakeholders	Inclusion in work plans and available resources
Activities			
5.1.1 Undertake intensive awareness raising on the content of NBSAP II at all levels	• Number and types of IEC materials produced; Number of institutions/ districts where IEC materials disseminated; Responses and feedback from IEC users; and Number of women's organisations/ mechanisms engaged (MGLSD and NEMA)	Document review, monitoring and annual reports	Inclusion in work plans and available resources
5.1.2 Develop and disseminate user-friendly and gender-responsive Information Education and Communication materials (IECs) for popular campaigns targeting women as agents of change for conservation	• Number of IPLCs and community groups sensitised on biodiversity conservation (Local governments	Training/ awareness creation reports, monitoring reports	Inclusion in work plans and available resources
5.1.3 Sensitise local communities including IPLCs on biodiversity conservation	• Regular surveys; Attitude and behavioural change among communities; Increased participation in biodiversity conservation; and Number and type of IEC materials	Monitoring and annual reports	Inclusion in work plans and available resources
5.1.4 Develop and disseminate gender-responsive biodiversity public awareness materials	• Number of stakeholders at all levels are aware of NBSAP II (NEMA and Local governments)	Monitoring and annual reports	Inclusion in work plans and available resources

Intermediate outcome 4&5: 1. Positive attitude and behavioural change among students and teachers in educational institutions; and 2. Biodiversity integrated into the National School Curriculum	• Students and teaching staff are aware of the values of biodiversity	Survey studies	Inclusion in work plans and available resources
Outputs: Integrate biodiversity in national curriculum	Educational programs on biodiversity issues relevant to Uganda developed and implemented	Monitoring and annual reports	Inclusion in work plans and available resources
Activities			
5.2.1 Develop and implement educational programs on biodiversity issues relevant to Uganda	• Biodiversity incorporated in school curricula at various levels (NEMA)	Document review for curricula	Inclusion in work plans and available resources
5.2.2 Strengthen and/or establish environmental clubs or societies	• Biodiversity incorporated in environmental activities in educational institutions at all levels, including clubs and competitions (NEMA)	Document review	Inclusion in work plans and available resources
5.2.3 Develop and disseminate gender-responsive educational materials on biodiversity	• A variety of educational materials developed, produced, accessed, used, and appreciated (NEMA and MGLSD)	Document review and stakeholder surveys	Inclusion in work plans and available resources
Intermediate outcome 3: 1. Adequate and active participation in regional and global fora by Ugandans	International cooperation and networking is effective enough to enhance communication of the value of biodiversity conservation and sustainable use	Monitoring and annual reports	Availability of resources
Output: Represent Uganda at regional and global fora on biodiversity	Equitable participation in regional and international cooperation programs on biological diversity supported Support and financial resources at international level for biodiversity programs mobilised	Monitoring and annual reports	Availability of resources
Activities			
Seek support to enable women and men personnel to attend regional and international fora relevant to biodiversity	• Number of women and men at international conferences and workshops on biodiversity and related areas; -Number of biodiversity regional and international workshops organised and held in Uganda; and -Number of Reports (NEMA)	Monitoring and annual reports	Availability of resources
Develop proposals for supporting biodiversity conservation programs at national level	• Mobilise support and financial resources at international level for biodiversity programs (MoFPED, MDAs and Local governments)	Monitoring and annual reports of relevant stakeholders	Availability of resources

Table 7: Logical framework for the SO6- Harness modern biotechnology for socioeconomic development with adequate safety measures for human health and the environment

Strategic objective	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: Increased participation and support of biotechnology by policy makers and the general public	Public awareness, education and participation in biotechnology and biosafety are enhanced	Survey reports. Regulators reports	Awareness creation will increase public participation
The outputs: Create awareness on the benefits of modern biotechnology	Communication, Education and Public Awareness (CEPA) strategy implemented for biotechnology and Biosafety	Monitoring reports, CEPA materials produced and disseminated	Public awareness will increase public buy-in and participation
Activities			
Conduct a baseline study on level of public awareness and education on the benefits and risks of biotechnology and Biosafety	• Increased stakeholder involvement in biotechnology and Biosafety practices UNCST, NEMA	Survey reports	Public willingness to participate.
Establish and operationalize Biosafety Clearing House (BCH)	• A National Biosafety Clearing House Mechanism or similar entity in place UNCST	Physical observation & monitoring reports	Availability of resources
Conduct specialised trainings in Biosafety for regulators and inspectors	• Increased number of trained Technical Personnel in biotechnology and Biosafety UNCST	Training reports, monitoring reports	Availability of resources
Conduct specialised biotechnology communication for media specialists	• Balanced and informed reporting by the media on Biotechnology and Biosafety, UNCST	IEC materials developed, monitoring reports	Availability of resources
Conduct trainings in biotechnology and biosafety for women and men	• Increased levels of appreciation on Biotechnology and Biosafety in communities, UNCST	Training reports, monitoring reports	Availability of resources
Intermediate outcome 2: Mechanisms for continuous Human and Infrastructural Resource Capacity Development, deployment retention put in place - Biotech tools developed and optimised for biodiversity conservation	National capacity for biotechnology applications and use is adequate	Evaluation reports	Government commitment and institutional willingness
Output: Build capacity on the application of biotechnology	Capacity building for biotechnology and Biosafety supported	Training reports	Commitment from Government and private sector participation.
Activities			

Assess national capacities in biotechnology and Biosafety	• National capacity for biotechnology and Biosafety assessed, UNCST	Assessment report	Work plan and Budgetary appropriations
Support the development of skilled human resources for biotechnology and Biosafety	• Number of scientists trained in Biotechnology and Biosafety, UNCST	Human capital development reports	Availability of resources
Promote infrastructural Development and Research on biotechnology and Biosafety.	• Accredited Biotechnology and Biosafety infrastructure developed, UNCST	Monitoring reports	Work plan and Budgetary appropriations
Develop and apply biotechnology tools for identification, characterization and conservation of biodiversity	• Adequate tools developed for identification, characterization and conservation of biodiversity, UNCST	Monitoring reports	Work plan and Budgetary appropriations
Intermediate outcome 3: National Biotechnology and Biosafety Bill 2012 passed into law - National Biosafety Committee effectively supported to perform its functions	The national biotechnology and biosafety law in place	Published laws	Laws accented to by president
Output: Expedite approval of the Biotechnology and Biosafety Bill	The passing into law of the Biotechnology and Biosafety Bill supported	Parliamentary minutes of passed bill and report from Office of the President	Revisions to bill passed by Parliament, accented by Executive
Activities			
Undertake widespread awareness on the benefits and risks associated with biotechnology	• Increased appreciation of biotechnological developments (UNCST)	Survey reports. Regulators reports	Awareness creation will increase public acceptance of biotechnology
Popularize the Biotechnology and Biosafety Policy	• Increased Awareness and knowledge on Biotechnology and Biosafety policy (UNCST)	Monitoring reports	Work plan and Budgetary appropriations
Advocate for the approval of the National Biotechnology and Biosafety Bill to enable regulation of Biotechnology and Biosafety developments in the country.	• A Biotechnology and Biosafety law in place (UNCST)	Published laws	Laws accented to by president
Popularize the Biosafety and Biotechnology Policy and Bill/Act	• Stakeholders and the general population develop a positive attitude towards the law (UNCST)	Monitoring reports	Work plan and Budgetary appropriations
Develop guidelines on compliance to biosafety	• Guidance on Biosafety compliance in place (UNCST)	Guidelines document	Work plan and Budgetary appropriations
Enhance the regulatory performance of the National Biosafety Committee (NBC)and the Institutional Biosafety Committees (IBC)	• The NBC and IBCs are adequately remunerated and perform their duties diligently (UNCST)	Monitoring reports	Work plan and Budgetary appropriations

Promote public-private partnerships (PPP) in biotechnology development	Vibrant public-private partnerships in biotechnology development (UNCST)	Monitoring reports	Work plan and Budgetary appropriations
Intermediate outcome 4: Increased compliance with national and international requirements	The Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress under the Cartagena Protocol on Biosafety in operation and implemented	Approved national document on Institutional capacity strengthening for implementation of the Nagoya protocol on Access to Genetic Resources & Benefit Sharing in Uganda	Availability of resources, budgetary appropriations
Output: Popularize the Nagoya-Kuala Lumpur Protocol on ABS	The Nagoya- Kuala Lumpur Supplementary Protocol on liability and redress domesticated	Monitoring reports	Availability of resources
Activities			
Accession Instruments	• Accession Instruments (NEMA)	Government signed accession instrument	Accent by the Minister for Water and Environment
Increased understanding of ABS issues by the Government and communities	• Increased understanding of ABS issues by the Government and communities (UNCST, NEMA and Local governments)	IEC documents disseminated and monitoring reports	Availability of resources
Increased capacity to support scientific research and development in genetic resources	• Increased capacity to support scientific research and development in genetic resources (UNCST)	Availability of resources	Availability of resources
The Protocol on Liability and Redress is enforced	• The Protocol on Liability and Redress is enforced (UNCST)	Availability of resources	Availability of resources
Intermediate outcome 5: Biotechnology applications and use widely accepted by the Ugandan public	Widespread application and use of biotechnology and its products for national development	Survey reports	Budgetary appropriations
Output: Carry out research on biotechnology	Biotechnology applications and use for National development supported	Survey reports	Budgetary appropriations
Activities			
Promote management oriented research and development in medical, agricultural land industrial biotechnology.	• Vibrant biotechnology and Biosafety research applied in the fields of medicine, agriculture and Industry UNCST	Survey reports	Budgetary appropriations
Undertake ESIA or risk assessments on biotechnology plans, programmes and projects	• ESIAs conducted and complied with by developers in biotechnology NEMA	Monitoring reports	Private sector participation and regulatory requirements
Establish a strong and effective monitoring system for biotechnology use and applications	• A strong monitoring system in place for biotechnology use and applications NEMA	Monitoring reports	Considerations included in approved work plans
Develop and implement mechanisms for sharing costs and benefits of biotechnology	• Effective mechanisms in place for sharing costs and benefits of biotechnology UNCST	Survey reports	Public-private partnerships on biotechnology
Promote integration of biotechnology values into macroeconomic frameworks	• Biotechnology applications mainstreamed in national macroeconomic programmes NPA	Assessment reports	Budgetary appropriations

Table 8: Logical framework for the SO7 - Promote innovative and sustainable financing mechanisms to support NBSAP implementation

Strategic objective	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: 1. Guidelines and action plans for financing biodiversity in Uganda developed and implemented; 2. Trends in financial resources mobilised; and 3. Biodiversity Finance Plan for resource mobilisation developed and implemented.	A study is undertaken in respect of CBD Decision X/3 and guidelines for financing biodiversity in Uganda developed	A study report and guidelines document developed	Availability of resources
The outputs: Develop guidelines and action plans for financing biodiversity in Uganda	Put in place measures for sustainable biodiversity financing	Guidelines report, and action plans for the NBSAP	Stakeholder buy-in on financing options
Activities			
Undertake a study to collect information which will guide in the development of guidelines for financing biodiversity in Uganda	• Study undertaken and information collected to use in the development of guidelines NEMA	Survey/ finance needs report	Availability of resources
Develop and implement guidelines for financing biodiversity in Uganda	• Guidelines developed NEMA	Guidelines report	Stakeholder buy-in on financing options
Develop Biodiversity Finance Plan	• Biodiversity Finance Plan NEMA	Biodiversity finance plan document	Availability of resources
Intermediate outcome 2: Trends in National financial resource allocation for biodiversity conservation	Finance resources for effectively implementing NBSAPII is increased by at least 10% from the current level	Biodiversity expenditure review update report	Work plan and budget appropriation
Output: Engage stakeholders on resource mobilisation	Mobilise financial resources for biodiversity conservation	Approved and implemented project proposals	Work plan and budget appropriation
Activities			
Identify and seek funding support from diverse sources including regional and bilateral development partners, foundations and private sector	• Increased funding from diverse sources mobilised NEMA	Monitoring reports	Work plan and budget appropriation, and stakeholder partnerships
Support capacity building for writing project proposals that are gender-responsive	• Capacity built for writing project proposals NEMA	Training reports, proposals produced by trainees	Availability of resources
Develop project proposals to target designated donors under the CBD	• Number of project proposals submitted and Number of projects approved NEMA	Submitted and funded proposals	Availability of resources

Mobilise resources by creating synergies between the different multilateral Environmental Conventions	• Mobilise additional resources through partnership with the other Conventions NEMA	Monitoring report	Availability of resources
Budget for activities of biodiversity and incorporate in annual budget of Line ministries, NGOs, private sector	• Biodiversity projects which incorporate aspects of accountability, transparency, gender mainstreaming NEMA	Monitoring reports	Work plan and budget appropriation
Promote accountability, transparency, gender mainstreaming in implementation of biodiversity projects	Proportion of funds annually budgeted for by line ministries for biodiversity activities and Gender-responsive allocation for activities NEMA, MDAs and Local governments	Financial audit reports	Appropriate financial governance guidelines n place
Intermediate outcome 3: Trends in funding for biodiversity conservation	New financing mechanisms are operational and new funding mobilised for biodiversity conservation	Biodiversity expenditure review update report	Work plan and budget appropriation
Outputs: Identify and implement new financial mechanisms for biodiversity conservation	Innovative financing mechanism promoted	Innovative finance documents	Work plan and budget appropriation
Activities			
Put in place an enabling policy or legislative framework for new biodiversity financing mechanisms	• A policy or regulations in place NEMA	Financing instruments document	Availability of resources
Issue environment bonds	• Environment bonds issued and bought NEMA	Environment bond instruments	Availability of resources
Provide incentives that promote green production and purchase of green goods	• Incentives to promote purchase of green goods identified and provided PPDA	Instruments showing incentives	Endorsement of stakeholders
Institute appropriate pricing mechanisms for biodiversity goods and services	• Pricing mechanisms put in place for biodiversity goods and services MoFPED	Fiscal policy reforms	Work plan and budget appropriation
Support green marathon	• The concept of green marathon promoted and supported NEMA	Reports/ documentaries	Endorsement of stakeholders
Promote green products and technologies	Clear mechanisms identified to promote green products and technologies NEMA and NPA	Monitoring reports	Work plan and budget appropriation
Support sensitization and capacity development to companies about benefits from ecosystem services	Number of sensitization and capacity building undertaken NEMA	Monitoring reports	Work plan and budget appropriation
Enhance payment for ecosystem services and biodiversity offsets	Increased level of payments for ecosystems services and application of biodiversity offsets NEMA	Survey reports	Endorsement of stakeholders

Table 9: Logical framework for New and Emerging Issues

	Indicators	Means of measurement	Assumptions
Goal: To enhance biodiversity conservation, management and sustainable utilisation and fair sharing of the benefits	Percent contribution of biodiversity to livelihoods, and national wealth of Uganda	Natural Capital Accounting for Biodiversity, and national income assessment for biodiversity	Biodiversity integrated into national accounts, national and sub-national income assessment frameworks
Inter-mediate outcome 1: Biodiversity conservation and ecosystem resilience are being maintained adjacent to oil exploration and production areas	Oil exploration and production are being guided by biodiversity friendly regulations	Monitoring reports of regulator, compliance and voluntary audit reports.	Environmental and Social Management Plans are adequate, and fully implemented.
The outputs: Manage negative impacts of oil and gas development on biodiversity	Ecosystem conservation in oil rich regions of Uganda supported	Survey reports, project monitoring reports	Albertine Graben mapped and appropriate biodiversity conservation actions planned and funded
Activities			
8.1.1 Set up environmental standards to limit the production or discharge of harmful (hazardous) wastes or products in sensitive ecosystems	• Ensure that all the required standards have been formulated (NEMA)	Monitoring reports of regulator, compliance and voluntary audit reports.	Environmental and Social Management Plans are adequate, and fully implemented.
8.1.2 Strengthen compliance to t EIAs for all petroleum explorations and extractive industries	• All oil and gas activities are being subjected to EIA and Communities are aware of EIA results (NEMA)	Monitoring reports of regulator, compliance and voluntary audit reports.	Environmental and Social Management Plans are adequate, and fully implemented.
8.1.3 Support protection and restoration measures for degraded ecosystems, threatened species and migratory routes in oil exploration and production regions	• Affected degraded ecosystem put under restoration activities and special species are protected (NEMA and UWA)	Monitoring reports of regulator, compliance and voluntary audit reports.	Environmental and Social Management Plans are adequate, and fully implemented.
8.1.4 Routinely improve/update the Sensitivity Atlas for the Albertine Graben	• The Atlas is routinely updated (NEMA)	Monitoring reports of regulator, compliance and voluntary audit reports.	Environmental and Social Management Plans are adequate, and fully implemented.
8.1.5 Support comprehensive awareness programmes and information flow regarding petroleum processes and biodiversity	• Awareness and information flow is adequately managed (NEMA)	IEC materials, monitoring reports	Environmental and Social Management Plans are adequate, and fully implemented.
8.1.6 Build the capacity and mobility of district and municipal environment officers (DEO/MEO) to effectively monitor oil and gas activities	• Resources allocated to DEO/MEOs (NEMA)	Monitoring reports, training reports	Environmental and Social Management Plans are adequate, and fully implemented.

8.1.7 Set up a biodiversity offset trust fund to ensure no net loss biodiversity due to petroleum activities	• Biodiversity offset trust fund is available for use when needed (NEMA)	An fund established and offset projects on ground	Willingness of Internal Oil Companies and other project stakeholders to participate, availability of biodiversity offset regulations
8.1.8 Examine and implement opportunities for translocation of animals from sensitive areas where oil exploration is already taking place to other PAs	• Translocation to other areas effected where necessary (UWA)	Monitoring reports	Environmental and Social Management Plans are adequate, and fully implemented.
Intermediate outcome 2: Proportion of hydrocarbon fuel sources substituted by biofuels	The development and use of biofuels are widespread in Uganda to complement hydrocarbon fuel sources	Survey reports	Availability of resources
Output: Control production of biofuel	• Sustainable use of biofuels in Uganda promoted	Assessment reports	Availability of resources
Activities			
Undertake awareness at all levels on the positive and negative impacts of biofuels on biodiversity	• Increased area allocated to biofuel crops	Survey reports	Work plan and budget appropriation
Develop a framework that promotes the positive and minimises the negative impacts of biofuel production on biodiversity	• A policy framework in place for production and use of biofuels	Framework document	Availability of resources
Put in place measures to protect food and energy security of local communities including women and men when introducing biofuel crops	• Safety net measures on food security included in district ordinances and community bylaws. A national biofuels policy and regulation with safety nets on food security	Documents ordinances, bylaws, and national regulation and policy on biofuels	Commercial levels of biofuels are adopted by stakeholders
Assess and identify areas suitable for biofuel production and areas inappropriate for biofuel production	• Suitable and inappropriate areas for biofuel production identified and mapped	Assessment report	Availability of resources
Ensure that EIAs are conducted for all biofuel projects and programmes	• Most biofuel production areas are subjected to EIAs	ESIA reports, and audit reports	Availability of resources
Promote and support research programmes on biofuels	• More research on biofuels being undertaken	Monitoring reports	Availability of resources

Promote and support the use of environmentally-sound technologies which promote the positive and minimise the negative impacts of biofuel production on biodiversity	• Environmentally- sound technologies have been identified and are being widely used	Monitoring reports	Availability of resources
Intermediate outcome 3: Disaster Risk management strategy in place to address	Biodiversity loss integrated in all public policy disaster risk reduction strategies	Document review of DRR policies and guidelines	Work plan and budget appropriation
Outputs: Integrate disaster risk management in biodiversity management	Minimise the impact of natural disasters on biodiversity	Monitoring reports on DRR	Work plan and budget appropriation
Activities			
Identify and implement risk management, mitigation and preparedness measures for biodiversity	• Appropriate measures to protect biodiversity in place (OPM)	Document review	Work plan and budget appropriation
Develop a Disaster Preparedness, Risk Reduction and Management Plan for protecting biodiversity	• Biodiversity Risk Management Plan in place (OPM)	Document review	Work plan and budget appropriation
Mainstream Disaster Preparedness, Risk Reduction and Management Plan in key National, sectoral and Districts planning frameworks for protection of biodiversity	• Disaster Preparedness Plan to protect biodiversity mainstreamed in key national, sectoral and district planning frameworks (OPM)	Document review	Work plan and budget appropriation
Improve disaster management systems, like early warning systems	• Reliable early warning systems put in place for dissemination to stakeholders; and Number of women and men seeking relief services pre/post-disaster (OPM)	Monitoring reports	Availability of resources
Support participatory valuation and management of ecosystem services	• Active participatory valuation and management of ecosystem services in place in disaster prone areas (NEMA)	Monitoring reports	Availability of resources
Strengthen the capacity of Disaster Reduction and Management Committees at all levels	• Effective capacity built in the Disaster Reduction and Management Committees at all levels (NEMA)	Training reports, monitoring reports	Availability of resources

3 MEAL Planning Tools

3.1 Structure of planning for MEAL activity

There are two main components to planning for MEAL. The Part A which is the technical implementation of the MEAL looks at the performance management plan, i.e. the results framework and logical framework under consideration, the indicator performance tracking table, the feedback and response mechanism, the learning plan, communication tools, summary evaluation tables, and the evaluation terms of reference (Table 17). Part B the administrative component considers the programme or project work plan, and the schedule for undertaking MEAL activities, as well as, the project budget, and the cost of undertaking the MEAL. These two components are generally included in the institutional work plan and budget for implementing the MEAL.

Table 10: MEAL Planning tools

Type of tools	Brief description
Part A: Technical Plan	
Performance management plan (M&E plan)	Builds on the log-frame to provide additional information on indicator definitions, data collection plans, means of analysis, and data use.
Indicator performance tracking table	Tracks progress towards project indicator targets in an easy to read table format
Feedback and response mechanism flow chart	The maps feedback loop from stakeholders and identifies how the project responds to feedback it receives
Learning plan	Provides for learning plan of activities
Planning tools for MEAL communications	Identified stakeholder information needs and ensures MEAL communications are systematically planned and managed
Summary evaluation table	Describes planned evaluations, including priority questions, timing, and budget
Evaluation of terms of reference	Specifies concise evaluation questions, proposed methods, and roles and responsibilities for specific evaluation activities to be undertaken
Part B: Administrative arrangements	
MEAL in the project calendar	A Gantt chart illustrates project schedules, identifying start date and end date and expected durations of all activities.
MEAL in the project budget	Cost estimates build from an extension of inputs into the log frame. The costing exercise provides for assumptions and sources of cost estimates.

3.2 Performance management plan

A Performance Management Plan (PMP) is a tool designed to measure the progress toward achieving results identified in the results framework, and/or the log-frame in order to inform decision-making, resource allocation, learning, and adapting. The MEAL PMPs consists of six components:

1. Performance Indicators to measure progress toward the results in the results framework and the log-frame.
2. Context Indicators for tracking context in which strategies and projects are being implemented.
3. Description of the data quality assessment procedures that will be used to verify and validate all performance data.
4. An Evaluation Plan to identify and track evaluations of the NBSAP II timeframe.
5. A schedule of performance monitoring tasks and responsibilities to be conducted over the expected life of the plan.
6. Tracking tables for all performance indicators to include baseline values, targets and rationale for targets, and actual values for each reporting period.

Table 11 shows the performance indicators of the MEAL. The performance indicators are linked to the strategic objectives and intermediate objectives as highlighted in the results framework, and the logical framework. The PMP table shows the performance indicators, the context for tracking indicators, the propose evaluation plan and the schedule for monitoring.

The fused performance and context indicators are based on the indicators from the NBSAP II. The performance/context indicators were developed in a format of project actions to be developed for implementation, on one hand, and on the other hand, guided by ongoing project activities. In the structure of the programme based budgeting, the project actions are developed based on a combination of programme implementation action plans (PIAPs). The PIAPs describe actions and proposed implementation that provide a link between project level indicators, and the sub-programmes and their matching programmes. The performance/context indicators were developed in a manner that would enable their mainstreaming into the PIAPs, and if this occurs, the intentions the Theory of Change will have been achieved, the NBSAP II will not only be mainstreamed with the NDP III and the Vision 2040, the national planning and budgeting processes, and economic performance evaluation process will be a basis for assessing the contribution of the NBSAP II to national development as envisioned in the Theory of Change.

At the implementation level, the performance/ context indicators provide guidance on the implementation of the results framework. The aspirations of the NBSAP II action plans are converted into 42 performance/ context indicators to be implemented over the remaining four years of the NBSAP II, the NBSAP II has over 200 output indicators, and more than 50 intermediate and strategic indicators. The indicators were developed with anticipation of the GBF, and the potential for the implementation period of the indicators to extend beyond the current timeline.

The evaluation plan is to have three schedules of evaluation, there is annual evaluation for indicators where the likely cost of environmental damage is high for example pollution in fragile ecosystems. For many of the indicators the evaluation will be conducted every five years; however, the MEAL proposes consideration for accountability and learning. Therefore, the biennial evaluation activities are proposed to enhance stakeholder involvement in the direction of implementing the NBSAP II. The evaluation plan proposes increased use of participatory approaches in the evaluation including group assessment, focus group discussions, and group informant surveys. The participatory approaches have to be set from the outset including revision of benchmark indicators and target indicators. There will be need, as well, for evaluation reports that show the feedback with beneficiary stakeholders to the funding partners such as government, development partners, civil society and private sector.

An annual monitoring schedule was adopted throughout the implementation of the MEAL for the NBSAPII. Nonetheless, given the large number of indicators and stakeholders and implementing entities involves, it is proposed that the actual monitoring be undertaken quarterly even though the reporting will be annual, in this way the databases can be populated gradually over an extended period of time.

Both the evaluation and monitoring plan will be increasingly integrated in the national statistical system under the Uganda Bureau of Statistics (UBOS), and the fiscal data analysis systems at the MoFPED. The data generated will also be used to draw inference on livelihoods and economic performance across the country. The data quality is outlined, and the budget proposals also highlighted in the Table 11.

The estimated budget for the MEAL is $38.95 million. However, most of the resources, are for actions already covered under government obligations, some of which have already been implemented. Additional resources from different sources including government, development partners, civil society and private sector..

Table 11: Performance Monitoring Plan: Indicators, data quality, evaluation plan, schedule of performance monitoring

Strategic objectives	Intermediate outcomes	Performance/ context indicators	Evaluation plan	Schedule of performance monitoring	Core data quality considerations (timeliness, precision, relevance, conformity, uniqueness, consistency, completeness)	Budget
To strengthen stakeholder coordination and frameworks for biodiversity management;	Allocation of financial resources to biodiversity conservation and management increased	• Integration of biodiversity and ecosystem values in the NDP, sectoral and District Development Plans and budgets (NPA, MoFPED, NEMA)	Biennial	Annual	Consistency	$500,000 (BER)
		• All responsible stakeholders have adopted and implement the MEAL for coordinated and enhanced information sharing across sectors (NPA, NEMA)				
	Integration of biodiversity in NDP, sectoral, local government plans and budgetary allocations	• All Programme at national and sub-national updated to comprehensively integrated the updated NBSAP II strategies, actions, activities, and responsibilities (NPA, NEMA)	Biennial	Annual	Conformity, completeness	$250,000 (PIR)
	Monitoring and Evaluation Strategy used to report on progress of NBSAP II	Annual monitoring reports, five year and 10-year evaluation reports (NEMA, all lead agencies); develop and disseminate tools to facilitate learning and knowledge exchange, a harmonized data reporting tool for the MEAL dashboard/platform and an integrated peer review mechanism for the MEAL.	Every five years	Annual	Timeliness, precision, relevance, conformity, uniqueness, completeness	$1.000,000
To facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity;	Trends in investment and partnerships in biodiversity-related research, monitoring & information management	• Strengthened regulatory framework for intellectual property rights for biodiversity, number of products, innovations/ patents (UNCST, MoTIC)	Annual	Annual	Timeliness, precision, relevance	$300,000 (MEAL execution)
		• Biodiversity research agenda (guideline) in place; and Number of functional biodiversity research institutions and their capacity, research grants received and funding and information exchange on biodiversity achieved (Universities, MAAIF/NARO, NEMA, MoH)				

	Taxonomic information in appropriate formats deposited in Uganda's Clearing House Mechanism (CHM); and - Taxonomic data and information used to guide decision making	• Centre of excellence for taxonomy established and increased number of taxonomists in research, academia, public sector (Universities, MAAIF/NARO, NEMA, MoH)	Biennial	Annual	Relevance, conformity, uniqueness, consistency, completeness	$250,000
	System(s) in place to document traditional knowledge as a basis for research and development of commercial biodiversity products; Traditional knowledge, practices integrated biodiversity conservation management	• Access and benefit sharing mechanism with indigenous and local communities; and Number of MTAs and MOUs signed with local communities, IPLCs, women and women's groups (UNCST, NEMA, LGs).	Every five years	Annual	Relevance, conformity, uniqueness, consistency, completeness	$250,000
To put in place measures to reduce and manage negative impacts on biodiversity;	Trends in coverage of protected areas; and Trends in the coverage connectivity/corridors of protected areas	• Number of PA management plans developed and reflect the value of biodiversity and implemented (UWA, NFA, Local governments), • Number of women and men with livelihood improvement initiatives in place; and revenue shared with communities (UWA, NFA, MGLSD)	Biennial	Annual	Timeliness, precision, relevance, uniqueness, consistency	$500,000
	Status and trends in extent and condition of habitats that provide carbon storage Trends in coverage of protected areas	• Enhancement of forest carbon stocks and habitat values and condition; and Improved livelihoods of adjacent communities (MWE/FSSD, NFA, LGs) • Wetland areas restored; and Restore at least 11,250 ha annually to contribute to the achievement of the national target in Vision 2040 (MWE/WMD, NEMA, LGs)	Every five years	Annual	Timeliness, precision, relevance, uniqueness, consistency	$150,000
	Trends in abundance of selected species	• Reduction in the number of nationally extinct, threatened and vulnerable species; No. of species management plans under implementation; No. of previously extinct species reintroduced (UWA, NEMA, NFA, Local Governments, MAAIF/NARO, MTWA) - strengthen regulation and enforcement.	Biennial	Annual	Timeliness, precision, relevance, uniqueness, consistency	$250,000

	Collect at least 20% of genetic diversity of crops and animals, wild relatives conserved; and Trends in genetic diversity of selected species	• Fully functional national and local repositories for plant and animal genetic resources (NARO and MAAIF), including community gene banks	Biennial	Annual	Timeliness, precision, relevance, uniqueness, consistency	$250,000
	Restore of critical fragile, degraded ecosystems; Proportion of degraded habitats restored, and Trends in proportion/coverage of land affected by degradation	• Progress in restoring natural habitats converted through land use/land cover change, primary productivity enhancement, below ground biodiversity and actions to minimise biodiversity leakage (MWE, NEMA, MAAIF). • No. of financing mechanisms including cost and benefit sharing mechanisms implemented (NEMA, MoFPED, MWE, NFA, UWA, FSSD and Local governments)	Biennial	Annual	Timeliness, precision, relevance, uniqueness, consistency	$250,000
	Trends in area and productivity of agricultural land, forests under sustainable management	• Measures put in place to ensure a win-win situation for agricultural production and biodiversity conservation (NARO, MAAIF and Local governments)	Annual	Annual	Timeliness, precision, relevance, uniqueness, consistency	$250,000
	Pollution standards in place and enforced; Pollution levels due to various anthropogenic practices such agriculture, waste water, oil and gas, development activities are compliant with national and international standards; Trends in water quality in aquatic ecosystems; Trends in sediment transfer rates; and Trends in proportion of wastewater discharged after treatment	• Progress in pollution management; and enhanced capacity (infrastructure, human resources and financial) to detect and manage pollution in place (WQMD, WRMD, Municipalities authorities, and City Authorities; NARO and MAAIF; and NEMA)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$300,000

	Management Plans in place to control most threatening invasive alien species; Trends in the economic impacts of selected invasive alien species; Trends in area covered invasive alien species	• National capacity for regulation and enforcement of regulations on invasive species in place including containing alien invasive species in vulnerable ecosystems, an inventory of alien invasive species; and Management plans developed and implemented (NARO, NEMA, MAAIF, WMD, NFA and Local governments)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$150,000
	Catch per unit effort; and Trends in area, frequency, or intensity of destructive fishing practices	• Trends in fish catch; and measures put in place to control alien fish species, measures to reduce surface area under Water Hyacinth, congress weed and Salvinia molesta (MAAIF/ NARO)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$250,000
		• Number of measures put in place to restore degraded open water habitats; and number of alternative livelihood options identified and promoted, including harmonising legislation, regulation and enforcement. (MAAIF/ NARO)				
	Trends in fish stocks; Trends in fish species abundance and diversity; Trends in fish catch rates (Catch per Unit Effort); and Trends in the use of destructive fishing methods and gears	• Number of reported and successfully prosecuted cases; and Trends in fish population structure (MAAIF/ NARO)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$150,000
To promote the sustainable use and equitable sharing of costs and benefits of biodiversity;	Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out	• Number and effectiveness of economic instruments supporting biodiversity conservation and sustainable use (NEMA)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$600,000
		• Biodiversity accounting reflected national accounting and reporting processes and safeguard systems (UBOS, NEMA and NPA, development partners)				
	Partnerships with the private sector developed	• Private sector and local communities engaged in processing for value addition on plant-based products (UNCST, NARO, MoTIC, UEPB, NEMA and LGs)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$300,000

	A framework in place for sharing the benefits from access to PGR in the country; Documents prepared on indigenous knowledge on PGR for food, agriculture and medicine; and Several community-based PGR management initiatives in place	• Mechanisms and initiatives for sharing benefits from access to PGR put in place and are being implemented (NARO, NEMA and UNCST) • Detailed documentation of traditional knowledge, innovations and practices in PGR available (MDAs, Local governments; NARO and NCRI; MAAIF/NAGRC&DB)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$50,000
	Improved regulatory framework for ABS in Uganda enforced with involvement of IPLCs	• Capacity strengthening in bio-prospecting and bio-trade regulation, ABS, intellectual property rights, and awareness creation among stakeholders (NEMA, UNCST).	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$250,000
To enhance awareness and education on biodiversity issues among the various stakeholders;	Trends in behavioural change particularly among decision makers and the general public towards biodiversity conservation and sustainable use; trends in communication programmes and actions promoting social corporate responsibility, and develop stakeholder /public awareness programmes on biodiversity and its values	• Attitude and behavioural change among IPLCs and community groups sensitised on biodiversity conservation (Local governments), institutions/ districts, women's organisations/ mechanisms engaged (MGLSD and NEMA)	Biennial	Annual	Conformity, completeness	$50,000
	Positive attitude and behavioural change among students and teachers in educational institutions; and Biodiversity integrated into the National School Curriculum	• Biodiversity incorporated into the education curricula at various levels within schools, and post school training programmes (NEMA)	Biennial	Annual	Conformity, completeness	$250,000
	Adequate and active participation in regional and global fora by Ugandans	• Financial and technical support resources mobilised at international/ regional level for biodiversity programs (MoFPED, MDAs and Local governments)	Annual	Annual	Conformity, completeness	$250,000

To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment; and,	Mechanisms for continuous Human and Infrastructural Resource Capacity Development, deployment retention put in place - Biotech tools developed and optimized for biodiversity conservation	• Accredited Biotechnology and Biosafety infrastructure developed and scientists trained (MAAIF/NARO, UNCST, Universities, NEMA)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$250,000
	National Biotechnology and Biosafety Bill 2012 passed into law, National Biosafety Committee effectively supported to perform its functions	• A Biotechnology and Biosafety law and regulatory framework and institutional capacity in place (UNCST, NEMA, Parliament of Uganda, MWE, MAAIF)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$250,000
	Increased compliance with national and international requirements	• Strengthened capacity for ABS issues by the Government and communities, Accession Instruments developed including Protocol on Liability and Redress is enforced (NEMA, UNCST, MAAIF, MoTIC)	Biennial	Annual	Conformity, completeness	$250,000
	Biotechnology applications and use widely accepted by the Ugandan public	• Vibrant biotechnology and biosafety research applied in medicine, agriculture and Industry and biotechnology applications mainstreamed in national macroeconomic programmes(UNCST, NEMA, NPA)	Biennial	Annual	Conformity, completeness	$250,000

To promote innovative sustainable funding mechanisms to mobilize resources for implementing NBSAPII.	Guidelines and action plans for financing biodiversity in Uganda developed and implemented; Trends in financial resources mobilized; and Biodiversity Finance Plan for resource mobilization developed and implemented.	• Biodiversity Finance Plan updated mainstreamed into national fiscal policy frameworks, and into the NDP III (NPA, MoFPED, NEMA, development partners)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$500,000
	Trends in funding for biodiversity conservation	• Effectiveness and efficiency of biodiversity finances mobilised in supporting biodiversity conservation, and the biodiversity financing gap for Uganda MoFPED, NEMA, development partners)	Biennial	Annual	Conformity, completeness	$250,000
Emerging issues – oil and gas, biofuels, and disaster risk management	Biodiversity conservation and ecosystem resilience are being maintained adjacent to oil exploration and production areas	• Comprehensive implementation of environmental and social safeguards for oil and gas effectively and efficiently monitored, audited and enforced (NEMA, MEMD/PAU, UWA, NFA, LGs, IPLCs, CSOs, Oil Companies)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$300,000
	Proportion of hydrocarbon fuel sources substituted by biofuels	• Policy framework, regulatory system on environmental/social safeguards in place for production and use of biofuels (MAAIF, MEMD, NEMA).	Annual	Annual	Timeliness, precision, relevance, consistency	$25,000
	Disaster Risk management strategy in place to address potential biodiversity risks and hazards	• Disaster Preparedness Plan (including early warning systems, participatory assessment tools, effective capacity for all stakeholders) to protect biodiversity mainstreamed in key national, sectoral and district planning frameworks (OPM, NEMA, MWE, MTWA, UWA, NFA, LGs) Appropriate measures to protect biodiversity in place (OPM)	Annual	Annual	Timeliness, precision, relevance, conformity, consistency	$25,000

3.3 Indicator Performance Tracking Table

One of the early baseline assessment steps of MEAL implementation will be the development the Indicator Performance Tracking Table (IPTT). The IPTT is used to synthesize information into a short concise table format. The IPTT provides a simple format to establish indicator targets and track progress against them over time, it improves accountability for tracking and reporting project progress, and it is used to compare progress to other projects inside (or outside of) the plan, and also to compare actual versus expected performance and think critically to understand the evidence.

The IPTT can used as a primary data analysis, used for engagement with stakeholders on the progress of the project. The IPTT for the MEAL will be developed using some of the NBSAP II action planning information, data from the sixth national report, and additional data collated at the outset of MEAL implementation.
As part of the MEAL implementation, it is recommended that all projects under the NBSAP II develop an IPTT table that will be shared with the secretariat/ regulator (NEMA), and the relevant lead agencies. The IPTT will form farm of the progress reporting and monitoring updates for the project implementation team and the secretariat.

Table 12: Format of tracking table

Strategic objective	Intermediate objective	Performance/ context indicators	Means of verification	Assumptions	Baseline	Year of baseline	Target 2025/26
To strengthen stakeholder coordination and frameworks for biodiversity management;	Financial resources to biodiversity conservation and management allocation increased	• Integration of biodiversity and ecosystem values in the NDP, sectoral and District Development Plans and budgets (NPA, MoFPED, NEMA)	Budgets and performance reports	Mainstreaming of biodiversity in public finance management	1%	2014/15	10%
		• All responsible stakeholders have adopted and implement the MEAL for coordinated and enhanced information sharing across sectors (NPA, NEMA)	Annual NDP/NEMA performance reports	Biodiversity mainstreamed in plans, NDP III, IV.	0	2021/22	50%
	Biodiversity in NDP, sectoral, local government plans and budgetary allocations integrated	• All Programme at national and sub-national updated to comprehensively integrated the updated NBSAP II strategies, actions, activities, and responsibilities (NPA, NEMA)	NDP III, IV implementation reports	Biodiversity mainstreamed in plans, NDP III, IV.	13	2021/22	20
	Monitoring and Evaluation Strategy used to report on progress of NBSAP II developed	• Annual monitoring reports, five year and 10-year evaluation reports (NEMA, Lead Agencies); develop and disseminate tools to facilitate learning and knowledge exchange, a harmonized data reporting tool for the MEAL dashboard/platform and an integrated peer review mechanism for the MEAL.	Annual reports, and evaluation reports of all NBSAP II stakeholder institutions	MEAL mainstreamed into plans of all NDP III programmes/ NBSAP II implementation	0	2021/22	1

To facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity;	Investment and partnerships in biodiversity-related research, monitoring & information management increased	• Strengthened regulatory framework for intellectual property rights for biodiversity, number of products, innovations/ patents (UNCST, MoTIC)	Annual performance reports	Property rights integrated into annual work plan	0	2021/22	1
		• *Biodiversity research agenda (guideline) in place;* and Number of functional biodiversity research institutions and their capacity, research grants received and funding and information exchange on biodiversity achieved (Universities, MAAIF/NARO, NEMA, MoH)	Annual performance reports	Property rights integrated into annual work plan, and budgets	0	2021/22	1
	Taxonomic information in appropriate formats deposited in Uganda's Clearing House Mechanism (CHM); and - Taxonomic data and information used to guide decision making	• Centre of excellence for taxonomy established and increased number of taxonomists in research, academia, public sector (Universities, MAAIF/NARO, NEMA, MoH)	Report on project implementation, and performance	Availability of financial resources	0	2021/22	1
	System(s) to document traditional knowledge as a basis for research and development of commercial biodiversity products; Traditional knowledge, practices integrated biodiversity conservation management in place	• Access and benefit sharing mechanism with indigenous and local communities; and Number of MTAs and MOUs signed with local communities, IPLCs, women and women's groups (UNCST, NEMA, and LGs).	Annual performance reports	Update and implementation of resource/ general management plans	0	2021/22	10
To put in place measures to reduce and manage negative impacts on biodiversity;	Coverage of protected areas; and coverage connectivity/ corridors of protected areas increased	• Number of PA management plans developed and reflect the value of biodiversity and implemented (UWA, NFA, Local governments),[2*]	Management plan documents	Inclusion of action in work plans & budgets	14	2021/22	17
		• Number of Collaborative Forest Management Associations with livelihood improvement initiatives in place; and revenue shared with communities (NFA, MoGLSD).	Performance reports (annual)	Inclusion of action in work plans & budgets	67	2021/22	330
		• Number of Collaborative Resource Management Associations (National Park and Wildlife Reserve adjacent Districts) with livelihood improvement initiatives in place; and revenue shared with communities (UWA)	Performance reports (annual)	Implementation of strategic ecosystem management (mgt) plans (UGGDS)	30	2020/21	52

	Extent and condition of habitats that provide carbon storage and coverage of protected areas increased.	• Enhancement of forest carbon stocks and habitat values and condition; and improved livelihoods of adjacent communities (MWE/FSSD, NFA, LGs). THF Well stocked (ha)	Performance reports (annual)	Implementation of strategic ecosystem mgt plans (UGGDS)	524,189 ha	2017	602,295
		• Wetland areas restored; and Restore at least 11,250 ha annually to contribute to the achievement of the national target in Vision 2040 (MWE/WMD, NEMA, LGs)	Performance reports (annual)	Implementation of strategic ecosystem mgt plans (NBSAP II), funding partnerships	785,703 ha	2017	875,703
	Abundance of selected species increased	• Reduction in the number of nationally extinct, threatened and vulnerable species; No. of species management plans under implementation; No. of previously extinct species reintroduced (UWA, NEMA, NFA, Local Governments, MAAIF/NARO, MTWA) - strengthen regulation and enforcement.[4]	Performance reports (annual)	Implementation of strategic ecosystem mgt plans (NBSAP II), funding partnerships	526	2018	279
	At least 20% of genetic diversity of crops and animals, wild relatives conserved collected; and genetic diversity of selected species increased	• Fully functional national and local repositories for plant and animal genetic resources (NARO and MAAIF), including community gene banks	Performance reports (annual)	Implementation of strategic ecosystem mgt plans (NBSAP II), funding partnerships	5%	2017	20%
	Critical fragile, degraded ecosystems restored; Proportion of degraded habitats restored, and proportion/coverage of land affected by degradation increased.	• Progress in restoring natural habitats converted through land use/land cover change, primary productivity enhancement, below ground biodiversity and actions to minimise biodiversity leakage (MWE, NEMA, and MAAIF). Forests and wetland[s5] (ha)	Performance reports (annual)	Implementation of strategic ecosystem mgt plans, funding partnerships	847,738	2015	942,758
		• No. of financing mechanisms including cost and benefit sharing mechanisms implemented (NEMA, MoFPED, MWE, NFA, UWA, FSSD and Local governments) [6]	Performance reports (annual)	Implementation of strategic ecosystem management plans (NBSAP II), funding partnerships	5	2018	10

2 *The 10 National Parks and 12 Wildlife Reserves were considered. Many of the GMPs are expired or expected to expire before 2025/26. Baseline active 14 GMPs. But only 5 GMPs will be active by 2025/26. Leaving a deficit of 17 GMPs (UWA Website 2021).*

3 67 CFM agreements have been signed with the NFA. 262 groups lodged CFM applications (Ssemanda, Kiyingi, Opige, 2020).

4 All vulnerable species in 2018 restored to populations without vulnerability by 2025/26

5 Stable area is (wetlands plus forests), Land and Soil Improvement Accounts 2021, 9,492 ha per year for 10 years improvement.

6 Revenue sharing, resource access, carbon finance, biodiversity offsets (2018); 7 mechanisms in Biodiversity Finance Plan (NEMA 2018)

	Area and productivity of agricultural land, forests under sustainable management increased	• Measures put in place to ensure a win-win situation for agricultural production and biodiversity conservation (NARO, MAAIF and Local governments) Climate smart agriculture/ Sustainable Land management across the country. Districts targeted.	Performance reports, environmental quality/ sensitivity assessment reports	Inclusion in work plans and budgets. Support from funding partners	40	2021	120
	Pollution standards in place and enforced; Pollution levels due to various anthropogenic practices such agriculture, waste water, oil and gas, development activities are compliant with national and international standards; Trends in water quality in aquatic ecosystems; Trends in sediment transfer rates; and Trends in proportion of wastewater discharged after treatment	• Progress in pollution management; and enhanced capacity (infrastructure, human resources and financial) to detect and manage pollution in place (WQMD, WRMD, Municipalities authorities, and City Authorities; NARO and MAAIF; and NEMA). Current safe water coverage in rural areas.[7]	Performance reports, environmental quality/ sensitivity assessment reports	Inclusion in work plans and budgets. Support from funding partners	30%	2021	60%
	Management Plans in place to control most threatening invasive alien species; Trends in the economic impacts of selected invasive alien species; Trends in area covered invasive alien species	• National capacity for regulation and enforcement of regulations on invasive species in place including containing alien invasive species in vulnerable ecosystems, an inventory of alien invasive species; and Management plans developed and implemented (NARO, NEMA, MAAIF, WMD, NFA and Local governments). Capacity status percentage (qualitative)	Performance reports, sensitivity assessment reports	Inclusion in work plans and budgets. Support from funding partners	20%	2018	60%
	Catch per unit effort; and area, frequency, or intensity of destructive fishing practices reduced	• Trends in fish catch; and measures put in place to control alien fish species, measures to reduce surface area under Water Hyacinth, congress weed and Salvinia molesta (MAAIF/ NARO). No. of boats	Stock assessment reports, resource management reports	Inclusion in work plans and budgets. Support from funding partners	28,400	2016	20,000
		• Number of measures put in place to restore degraded open water habitats; and number of alternative livelihood options identified and promoted, including harmonising legislation, regulation and enforcement. (MAAIF/ NARO). Illegal fishing effort	Annual performance reports	Inclusion in work plans and budgets.	6,240	2016	3,030

	Fish stocks; fish species abundance and diversity; fish catch rates (Catch per Unit Effort) increased; and Use of destructive fishing methods and gears reduced	• Number of reported and successfully prosecuted cases; and Trends in fish population structure (MAAIF/ NARO). Total fish catch ('000 tonnes) [8].	Management plan documents	Inclusion of action in work plans & budgets	467,528	2016	600,000
To promote the sustainable use and equitable sharing of costs and benefits of biodiversity;	Number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out	• Number and effectiveness of economic instruments supporting biodiversity conservation and sustainable use (NEMA)[9].	Evaluation reports	Inclusion in work plans and budgets. Support from funding partners	10	2018	30
		• Biodiversity accounting reflected national accounting and reporting processes and safeguard systems (UBOS, NEMA and NPA, development partners [10])	Evaluation reports	Inclusion in work plans and budgets. Support from funding partners	6	2021	12
	Partnerships with the private sector developed	• Private sector and local communities engaged in processing for value addition on plant-based products (UNCST, NARO, MoTIC, UEPB, NEMA and LGs). Districts with high value biodiversity enterprises [11].	Monitoring and evaluation reports	Successful private sector engagement	20	2019	60
	Framework for sharing the benefits from access to PGR in the country in place; Documents prepared on indigenous knowledge on PGR for food, agriculture and medicine; and Several community-based PGR management initiatives in place	• Mechanisms and initiatives for sharing benefits from access to PGR put in place and are being implemented (NARO, NEMA and UNCST). Sub-regions covered in the country based on UBOS/ UNHS 2016/17	Monitoring and evaluation reports	Engagement of stakeholders, policy instruments in place	5	2019	15
		• Detailed documentation of traditional knowledge, innovations and practices in PGR available (MDAs, Local governments; NARO and NCRI; MAAIF/ NAGRC&DB). Districts covered.	Annual monitoring reports	Inclusion in work plans and budgets.	Unknown	2021	60
	Regulatory framework for ABS in Uganda enforced with involvement of IPLCs improved.	• Capacity strengthening in bio-prospecting and bio-trade regulation, ABS, intellectual property rights, and awareness creation among stakeholders (NEMA, UNCST). Ministries, Agencies and Local Governments (MALG).	Annual monitoring reports	Inclusion in work plans and budgets.	5	2021	60

7 *The Water Quality Management Department Feasibility Studies 2021.*

8 *Fisheries Ecosystem Accounts for Uganda (NEMA 2021).*

9 *Policy and Institutional Review for the Biodiversity Initiative (NEMA 2017)*

To enhance awareness and education on biodiversity issues among the various stakeholders;	Behavioural change particularly among decision makers and the general public towards biodiversity conservation and sustainable use achieved; communication programmes and actions promoting social corporate responsibility, and develop stakeholder /public awareness programmes on biodiversity and its values increased	• Attitude and behavioural change among IPLCs and community groups sensitised on biodiversity conservation (Local governments), institutions/ districts, women's organisations/ mechanisms engaged (MGLSD and NEMA). Ministries, Agencies and Local Governments (MALG).	Annual monitoring reports	Inclusion in work plans and budgets.	5	2021	60
	Positive attitude and behavioural change among students and teachers in educational institutions; and Biodiversity integrated into the National School Curriculum	• Biodiversity incorporated into the education curricula at various levels within schools, and post school training programmes (NEMA). Districts covered.	Monitoring and evaluation reports	Inclusion in work plans and budgets.	Unknown	2021	60
	Participation in regional and global fora by Ugandans adequate and active.	• Financial and technical support resources mobilised at international/ regional level for biodiversity programs (MoFPED, MDAs and Local governments). Key informant discussions.	Annual monitoring reports	Inclusion in work plans and budgets. Resources mobilised	25%	2021	75%
To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment; and,	Participation and support of biotechnology by policy makers and general public increased	• Capacity of national to effectively contribute to biotechnology development and use, and Biosafety practices, and a clearing house mechanism (UNCST, NEMA). Key informant discussions.	Monitoring and evaluation reports	Engagement of stakeholders, policy instruments in place	25%	2021	75%
	Mechanisms for continuous Human and Infrastructural Resource Capacity Development, deployment retention put in place - Biotech tools developed and optimized for biodiversity conservation	• Accredited Biotechnology and Biosafety infrastructure developed and scientists trained (MAAIF/NARO, UNCST, Universities, NEMA). • **One in NARO-NARL Kawanda. Expanded to include Makerere University and three other NARO Institutes**	Monitoring and evaluation reports	Engagement of stakeholders, and resources mobilised	1	2021	5

10 *SEEA Accounts with NEMA and UBOS*
11 *NEMA 2019 – Sixth National Report*

	National Biotechnology and Biosafety Bill 2012 passed into law, National Biosafety Committee effectively supported to perform its functions	• A Biotechnology and Biosafety law and regulatory framework and institutional capacity in place (UNCST, NEMA, Parliament of Uganda, MWE, and MAAIF). **Bill awaiting revision & approval by cabinet.**	Monitoring and evaluation reports	Engagement of stakeholders, policy instruments, safeguards, in place	0	2021	1
	Compliance with national and international requirements increased	• Strengthened capacity for ABS issues by the Government and communities, Accession Instruments developed including Protocol on Liability and Redress is enforced (NEMA, UNCST, MAAIF, and MoTIC) **Ministries, Agencies & Local Governments (MALG).**	Monitoring and evaluation reports	Engagement of stakeholders, policy instruments in place	5	2021	60
	Biotechnology applications and use widely accepted by the Ugandan public	• Vibrant biotechnology and biosafety research applied in medicine, agriculture and Industry and biotechnology applications mainstreamed in national macroeconomic programmes (UNCST, NEMA, and NPA). **Macroeconomic model and annual reports**	Monitoring and evaluation reports	Engagement of stakeholders, policy instruments, safeguards, in place	0	2021	1
To promote innovative sustainable funding mechanisms to mobilize resources for implementing NBSAPII.	Guidelines and action plans for financing biodiversity in Uganda developed and implemented; Trends in financial resources mobilized; and Biodiversity Finance Plan developed and implemented.	Biodiversity Finance Plan updated mainstreamed into national fiscal policy frameworks, and into the NDP III (NPA, MoFPED, NEMA, development partners). **Finance Solutions increased from 8 to 20.**	Monitoring and evaluation reports	Inclusion in work plans and budgets. Support from funding partners	8	2018	15
	National financial resource allocation for biodiversity conservation increased.	Financial and technical resources mobilised (Government, development partners) for biodiversity conservation and management matched with the needs. (MoFPED, NEMA, Lead Agencies, development partners). **Resources mobilised as percentage of National Budget**	Monitoring and evaluation reports	Inclusion in work plans and budgets. Support from funding partners	1%	2015	5%
	Funding for biodiversity conservation increased	Effectiveness and efficiency of biodiversity finances mobilised in supporting biodiversity conservation, and the biodiversity financing gap for Uganda MoFPED, NEMA, development partners). **Value for money efficiency assessment.**	Monitoring and evaluation reports	Inclusion in work plans and budgets. Support from funding partners	Not available	2015	80%

Emerging issues – oil and gas, biofuels, and disaster risk management	Biodiversity conservation and ecosystem resilience maintained adjacent to oil exploration and production areas	Comprehensive implementation of environmental and social safeguards for oil and gas effectively and efficiently monitored, audited and enforced (NEMA, MEMD/PAU, UWA, NFA, LGs, IPLCs, CSOs, Oil Companies). **Key informant discussions.**	Monitoring, reporting, verification, auditing reports	Effective implementation of policy and regulations	80%	2021	100%
	Proportion of hydrocarbon fuel sources substituted by biofuels	Policy framework, regulatory system on environmental/ social safeguards in place for production and use of biofuels (MAAIF, MEMD, NEMA). **Ongoing framework included in MEMD undertakings for FY 2020/21**	Annual performance reports	Completion of actions in work plans and budget.	N/A	2020	100%
	Disaster Risk management strategy in place to address potential biodiversity risks and hazards	Disaster Preparedness Plan (including early warning systems, participatory assessment tools, effective capacity for all stakeholders) to protect biodiversity mainstreamed in key national, sectoral and district planning frameworks (OPM, NEMA, MWE, MTWA, UWA, NFA, LGs) Appropriate measures to protect biodiversity in place (OPM). **Guidelines developed, and performance reported in National Disaster Report**	Monitoring and evaluation reports	Effective implementation of policy and regulations	20%	2020	100%

4 Collecting MEAL Data

4.1 Collecting MEAL data

The MEAL data plan is focused on obtaining timely, high-quality data as the foundation for measuring progress, decision making and learning. The components of the MEAL data plan are outlined in Table 5. The major components are data quality, developing data collection tools, creating samples, using the data collection tools, and managing the data. Whereas the components indicated below are all important, the MEAL will adapt many of the best practices already in use in Uganda, among the institutions mentioned, and universities (Table 13).

The MEAL will build from the experience used in compiling existing databases. These databases on biodiversity include the National Biodiversity Databank at Makerere University, the Wildlife Conservation Society (WCS) database, the UBOS database consisting of System of Environmental-Economic Accounts (SEEA), the NEMA database, the National Biomass Survey database at the National Forestry Authority (NFA), and the Wildlife Database at the Ministry of Tourism, Wildlife and Antiquities (MTWA), and the National Parks and Wildlife Reserves database at the Uganda Wildlife Authority (UWA), among others.

Table 13: Components of the MEAL data plan

Component	Description of the criteria to be developed for the MEAL
Data quality	Validity
	Reliability
	Precision
	Integrity
	Timeliness
Developing data collection tools	
❍ Quantitative data (numerical) collection tools	Surveys including questionnaires, mobile data)
	Standard biodiversity inventories. A biodiversity inventory is a formal cataloguing of the occurrence and distribution of particular taxa in a defined geographic unit. The inventories are presented in the form of species lists for identification of: 1) rare or threatened species, 2) useful or harmful species, 3) geographical distribution of taxa, and 4) new species for research on future industrial and agricultural application. Current the IUCN with partners in the Uganda Wildlife Authority (UWA), National Forestry Authority (NFA), Wildlife Conservation Society (WCS), NEMA and Makerere University support this process .
	Others Experiments Tests, quizzes and other assessments Controlled/ quantitative observations Telephone interviews Face-to-face interviews Media and communications Secondary data from government databases, institutional databases
❍ Qualitative data collection tools (narrative/ non-numerical data)	Surveys using semi-structured interviews and focus group discussions
	Others Observations Interviews Document review Media and communications Secondary data from government databases, institutional databases

12 Inventories also provide the data for establishing biodiversity pattern and endemism, evolution, and phylogeny. Options for biodiversity inventories include; All Taxa Biodiversity Inventory (ATBI), All Biotic Taxonomic Inventory (ABTI), Rapid Biodiversity Assessment (RBA), Rapid Biodiversity Inventory (RBI), Biodiversity/Ecosystem Profile Assessment (B/EPA), and BioBlitz Inventory (BBI)

Creating samples	Random sampling
	Purposive sampling
Using data collection tools	Training
	Revision, implementation, field supervision
Managing data	Data entry
	Cleaning data
	Data storage and security
	Data retention and de-identification

4.2 Data quality

The five data quality standards for the MEAL were adopted from the Uganda Bureau of Statistics (UBOS) and the Data Quality Assessment Framework for the United Nations Statistics Division (IMF 2006) and USAID Performance Monitoring and Evaluation data quality Standards (USAID 2009). The five quality standards are:

4.2.1 Validity

Data are valid when they accurately represent what you intend to measure. In other words, the data you collect helps you measure the indicators you have chosen. When designing your collection methods, make sure they will collect data that will help you measure the indicators outlined. Also, the mix of collection methods should meet your needs for triangulation. The indicators provided in section three and the means of measure provide an indication on what the data is intended to measure.

(a).**Face Validity:** Face validity means that an outsider or an expert in the field would agree that the data is a true measure of the result. For data to have high face validity, the data must be true representations of the indicator, and the indicator must be a valid measure of the result.

For example: Result: Increased household income in a target district Indicator: Value of median household income in the target district. In this case, the indicator has a high degree of face validity when compared to the result. That is, an external observer is likely to agree that the data measure the intended objective. On the other hand, consider the following example: Result: Increased household income in a target district Indicator: Number of houses in the target community with tin roofs. This example does not appear to have a high degree of face validity as a measure of increased income, because it is not immediately clear how tin roofs are related to increased income. The indicator above is a proxy indicator for increased income. Proxy indicators measure results indirectly, and their validity hinges on the assumptions made to relate the indicator to the result. If we assume that 1) household income data are too costly to obtain and 2) research shows that when the poor have increased income, they are likely to spend it on tin roofs, then this indicator could be an appropriate proxy for increased income.

(b).**Attribution:** Attribution focuses on the extent to which a change in the data is related to the interventions. For example, an indicator that measures changes at the national level is not usually appropriate for a program targeting a few areas or a particular segment of the population. Consider the following: Result: Increased revenues in targeted municipalities. Indicator: Number of municipalities where tax revenues have increased by 5%. In this case, assume that increased revenues are measured among all municipalities nationwide, while the program only focuses on a targeted group of municipalities. This means that the data would not be a valid measure of performance because the overall result is not reasonably attributable to program activities.

(c). **Measurement Error:** Measurement error results primarily from the poor design or management of data collection processes. Examples include leading questions, unrepresentative sampling, or inadequate training of data collectors. Even if data have high face validity, they still might be an inaccurate measure of our result due to bias or error in the measurement process. Judgments about acceptable measurement error should reflect technical assessments about what level of reductions in measurement error are possible and practical. This can be assessed on the basis of cost as well as management judgments about what level of accuracy is needed for decisions. Some degree of measurement error is inevitable, particularly when dealing with social and economic changes, but the level of measurement error associated with all performance data collected or used by operating units should not be so large as to: (i) call into question either the direction or degree of change reflected by the data; or (ii) overwhelm the amount of anticipated change in an indicator (making it impossible for managers to determine whether progress. reflected in the data is a result of actual change or of measurement error). The two main sources of measurement error are sampling and non-sampling error. Data are said to be representative if they accurately reflect the population they are intended to describe. The representativeness of data is a function of the process used to select a sample of the population from which data will be collected.

Non-sampling error includes poor design of the data collection instrument, poorly trained or partisan enumerators, or the use of questions (often related to sensitive subjects) that elicit incomplete or untruthful answers from respondents. Consider the earlier example: Result: Increased household income in a target district Indicator: Value of median household income in the target district.

4.2.2 Data Reliability

Reliability is important so that changes in data can be recognized as true changes rather than reflections of poor or changed data collection methods. Consider the following example Indicator: Increased volume of agricultural commodities sold by farmers. A scale is used to measure the volume of agricultural commodities sold in the market. The scale is jostled around in the back of the truck. As a result, it is no longer properly calibrated at each stop. Because of this, the scale yields unreliable data, and it is difficult for managers to determine whether changes in the data truly reflect changes in volume sold.

Data are reliable when the collection methods used are stable and consistent. Reliable data are collected by using tools such as questionnaires that can be implemented in the same way multiple times. In practice, this means that if you use the same questionnaire to ask the same person the same questions and nothing else has changed, you should get the same answer. Consider this factor when you are designing your discussion guides and questionnaires for focus groups and interviews.

4.2.3 Precision

Data are precise when they have a level of detail that gives you an accurate picture of what is happening and enables you to make good decisions. When designing your data collection tools, make sure any subgroups you have identified are incorporated into the design. Accordingly, precise data are collected using appropriate sampling methods.

Precise data have a sufficient level of detail to present a fair picture of performance and enable management decision making. The level of precision or detail reflected in the data should be smaller (or finer) than the margin of error, or the tool of measurement is considered too imprecise. For some indicators, for which the magnitude of expected change is large, even relatively large measurement errors may be perfectly tolerable; for other indicators, small amounts of change will be important and even moderate levels of measurement error will be unacceptable.

4.2.4 Integrity

Data have integrity when they are accurate. Data should be free of the kinds of errors that occur, consciously or unconsciously, when people collect and manage data. Errors can enter your data when, for example, the questionnaire is implemented incorrectly or the data are not properly entered into the database.

Integrity focuses on whether there is improper manipulation of data. Data that are collected, analysed and reported should have established mechanisms in place to reduce manipulation. There are generally two types of issues that affect data integrity. The first is transcription error. The second, and somewhat more complex issue, is whether there is any incentive on the part of the data source to manipulate the data for political or personal reasons.

Transcription error refers to simple data entry errors made when transcribing data from one document (electronic or paper) or database to another. Transcription error is avoidable, and agencies should seek to eliminate any such error when producing internal or external reports and other documents. When the data presented in a document produced by an operating unit are different from the data (for the same indicator and time frame) presented in the original source simply because of data entry or copying mistakes, a transcription error has occurred. Such differences (unless due to rounding) can be easily avoided by careful cross-checking of data against the original source. Rounding may result in a slight difference from the source data but may be readily justified when the underlying data do not support such specificity, or when the use of the data does not benefit materially from the originally reported level of detail. Technology can help to reduce transcription error. Systems can be designed so that the data source can enter data directly into a database— reducing the need to send in a paper report that is then entered into the system. However, this requires access to computers and reliable internet services. Additionally, databases can be developed with internal consistency or range checks to minimise transcription errors. The use of preliminary or partial data should not be confused with transcription error. There are times where it makes sense to use partial data (clearly identified as preliminary or partial) to inform management decisions or to report on performance because these are the best data currently available.

Manipulation should be considered (i) if there may be incentive on the part of those that report data to skew the data to benefit the project or program and managers suspect that this may be a problem, (ii) if managers believe that numbers appear to be unusually favourable, or (iii) if the data are of high value and managers want to ensure the integrity of the data. There are a number of ways in which managers can address manipulation. First, simply understand the data collection process. A well organised and structured process is less likely to be subject to manipulation because each step in the process is clearly documented and handled in a standard way. Second, be aware of potential issues. If managers have reason to believe that data are manipulated, then they should further explore the issues. Managers can do this by periodically spot checking or verifying the data. If there is substantial concern about this issue, managers might conduct a Data Quality Assessment (DQA) for the AO, IR, or specific data in question. Several government agencies with the support of the Uganda Bureau of Statistics (UBOS) have established a DQA for data submitted to the national statistics office; the same DQA can be employed for the NBSAP II.

4.2.5 Timeliness

Timely data should be available when you need it for learning that informs decisions and for communication purposes. Data are not useful to you when they arrive too late to inform these processes. This factor plays a significant role in your planning for data collection, which is the reason for the column in the PMP on timing. Design your data collection efforts to coincide with when you need to make decisions, and report to stakeholders. Timeliness should also be factored into the

design and implementation of your tools. You want to make sure that your design is as efficient as possible and only collects the data that you absolutely must collect.

Data should be available and up to date enough to meet management needs. There are two key aspects of timeliness. First, data must be available frequently enough to influence management decision making. For performance indicators for which annual data collection is not practical, operating units will collect data regularly, but at longer time intervals. Second, data should be current or, in other words, sufficiently up to date to be useful in decision-making. As a general guideline, data should lag no more than three years. Certainly, decision-making should be informed by the most current data that are practically available. Frequently, though, data obtained from a secondary source, and at times even donor or government-funded primary data collection, will reflect substantial time lags between initial data collection and final analysis and publication. Many of these time lags are unavoidable, even if considerable additional resources were to be expended. Sometimes preliminary estimates may be obtainable, but they should be clearly flagged as such and replaced as soon as possible as the final data become available from the source.

4.3 Developing data collection tools

4.3.1 Basic data collection tools

The basic data collection tools include the following (INTRAC 2017):

i. Interviews: Interviews are probably the most common tool used in planning, monitoring and evaluation. They can be carried out with one person at a time (individual interviews) or groups of people. They can be administered formally or informally. They can be carried out face-to-face or through remote media such as telephone and Skype. Interviews can also be conducted through written questions via letters or email. Interviews may be structured, semi-structured or open-ended. Structured interviews are based around a core set of questions that are always asked in the same order. Semi-structured interviews also contain a core set of questions, but allow the interviewer to ask supplementary questions, or change the order in which questions are asked.

ii. Focus group discussions: Focus group discussions (FGDs) are facilitated discussions, held with a small group of people who have specialist knowledge or interest in a particular topic. They are used to find out the perceptions and attitudes of a defined group of people. FGDs are typically carried out with around 6-12 people, and are based around a short list of guiding questions, designed to probe for in-depth information. FGDs are often used to solicit the views of those who would not be willing or able to speak up at larger group meetings. They may also be used to access the views of minority or disadvantaged groups, such as women, children or people with disabilities.

iii. Observation: At its most simple, observation involves 'seeing' things – such as objects, processes, relationships, events – and formally recording the information. There are different types of observation. Structured or direct observation is a process in which observations are recorded against an agreed checklist. Expert observation is usually carried out by someone with specific expertise in an area of work, and involves the expert observing and recording information on a subject. Observation may also be carried out as a participatory exercise. Where this is the case the intended beneficiaries of a project or programme are involved in planning an observation exercise, observing, and discussing findings.

iv. Photography and video: Photographs and videos show still or moving images. Photographs can be used on their own, but are more often accompanied by written captions, providing additional information. Videos are often accompanied by a commentary. The use of photography and video has become increasingly common within M&E over recent years. This is partly because of

improvements in mobile phone technology, which has increasingly enabled people to produce cheap, high quality audio-visual products.

v. Case studies and stories of change: A case study is not a data collection tool in itself. It is a descriptive piece of work that can provide in-depth information on a topic. It is often based on information acquired through one or more of the other tools described in this paper, such as interviews or observation. Case studies are usually written, but can also be presented as photographs, films or videos. Case studies often focus on people (individuals, households, communities). But they can also focus on any other unit of analysis such as locations, organisations, policies or the environment. Stories of change are similar to case studies. However, they have a specific focus on change, and are only usually developed after a project or programme has started.

vi. Surveys and questionnaires: These are designed to collect and record information from many people, groups or organisations in a consistent way. A questionnaire is a form containing questions. It may be a printed form or one designed to be filled in online. Questionnaires may be administered in many different ways. A survey, by contrast, is normally a large, formal exercise. It typically consists of three different aspects: an approved sampling method designed to ensure the survey is representative of a wider population; a standard questionnaire that ensures information is collected and recorded consistently; and a set of analysis methods that allow results and findings to be generated

4.3.2 Quantitative and qualitative data collection tools

Operationally, the data collection tools are categorised into quantitative data collection tools and qualitative data collection tools.

Quantitative data collection tools

Frequently, quantitative data is collected using a questionnaire. However, quantitative data is also generally obtained from secondary data bases of institutional statistics on production, and through case studies. Questionnaires are a structured set of questions designed to elicit specific information from respondents. The questions may be open ended or closed ended. Typically, questionnaires administer closed ended questions because this makes it easier for responses to be coded numerically allowing for statistical analysis. Closed ended questions are divided into: (i) Numerical; (ii) Two-response questions (Yes or No); (iii) Multiple choice questions; and (iv) Rating or likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree)

Qualitative data collection

Qualitative data collection tools generally include semi-structured interviews and focus group discussions. Qualitative data collection tools are designed to explore and understand the rich depth and context of the respondent's perspectives, opinions and ideas. While questionnaires are highly structured and scripted, semi-structured interviews and focus group discussions more closely resemble a conversation. Semi-structured interviews are guided discussions between an interviewer and a single respondent designed to explore and understand the rich depth and context of the respondent's perspectives, opinions and ideas. Focus group discussions are guided discussion between respondents in a group. It is a qualitative data collection tool designed to explore and understand the rich depth and context of a group's perspectives, opinions and ideas.

4.4 Sampling plan

A sample is a subset of the population or community that you choose to study that will help you understand the population or community as a whole. Sampling can be divided into two basic types: random sampling and purposive sampling (MEAL DPro. 2019).

4.4.1 Random sampling

Random sampling is used when you plan to use quantitative methods and analysis. This sampling approach is used when you need confidence that what is true for your sample is likely true for the entire population (or a subgroup of the larger population). Random sampling is a probability sample that includes respondents selected from a list of the entire population of interest so that each respondent has an equal chance of being selected.

Steps of random sampling

Step 1: Defining your population and the sampling unit.
A population is a set of similar people, items or events that is of interest for some question or experiment. Once you are clear on your population, you need to clearly identify your sampling unit. The sampling unit is the individual person, category of people, or object from whom/which the measurement (observation) is taken.

Step 2: Choosing a method to calculate your random sample.
Once you have identified your population and your sampling unit, you are ready to start calculating your random sample. There are different random sampling methods that can be used to calculate the sample.

Table 14: Methods of random sampling

Method	Description
Simple random sample	Every unit in your population has an equal chance of being selected
Systematic sample	A process of listing and numbering all potential subjects and then selecting every 10th person, for example, until you have reached your sample size
Cluster sampling	The population is divided into naturally occurring clusters such as geographical areas, schools or places of employment. All the clusters are listed, and a sample of clusters is randomly selected. In some cases, all subjects in the cluster are included in the data collection. In other cases, teams will conduct a two-stage cluster sampling process in which participants are chosen from within the cluster and serve as a sample group for the cluster.

Step 3: Determining your sample size
Determining your sample size is important because the larger the sample size, the more likely it is that your sample will accurately represent the population. How well a sample represents the population is gauged by two important statistics: the margin of error and the confidence level. The margin of error expresses the maximum expected difference between the true population and the sample estimate. To be meaningful, the margin of error should be qualified by a probability statement (often expressed in the form of a confidence level). The confidence level is the percentage of all possible samples that can be expected to include the true population parameter.

Step 4: Selecting your sample units
The first step in selecting your sample units is to access a sample frame. A sample frame is a specific list of units (men, women, households, individuals, children, adolescents, etc.) that you will use to generate your sample. Examples could be a census list or a list of employed teachers, a registration log or a list of project participants.

4.4.2 Purposive sampling

Purposive (selective) sampling is used primarily to collect qualitative data. In this kind of sampling, sample units are deliberately, rather than randomly, selected to reflect important features of groups

within the sampled population. Purposive sampling is a non-probability sample where sampling units that are investigated are based on the judgement of the researcher. Sampling units are selected based on characteristics of a population and the objective of the study. Purposive samples are used to understand the experience or perspective of a particular group by gaining a "deep" understanding at the level of the individual participant. The information collected from purposive samples can provide a much deeper understanding of what is happening in your specific context. It helps gain an understanding of the change you see, unpacking the meaning of the change and developing explanations for the change. These rich insights help you generate ideas, concepts and theories; however, because purposive sampling is non-random, the data collected from the sample cannot be generalised to the general population.

Steps to identifying a purposive sample include:

Step 1: Identify the type of purposive sampling you desire

As is the case with random sampling, start by clearly defining your population and sample frame. Establish sampling criteria that are very clear about the sampling units you intend to use. The clearer you are about your criteria, the more valid and reliable your study will be.
Next, select the sampling method you intend to use to identify your purposive sample. There are different methods of purposive sampling (Table 15).

Table 15: Purposive sampling methods

Method	Description
Best- and worst-case sampling	Compares communities or individuals who are considered best and worst cases based on certain characteristics. (i.e. most vulnerable and least vulnerable).
Typical case sampling	Provides an understanding of the general scenario by choosing those communities or individuals who are considered average.
Critical case sampling	Collects information from communities or individuals who are important for understanding a particular context or situation.
Quota sampling	Attempts to collect information from participants with characteristics of interest according to estimates of their proportion in the population.
Snowball or chain sampling	Collects information from participants in stages, starting with respondents known to the evaluators or partners and then asking those respondents for recommendations of who else to speak to. The advantage of this method is that it helps you identify sources of information previously unknown to you.

Step 2: Determine your sample size

Sample size is calculated very differently in purposive sampling than in random sampling. Often, qualitative data are used to triangulate, or cross-check, quantitative or other qualitative data. Thus, purposive sample sizes must be considered with triangulation needs in mind. You need to conduct enough focus group discussions for interviews to test, reinforce and confirm the patterns that are emerging. For example, if you use the best- and worst-case purposive sampling method to conduct focus group discussions on women's opinions about access to water points, plan to conduct at least two or three focus group discussions to collect information from each perspective (best case and worst case).

Purposive sampling may be undertaken if the data analysis plan requires that you compare subgroups, you will require a larger sample, and the size increases exponentially the more subgroups you have. In case of budget constraints and resource limitations there may be a need to limit the number of subgroups you compare (and associated data collection events) if you lack the resources to implement data collection events.

4.5 Using data collection tools

The basic steps for using the data collection instruments are:
Step 1: Translate your data collection tools to local language
Step 2: Train data collectors and test your tools. Written instructions accompanying your collection tool are essential. Often, additional training is also needed, for both new collectors and as a refresher for those who are skilled.
Step 3: Revise and finalise your tools. After you have tested your tool, any revisions can be incorporated into your final document.
Step 4: Plan for implementation and data management. Allow enough time for each data collection event. Choose a venue for interviews and focus group discussions that provides privacy and an appropriate level of comfort. Identify how you intend to manage the data you collect.

4.6 Managing data

Data is managed throughout the four phases of its life; entry, cleaning, storage and security, and retention and disposal.

4.6.1 Data entry

Data entry refers to putting the data you have collected into a form you can use by entering it into an electronic database. Effectively using a database improves your ability to: (i) access, manage and share data; (ii) improve data security and protection; (iii) integrate data more effectively; (iv) manage data quality; and (v) facilitate timely decision-making.

The commonest statistical packages for data entry are Microsoft Excel, Statistical Packages for Social Scientists (SPSS), STATA, General Algebraic Modelling Systems (GAMS) and E-Views for macroeconomic data, and several statistical packages for biological and chemical statistics including GENSTAT. Once a decision is made on which database will be used, the next step is to enter the raw data into the database. In practice, many projects need two databases, one that manages quantitative data and one that manages qualitative data (MEALPro 2019).

The critical step is to create a data entry protocol. A standard data entry protocol that includes guidance on: (i) the data entry process, outlining the rules and instructions for entering data into the database; and the timing of data entry to ensure that data are available to meet reporting requirements and decision-making needs. Then the data entry can be undertaken.

4.6.2 Cleaning data

It is important to confirm that the data are correct, complete and of the highest quality. With the increased use of digital devices to collect data, there is less risk of the transcription errors that result when transferring paper-based data to databases. Teams should invest in data cleaning to help ensure that they are accurate and free of errors. The purpose of data cleaning is to detect and remove errors and inconsistencies from data to improve its quality. The most common data cleaning methods are highlighted in Table 16.

Table 16: Most common data cleaning methods

Method	Description
Conducting quality checks	Randomly selecting and comparing raw data to the electronically entered data to check for data-entry and coding errors. Teams that use digital devices to collect data can skip this step.
Identifying outliers	Checking whether there are unexpected entries in the data. This could mean that the person entering data does not understand the process and has made a coding error.
Removing duplicate entries	Confirming that each data record (questionnaire, form, etc.) has a specific, unique identification number and that no numbers have been repeated in the database

Keep a record of data errors, and review any observed trends and patterns in the errors with the data entry team to improve future results. In an environment where data is being entered automatically through electronic devices, this check should happen on the first day of data entry to make sure any systematic problems are identified and addressed.

4.6.3 Data storage and security

Data must be kept secure and protected against unauthorised changes, copying, tampering, unlawful destruction, accidental loss, improper disclosure or unauthorised transfer. The data storage and security measures you put in place will naturally vary according to your situation, the level of risk assessed, the nature and sensitivity of the data you are collecting, and the local security and logistical conditions. Risks can be as simple as recurrent problems with electricity supply—requiring regular backup policies—or as complicated as the need to create a special, secure database for particularly sensitive information. It is likely that your organisation will already have a policy on issues such as the physical security of data, information technology security (i.e. the use of passwords), and the duties of staff to use data with discretion. The data storage facilities and security are achieved by putting in place and promoting an archiving, backup and recovery programme. To strengthen data storage, and backup systems high capacity data storage systems need to be installed and functional data backup systems.

4.6.4 Data disposal

When it has been decided that data is no longer needed, all records and backups should be disposed of or adjusted so that it is impossible to identify the data respondents. The data disposal method to use to destroy data and records will depend on: (i) applicable laws; (ii) organisation's policies and donor requirements; (iii) local operating context; (iv) sensitivity of the data that require disposal; and (v) volume of data that require disposal. The disposal method will also depend on the format: (i) any paper records should be destroyed by burning or shredding. They should not be able to be used again or reconstructed in the future; and (ii) destroying electronic records should be the responsibility of an IT professional with knowledge of how to eliminate all traces of the files. Disk drives and databases should be completely purged and data on rewritable media—such as CDs and DVDs, audio and video tapes—completely erased before reuse.

If you choose to retain data following the end of project activities, you can conduct a de-identification process to maintain respondents' anonymity. Anonymization and pseudonymization are two techniques that you can use to de-identify data. Anonymization refers to stripping data of any identifiable information, making it impossible to derive insights on a discrete individual, even by the party that is responsible for the anonymization; and pseudonymization is carried out by replacing personally identifiable information fields with a code that protects a respondent's identity. However, with the use of a data "key," the individual's identity can be accessed.

4.7 Existing approaches and protocols for managing data

The National Biodiversity DataBank (NBDB) – Makerere University

The NBDB was established in 1990. The vision of the NBDB is to be the leading centre of excellence in quality biodiversity and environmental data collection, processing and management in Uganda. The mission of the databank is to inventory and monitor the national biological resources and to provide biodiversity information to those interested in the conservation and sustainable utilization of these resources. To date, BDB application contains: (i) over 8,000 species entries that include taxonomy, regional and global conservation status, habitat specialism, breeding and growth form; (ii) about 140,000 georeferenced species locality including dates of recording, abundance, habitat information and recorders/observers' information; (iii) a gazetteer file with about 7,000 entries of places of biological recording with geographic coordinates; (iv) data on protected areas and administrative units;(v) Data on environmental and climatic variables; (vi) citations where these have been used

to computerize species data; and (vii) publications and reports based on the available datasets e.g. State of Uganda's Biodiversity (2000 to 2017), The Bird Atlas of Uganda (2005) and The East African Bat Atlas (2009). The NBDB is directly under the jurisdiction of the Principal, College of Agricultural and Environmental Sciences, Makerere University as its overall head. In the execution of this mandate, the principal is helped by the NBDB Advisory Board and the NBDB Technical Advisory Committee that are charged with giving overall guidance and approving the direction of the NBDB. The day-to-day operations of the NBDB are assigned to a management team/staff headed by a Coordinator and assisted by a Data Manager, Research Scientists, Secretary and Interns. The Coordinator is a member of the Steering Committee. Both the Coordinator and Steering Committee Report to the Principal although the Coordinator also reports to the Steering Committee.

Inventories also provide the data for establishing biodiversity pattern and endemism, evolution, and phylogeny. Options for biodiversity inventories include; All Taxa Biodiversity Inventory (ATBI), All Biotic Taxonomic Inventory (ABTI), Rapid Biodiversity Assessment (RBA), Rapid Biodiversity Inventory (RBI), Biodiversity/Ecosystem Profile Assessment (B/EPA), and BioBlitz Inventory (BBI)
The National Animal Genetic Resources Centre and Data Bank (NAGRC&DB) was established by the Animal Breeding Act, 2001. Among the services carried out by the NAGRC&DB, it also carried out Germplasm collection (semen, eggs, embryos), processing and storage for livestock.

National Crop Genetic Resource Centre

The Plant Genetic Resources Centre (PGRC) is an institution under the National Agricultural Research Laboratories (NARL) of the National Agricultural Research Organisation (NARO). The mission of the Centre is to ensure the conservation, management and sustainable use of Uganda's Plant Genetic Resources for Food and Agriculture (PGRFA) while optimising their full potential in contributing to national development goals. The strategic objectives are: (i) to collect and maintain stocks of diverse plant germplasm; (ii) enhance utilisation of germplasm through characterization evaluation and genetic enhancement; (iii) to develop information and documentation systems and strengthen linkages among stakeholders; (iv) to promote community based and on-farm conservation of PGR as a basis for sustainable natural resource management; (v) to contribute to development and promotion of acceptable germplasm exchange mechanisms; and (vi) to enhance the role of the Botanic Gardens in National development.

4.8 Ensuring accountability and learning in data collection

Depending on the NBSAP action, and in this case the performance/ context indicator, the data collection needs to always employ participatory data collection techniques. For qualitative data collection, the assessment of perceptions based on scales always needs to create a benchmark based on community rankings for performance. Therefore, the scales need to be calibrated to capture the scale that the community would allocate to the scores being assessed. In some cases, community members can be allowed to participated directly in developing resource maps, in assessing changes in extent of the ecosystems, and ecosystem services.

In case of data collection where experts are required to collect physical data on pollution extent, species diversity, ecosystem extent, and change, and socioeconomic data, the community can be directly engaged through the process of administering the instrument. Employing more participatory approaches in hotspot mapping, and focus group discussions, and/or key informant discussions, using local names for description of species, and always seeking the ecosystem services associated with an aspect of biodiversity. This process of participation generates learning and allows the stakeholders to understand their role in biodiversity conservation, and the commitment of the project/ programme or plan to continually engage them. Participatory data collection can also serve as a basis for accounting by ensuring that the baselines, and benchmarks are known, and the correct effort of conservation is measured for the actions undertaken. Collectively, the community can help characterise the effort and impacts of the actions of different actors.

5 Analysing MEAL Data

5.1 Analysis of MEAL data; non-statistical, descriptive, and statistical analyses

Monitoring, Evaluation, Accountability and Learning data is analysed in three steps; (i) analysis, (ii) visualisation, and (iii) interpretation. Data analysis is the process of bringing order and structure to the collected data. Individual pieces of data are converted into information for use. The analysis is accomplished by applying systematic methods to understanding data including looking at trends, groupings, or statistical relationships between different sets of data.

Data visualisation is the process of putting the data into a chart, graph, or another visual format that helps to inform the analysis. Data visualisation also helps with the interpretation and communication of results. Data interpretation is the process of attaching meaning to the data. Interpretation requires reaching conclusions about the generalisation, correlation, and causation and is intended to answer key learning questions about the project.

As much as possible, the MEAL data is analysed in a participatory manner with stakeholders, some of the primary data analysis can begin in the field with communities, IPLCs and other stakeholders. Similarly, the data interpretation needs to take cognisance of the perspective of the beneficiaries of the biodiversity conservation action. The results must show accountability by being weighted to only the effort of the actions undertaken and their impact, so that the contribution of others is considered separately. The results obtained need to be shared and jointly synthesised to provide learning for improved performance after the monitoring and evaluation. The three stages of MEAL data analysis are described further below.

There are generally two types of data analysis; quantitative analysis and qualitative analysis. Quantitative analysis consists of descriptive, and inferential analysis. Quantitative analysis is conducted for four categories of data as shown in Table 17, nominal data, ordinal data, interval data, and ratio data. Analysing qualitative data entails reading a large number of transcripts looking for similarities or differences, and subsequently finding themes and developing categories (Wong 2008). Given that qualitative data can also include pictorial display, audio or video clips, data analysis is a dynamic, intuitive and creative process of inductive reasoning, thinking and theorising. The categories and complexity of qualitative analysis is highlighted to herein based on three data complexity, code data, index data and frame data.

Table 17: Types of data analysis to be conducted

Types	Components	Meaning
Quantitative analysis	Descriptive analysis	Shows or summarises data in a meaningful way so that patterns begin to emerge ❍ Measures of frequency (frequency tables, cross tabulation tables) ❍ Measures of central tendency (mean, median, mode) ❍ Measures of variability (range, standard deviation)
	Inferential analysis	Enables for statistical generalisation of data about populations from which the data is drawn ❍ Comparing significance of differences between groups (t-tests, ANOVA) ❍ Examining differences between variables to determine correlation and causation (regression analysis). Note correlation is also a statistical measure. Use of control groups and mixed method approaches.
	Levels of measurement of quantitative data	Nominal – can only be counted but nothing else e.g. gender religion, etc. Ordinal data – have order can be calculated but cannot be used to determine average e.g. satisfaction, agreement. This uses scales Interval data – numbers based on data points on an interval scale e.g. temperature, time. Ratio data – expressed in numbers, ratio numbers are nonnegative, e.g., height weight etc.

Qualitative analysis	Code data	Begin to identify themes (deductive coding, inductive coding)
	Index data	Match concepts and relevant quotations to the codes you have identified. Essentially tag the contents from the transcripts using codes.
	Frame data	A matrix which organises data according to categories that are useful e.g. an x, y matric of village size by village number.

5.2 Quantitative data analysis

5.2.1 Level of measurement

Proper analysis of data requires understanding the level of measurement. Data are classified into four fundamental levels of measurement: nominal data, ordinal data, interval data, and ratio data (Table 18). Nominal data can be counted but no other analysis can be conducted. Ordinal data can only be counted, and in limited cases it can be used to calculate an average for data collected. Interval data can be expressed in numbers and that can be analysed statistically. Ratio data can be expressed in numbers, with the added element of an "absolute zero" value. A scale with absolute zero is the most informative and accurate scale to use for measurement, but only a ratio scale has an absolute zero. For example, when counting money, UGX 10,000 is twice the amount of UGX 5,000 and UGX 0 is the complete absence of money. So, money can be measured with a ratio scale.

Table 18: Levels of measurement

Level	Description	Examples	Use scenario
Nominal data	Data collected in the form of names (not numbers) and which are organised by category.	Gender, ethnicity, religion, place of birth, etc.	Nominal data can be counted, but not much else can be done. Information collected from nominal data is very useful, even essential, as it enables basic descriptions of your project.
Ordinal data	Data that have an order to them. They can be ranked from lesser to greater.	Scales measuring levels of satisfaction or levels of agreement	Strictly speaking, ordinal data can only be counted. However, a consensus has not been reached among statisticians about whether you can calculate an average for data collected using an ordinal scale.
Interval data	Data expressed in numbers and that can be analysed statistically.	Temperature, time	Distances between data points on an interval scale are always the same. (This is not always the case with ordinal scales.) That means that interval data can be counted and you can undertake more advanced statistical calculations for interval data sets.
Ratio data	Data expressed in numbers, with the added element of an "absolute zero" value.	Height, weight	This means that ratio data cannot be negative. Because ratio data have an absolute zero, you can make statements such as "one object is twice as long as another."

Source: MEALPro (2019)

5.2.2 Analysing quantitative data using descriptive statistics

There are three categories of calculations that are used to analyse data using descriptive statistics: (i) measures of frequency, (ii) Measures of central tendency and (iii) Measures of variability. A measure of frequency indicates how many times something occurred or how many responses fit into a particular category. You can analyse frequencies by using two tools: frequency tables and cross-tabulation tables. The tool you use will depend on whether you are measuring the frequency of the response values of a single group (frequency table) or multiple groups (cross-tabulation table). Measures of central tendency help identify a single value around which a group of data is arranged.

There are three tools used to measure central tendency are the *Mean* refers to the average of a data set, identified by adding up all the values and dividing by the whole; the *Median* is the middle point of a data set, where half the values fall below it and half are above; and the *Mode* is the most commonly occurring answer or value.

Measures of variability show the spread or the variation of the values in a data set. For the MEAL, two tools will be used to calculate the variability of the data set: the range and the standard deviation. The range is the difference between the lowest and highest values of a data set. The range is easy to calculate by subtracting the lowest value in the data set from the highest value. The standard deviation calculates how far responses differ (deviate) from the mean (average). A high standard deviation indicates that the data set's values differ greatly from the mean. A low standard deviation means that values are close to the mean. A zero standard deviation means that the values are equal to the mean.

5.2.3 Inferential analysis

Inferential statistics show the patterns you see in the sample can be true for the wider population. And, you may want to be able to show, statistically, whether the project is causing the changes you are seeing. This type of analysis is done by calculating inferential statistics. It is important to note that inferential statistics are only possible when you have a good random sample that generates high-quality data. In particular, demonstrating causation is usually only possible when your MEAL system is designed to facilitate this analysis. Inferential statistics require additional skills, and they provide some very interesting understandings of your results. Inferential analysis helps to: *(i) Compare the significance of differences between groups: Determining whether the differences that exist between subgroups are large enough to matter; and (ii) Examine the significance of differences between variables to determine correlation and, potentially, causation:* Determining whether your activities contributed to the changes you are seeing.

(i) Exploring the significance of differences between subgroups:

Statistical tests such as t-tests, analysis of variance (ANOVA), and chi-square tests help you determine whether the differences between the descriptive statistics for subgroups are significant. Some inferential statistics calculate whether differences in frequencies are significant, while others calculate whether differences in averages are significant. The Table 19 shows the three primary tests used to explore the differences between subgroups. It is easiest to understand these tests by first examining the question they aim to answer.

Table 19: Exploring the significance of differences between subgroups

Analysis method	Description
t-test	❍ The t-test compares the average for one subgroup against the average for another subgroup. ❍ It can also compare differences in averages at two points in time for the same subgroup. ❍ If the result of the test is statistically significant, you can potentially consider it as a project impact.
Analysis of variance	❍ The ANOVA test compares the average result of three or more groups to determine the differences between them.
Chi-square test	❍ The chi-square test works with frequencies or percentages in the form of a cross-tabulation table. ❍ It helps you see the relationship (if any) between the variables and to know whether your results are what you expect to see.

The tests in Table 19 indicate whether there is a statistically significant relationship between two groups, which may give you some early indication of the effects of your project. But, the limitation of t-tests, ANOVA and chi-square tests is that they do not tell you which variables influenced that relationship and which did not. This is where regression analysis can help.

(ii) Regression analysis

Regression analysis gives you an understanding of how changes to variable(s) affect other variable(s). Regression analysis is a way of mathematically sorting out which of those (independent)] variables does indeed have an impact (on your dependent variable). Regression analysis gives the understanding of correlation. Regression analysis will provide a sense of how closely your variables are related.

(iii) Correlation analysis

Correlation is a statistical measure (usually expressed as a number) that describes the size and direction of the relationship between two or more variables. For example, regression analysis could possibly tell you the different correlations between the reduction in waterborne disease rates (your independent variable) and the use of two prevention methods: provision of potable water and handwashing campaigns (your dependent variables). The analysis will also give you an understanding of the strength of this correlation. If it is strong, then you can be more confident that your intervention is related to the changes you are seeing. It is important to note that correlation does not necessarily imply causation.

(iv) Causation analysis

Causation refers to when changes to one or more variables are the result of changes in other variables. For example, if your analysis shows a correlation between handwashing messaging, improved handwashing practices, and the reduction of waterborne disease, you can't necessarily say that your project caused these changes.

It is extremely difficult to prove causation—saying with 100 percent certainty that your project caused a particular change. There are, however, two strategies that can be used to increase your confidence that causation exists between variables:

- ***Counterfactuals and control groups:*** The use of counterfactuals and control groups is a strategy usually used in impact evaluations. These evaluations are designed to understand cause and effect between your project and the outcomes you see. The counterfactual measures what happens to the control group, a group of people who are not involved or impacted by your project. During analysis and interpretation, you compare the results of your project sample with the control group in an effort to demonstrate causation. This kind of study requires a great deal of planning and structure, including a rigorous sampling design. The problem with this strategy is that not all projects have the resources and capacity to design a rigorous impact analysis that includes control groups.

- ***Mixed-method approaches:*** Many experts believe that a higher level of certainty about causation is possible using a mix of evidence to triangulate your results. For example, you might gather data through a quantitative questionnaire; qualitative semi-structured interviews; and direct, systematic observation at the project site. If these three methods of data collection and the resulting analysis all lead you to the same conclusion, then you have triangulated your data and potentially demonstrated stronger grounds for causation.

(v) Contribution analysis

Contribution is an alternative to causation analysis. Contribution analysis is used in situations where rigorous sampling and data collection processes are not possible and it would be unrealistic to attempt to establish statistical causation. Contribution analysis is a process of clearly outlining a contribution "story" by transparently following these six steps:

(i) Clearly define the questions that need to be answered
(ii) Clearly define the project's theory of change and associated risks to it
(iii) Collect existing evidence supporting the theory of change (your conceptual frameworks)
(iv) Assemble and assess your own project's contribution story

(v) Seek out additional evidence where necessary
(vi) Revise and conclude the contribution story

By following and documenting these steps, contribution analysis can demonstrate that a project contributed to change.

5.3 Qualitative data analysis

Qualitative analysis is working with words that combine to become ideas, opinions and impressions. The objective of qualitative analysis is to identify key themes and findings, including among subgroups if you have them, from all the notes you have collected from your interviews and focus group discussions. Qualitative analysis begins with the raw data, which can take many forms. The raw data includes recordings of interviews, and notes from focus group discussions. The raw data need to be organised so that they are easy to review. When the raw data has been organised, the following steps are followed:

Step 1: Code data: Coding is a process that helps reduce the large quantity of qualitative data you have into manageable units. The coding process is iterative, meaning that you will learn as you code content. Reading the data might trigger new ideas, which lead you to review the data again, and thus make new findings. To begin coding, read through all your transcripts at least once so you get a sense of the entire package. The approaches to coding are:

- ***Deductive coding*** is an approach to coding in which codes are developed before the data is reviewed. During the review, the codes are applied to the data. Deductive coding uses labels in your data that relate to the questions asked in the tool. Deductive coding helps to organise codes and analysis, while inductive coding helps you identify new ideas. Deductive coding rarely identifies all of the codes you will need before you analyse your data.

- ***Inductive coding*** is an approach to coding in which codes are developed as the data is reviewed, using the specific words used by participants themselves. Codes are built and modified during the coding process itself. Inductive coding, on the other hand, means that you create codes based on the themes that emerge naturally from the participants' experience as recorded in your data. In this case, you are using the participants' own words to create your codes. It is useful to practice both of these coding methods.

Step 2: Index data. As you begin reading your transcripts, you may need to match concepts and relevant quotations to the codes you have identified. This is called indexing, a step often used when you are sorting through large amounts of qualitative data. When you index your data, you essentially tag the content from your transcripts using the codes from the previous step. Then, you create a list of those tags and where they are in the data in the form of an index.

Once you have indexed your content, you will be able to review your codes and more easily find the different concepts and relevant quotes related to the codes within your transcripts. You will also be able to identify how dense a code is; how often the code appears and where, relative to the other codes you created. Indexing is particularly important if you need to go back to find a noteworthy idea or quotation when you are communicating your results.

Step 3: Frame data. The beginning is to put the qualitative data you are working with into a form that can be understood. The most frequently used method of describing qualitative data is a matrix—sometimes called the framework approach—which organises your data according to categories that are useful to you. The structure of a matrix will differ depending on the type of data collection you are doing. For example, a matrix including data from semi-structured interviews may show the respondent along the left column and the questions along the top row. Responses are

included in the box corresponding to the question and the respondent. Data resulting from focus group discussions may be structured in another way, depending on the nature of the group and your information needs. For example, you could create one matrix for one particular group in one location, another for one subgroup within the focus group in that location, and even one comparing the results of subgroups in various locations.

Qualitative analysis is flexible. You can use or adapt the steps described above to fit your context and situation. Critically, it is just as important to incorporate a wide variety of perspectives into your analysis as it is in the data gathering itself. Thus, many experts advise doing this analysis as a participatory workshop in which you involve different stakeholders.

5.4 Data visualisation

Data visualisation is the process of showing your data in a graph, picture or chart. Because of the way the human brain processes information, using pictures, maps, charts or graphs to visualise large amounts of complex data is easier than poring over spreadsheets or reports. Data visualisation helps share detailed insights into data in the quickest and most efficient way. Data visualisation consists of analysis i.e. discovering relationships between, and patterns in, the data, interpretation which is understanding and reflecting on patterns in the data set and then inferring new information based on that interpretation, and communication as a means of making technical, statistical analysis understandable to people with limited technical knowledge, and sharing your information in ways appropriate to your stakeholders.

The steps of data visualisation are:

Step 1: Define the stakeholder(s) - Before designing a visualisation, identify the key audience(s). Refer to your communications planning and craft the visualisations according to the stakeholder. Keep in mind that different people have different learning styles.

Step 2: Define the data visualisation content - Check your communications plan to determine the "need-to-know" content for each of the stakeholders identified. Then, determine where a visual will be most useful based on your findings, your information needs and the data available to you.

Step 3: Design and test your visualisation - Remember to keep it simple. Less is more with data visualisation. Do not crowd your visuals with too much data. Get started on paper, with the audience-specific content that was identified. For each key audience identified, different visuals or dashboards may need to be designed.

Step 4: Build your visualisations - Team members with skills and experience in digital software can build data visualisations using the prototypes that were developed in a small group or workshop setting. Some of these visualisation tools can be created in Microsoft Excel, if that is the software you are using to organise and analyse your data. For many, however, you will need the assistance of a team member who is skilled in digital software and visualisation. Collaboration between digital experts and MEAL staff will be necessary for more complex visualisations.

6 Using MEAL Data

6.1 Using MEAL data

The MEAL framework for Uganda will show how the information generated can be used for adaptive management, and progress reporting. Under the component on effective adaptive management, the MEAL will show how a project or programme can use the MEAL data and analysis to help NBSAP II entities make collaborative, timely, and informed decisions to ensure the project activities deliver the intended impacts for participants in line with the scope, time and budget. Where the feedback shows weaknesses, gaps, and tailing away from the intended project results, the project staff will be able to pinpoint areas within the project cycle where action can be undertaken to reinforce, and/or adjust the project or programme.

Progress reporting is key for the annual reporting of institutions, for period reporting such as through the national reports, and voluntary peer review mechanisms (VPRs), and compliance reports for management of ecosystems, natural resources, and biodiversity within a national and international setting. The MEAL framework can be such a basis for reporting. Progress reporting is also critical for donor-funded projects and projects funded through public financing. In addition, accountability to stakeholders is also achieved through progress reporting and taking action by learning.

6.2 Adaptive management

Effective adaptive management collects and analyses project monitoring and feedback data to help NBSAP II projects and actions attain collaborative, timely and informed decisions to ensure that project activities deliver intended impact to participants within the approved time, scope and budget (MEALPro 2019). The purpose of adaptive management is ensuring that the feedback achieved from the monitoring is used to reinforce implementation of NBSAP II actions. Adaptive management can be achieved through environmental compliance mechanisms such as environmental and social management plans (ESMPs), through compliance and voluntary audits, use economic instruments such as fiscal taxes, and management charges and fees, and the use of systems of environmental economic accounting (SEEA) in macroeconomic planning and policy formulation, and national and sub-national planning and budgeting as part of the national budget cycles, and NDP III implementation. Sub-sections 6.2.1 and 6.2.2 highlight two instruments that would benefit from adaptive management actions of the MEAL.

6.2.1 Environmental Sensitivity Atlas

The Environmental Sensitivity Atlas for the Albertine Graben was developed by National Environment Management Authority (NEMA) and the Ministry of Water and Environment (MWE) to display, identify and provide the ability to analyse the relative environmental, biological, geographical, and socio-economic sensitivities to oil spill and oil development within the exploration areas in the Albertine Graben region of western Uganda. The sensitivity atlas was used to identify and protect: (i) fragile habitats (land cover types) (ii) designated protected areas (iii) endemic and threatened species (iv) areas of high biodiversity (v) cultural, religious and historical sites (vi) economic activities that could be negatively impacted by oil activities (vii) water courses. The atlas was also used to identify and avoid: (i) clearance of vegetation areas susceptible to erosion (ii) oil contaminating risks on permeable soils or areas with high ground water table and shallow aquifers (iii) major construction such as pipelines on fault lines like oil spill risk on lakes shorelines.

The sensitivity atlas (NEMA 2009) shows the sensitivity of biological resources by species and ecosystems, and the sensitivity of natural resources based on the 13-land cover system, the ground and surface water sensitivity, and land and soils sensitivity, and the sensitivity of the shorelines, and bathymetry of the Lake Albert. As result, the sensitivity atlas provided baseline and impact analysis data used in environmental and social impact assessment (ESIA) studies and environmental and social management plans (ESMPs), and voluntary and compliance audits for roads development, electrical

infrastructure, and oil and gas exploration and development projects for the Albertine Graben. The atlas was used in studies of catchment management zones for Muzizi, Nyamugasani, Kafu, and other water resources catchment management studies and the integrated water management and development plan for the Albertine Graben. The sensitivity atlas was used for benchmarking National State of Environment Reports (NSOERs), NBSAP II, and the 6NR for Uganda.

6.2.2 Clearinghouse Mechanism (CHM)

The term "clearing-house" refers to a mechanism or institution that brings together seekers and providers of goods, services or information, thus matching demand with supply (UN BCH 2021). Article 18 of CBD requires the establishment of a Clearing House Mechanism (CHM) to promote and facilitate technical and scientific cooperation. The NBSAP II proposed three CHMs. The first CHM was proposed for national coordination of flows of biodiversity information to be centred at the CBD Focal Point, NEMA. The central CHM was expected to operate as an information clearing house on biodiversity conservation and management in the country and to be linked to institutional databases in public sector, private sector, civil society/non-governmental organisations, and international agencies. The central CHM for Uganda has been operational since 2016 when NEMA on behalf of the government of Uganda received financial support from Global Environmental Facility(GEF) through United Nations Environment Program(UNEP) for the development of a National clearing House Mechanism (CHM). The Uganda Clearing House Mechanism (UG-CHM) is a web-based portal designed to facilitate information exchange and utilization amongst all stakeholders in Uganda on Biodiversity. The Uganda Clearing House Mechanism (UG-CHM) will bring together a huge network of institutions and organisations working on biodiversity. The UG-CHM through the focal point for Uganda will be administered by a dedicated team supported by the various strategic committees established by the national focal institution for technical back-stopping and guidance A global clearing-house mechanism was established under the CBD to promote and facilitate technical and scientific cooperation globally. In the context of the CBD, the CHM designates a network of parties and partners working together to facilitate implementation of the Convention as well as access to and exchange of information on biodiversity around the world.

The second CHM proposed in the NBSAP II was specific for taxonomic information in appropriate formats would be deposited. The taxonomic data and information used to guide decision making. The process of developing and operationalizing the CHM for taxonomy information was also expected to lead to: awareness raising on the role of taxonomy in biodiversity conservation in public and private institutions; awareness on the application of taxonomic information in many production sectors of the country such as agriculture, trade, health, development and regulatory agencies as well as local communities; support for institutions with taxonomic data and information (through funding, increased personnel or better infrastructure) to make this information easily available to end –users; support and train of women, including women's indigenous groups and women's organisations, on taxonomy, taxonomic data, information; development of taxonomic knowledge bases of biodiversity in formats that are accessible to women and men and other end users; improve of taxonomic infrastructure and tools to provide adequate taxonomic information; and establish centre(s) of taxonomic excellence. Given the existence of the NBDB at Makerere University, which holds data on seven taxa included in the NBDB; plants, birds, mammals, amphibians, reptiles, insects and fishes, and an institutional structure in place to collate data from the Uganda Wildlife Authority (UWA), the Wildlife Conservation Society (WCS) and Nature Uganda, among others, the CHM for taxonomic data was aggregated with the national/central CHM.

The third CHM proposed under the NBSAP II was for biosafety. The Biosafety Clearing-House (BCH) is a mechanism established in Article 20 of the Cartagena Protocol on Biosafety to facilitate the exchange of information on Living Modified Organisms (LMOs) and to assist Parties in complying with their obligations under the Protocol. The BCH functions as a central information marketplace where the providers and users interact and exchange information on biosafety. All interested users

can freely search and retrieve information through the BCH website. Under the NBSAP II the lead agency the Uganda National Council of Science and Technology was expected to: conduct a baseline study on level of public awareness and education on the benefits and risks of biotechnology and biosafety; establish and operationalize Biosafety Clearing House (BCH), conduct specialised trainings in Biosafety for regulators and inspectors; conduct specialised biotechnology communication for media specialists; and conduct trainings in biotechnology and biosafety for women and men.

6.3 Progress reporting

Uganda's NBSAP II is mainstreamed into government processes under the Comprehensive National Development Planning Framework (CNDPF). The first and mandatory level of progress reporting in Uganda is linked to public sector, private sector and civil society commitments under the CNDPF based on the overarching national institutional arrangements. The comprehensive planning framework comprises the 30-year long-term development strategy, the Vision 2040, five-year medium term National Development Plans, currently the third National Development Plan (NDP III) 2020/21-2024/25, and the Programme Strategic Plans also for five years, and the annual work plans and budgets for the different programmes, Ministries, Agencies and Local Governments (MALs) under the NDP III, Within NDP III, all MALs contribute Programme Implementation Action Plans to the 20 Programmes of the Plan through Programme Implementation Action Plans (PIAPs). Section 2, Table 1 above includes the current proposed actions that are linked to biodiversity conservation in the country. Ministries, Agencies and local governments submit annual work plans and budget framework papers which are consolidated in annual budget estimated for the country based on the PIAPs. The PIAPs can be adjusted based on the mandates and based on agreement within the different Programmes institutional arrangement. Whereas the contributions of the MALs to the implementation of the CNDPF is enforceable through different laws and regulations, the contributions of private sector and civil society are largely based on the strength of the working relationships, and the commitments under the Public Finance Management Act (2015).

As part of their mandate public institutions produce annual progress reports on the actions undertaken, and the monitoring teams produce quarterly reports that feed into the annual reports for all MALs. The CBD Focal Point, produces a biennial National State of Environment Report (NSOER) in which the status of biodiversity in the country is also updated. Uganda has also produced six national reports for the CBD secretariat starting in 1998, 2001, 2006, 2009, 2014 and 2019 for the first, second, third, fourth, fifth and sixth national report. The national reports rely on the cumulative reporting within the NSOER and the responsible institutions in the NBSAP documents.

7 Accountability Mechanisms and the Learning Plan

7.1 Accountability: feedback and complaint mechanisms

Accountability is a key feature that makes all concerned programme/project persons accountable. It gives power to beneficiaries, donors, clients and other relevant stakeholders to hold implementing agencies accountable for their interventions, actions, policies and priorities (. Accountability mechanisms include complaint-handling mechanisms and feedback practices, especially to women, persons with disabilities, minorities, persons, and other marginalised communities.

Main accountability activities include:

i. Establishing complaints and feedback mechanism for the project that are appropriate to the geographical conditions of the targeted area and type of intervention, and make sure of the beneficiaries' knowledge of this mechanism.
ii. Receiving, recording and analysing complaints daily then provide feedback to the management and beneficiaries.
iii. Weekly or monthly documentation of complaints and feedback reports.
iv. Periodic discussion with the project team on how to improve the provided services based on the beneficiaries' complaints and suggestions and related services agencies.
v. Calling random beneficiaries of every activity – service- distribution.
vi. Ensuring that a complaint officer is appointed in all distribution committees, and then contact with them to collect complaints and provide feedback.
vii. Printing banners with instructions, standards and alerts that the assistance is free.
viii. Printing complainants' phone number in every publication that will be provided to the beneficiaries.

The accountability component is embedded into the implementation of the MEAL at the different stages of monitoring, and evaluation, as well as learning. Therefore, accountability occurs throughout the process of MEAL implementation. Importantly, the opportunities for accountability need to be documented and highlighted in the monitoring, evaluation and learning reports.

7.2 Learning

The learning function is vitally important to guide the further implementation of the NBSAP II and its component projects. Learning will ensure that the country projects, which are all implementing similar types of activities, can build on their own and each other's efforts and make a significant difference to the body of knowledge and practices relevant to biodiversity conservation and management (UNEP 2020). Aspects to be addressed as part of the learning function are:

(i) Sharing of evidence/results that can inform adaptive management and the application of best practices which have been identified;
(ii) Identification of failures as learning opportunities;
(iii) Identification of knowledge gaps that may need to be addressed during project implementation; and
(iv) Ensuring the wide/external sharing of knowledge to generate interest in, and support for, the Special Programme.

For this MEAL, lessons learned and best practices will be captured through activities such as; (i) reflection workshops, (ii) focus groups and (iii) lessons learning events that may be organized by the Secretariat and involving a number of country project representatives. These activities need to

be facilitated by a monitoring, evaluation and learning professional who will ask thought provoking questions about the project design and implementation experience from both ongoing and completed projects to identify for example:

- "What happened?"
- "What repeatable, successful processes did we use?"
- "What definitely did NOT work?"
- "How could we ensure future projects go just as well, or even better?"
- "What could have gone better?"
- "What were the aspects that stopped you from delivering even more?"
- "What would your advice be to future project teams, based on your experiences?"

8 Supporting Actions

8.1 Developing and disseminating tools to facilitate learning and knowledge exchange

The main outputs of the MEAL and the dissemination plan are highlighted in Table 20. The plan shows the MEAL outputs proposed, the target recipients of the products, the timelines at which the products need to be made available, and the strategies for dissemination. The products also serve as tools both for dissemination of information to support the accountability and learning functions, while other are tools to support data collection needed for monitoring and evaluation.

Table 20: Dissemination plan for MEAL products

MEAL Products	***Target Recipients/ Audience***	***Period/dates***	***Strategies for dissemination***
Data collection tool and templates	Lead Agencies, Regulator, IPLCs, donors, civil society, all project stakeholders contributing to project implementation	At the outset of project	Project launch meetings, and/or baseline dissemination workshops
Indicator Performance Tracking Table	Regulator, IPLCs, donors, Government Lead Agencies	At the outset of project	Project baseline dissemination workshops
Baseline Reports	Lead Agencies, Regulator, IPLCs, donors, civil society	Within six months from NBSAP II project components commencement	Results presentations and sharing of the baseline report with stakeholders
Quarterly Progress reports	Regulator, IPLCs, donors, Government Lead Agencies	Quarterly	Sharing of the progress reports with stakeholders
Field Monitoring visits reports (Field Missions Reports)	Regulator, IPLCs, donors, Government Lead Agencies	After every monitoring report dissemination visit	Sharing of the monitoring report with stakeholders
Biannual Review and Lessons Learnt Reports	Lead Agencies, Regulator, IPLCs, donors, civil society	Biannual	Workshop presentations and report sharing
Knowledge products	Lead Agencies, Regulator, IPLCs, donors, civil society	Quarterly	Workshop presentations and sharing of technical notes
Annual Review Reports	Lead Agencies, Regulator, IPLCs, donors, civil society	Annual	Sharing of annual reports with stakeholders
Mid-term evaluation reports	Lead Agencies, Regulator, IPLCs, donors, civil society	At mid-term of project	Dissemination workshop presentation, and sharing report with stakeholders
End line Reports	Lead Agencies, Regulator, IPLCs, donors, civil society	At programme completion	Presentation of results and sharing of final report with stakeholders

Source: adapted from Zimbabwe Resilience Building Fund Management Unit (2016)

8.2 Developing a harmonized data reporting tool for the MEAL dashboard/ platform

The MEAL will also have an interactive platform that supports completion of data collection tools online, and automated analysis for primary quantitative-descriptive data. The primary results can be shared online and used for learning and accounting in the implementation of the MEAL. The MEAL dashboard will also have functionality to support geolocation of activities, and detailed analysis and uploading of data and results.

The harmonised data reporting tools and the MEAL dash board were included in the proposed project for implementation of the MEAL in the Performance Monitoring Plan. The MEAL dashboard to be hosted by NEMA will allow institutions to implement the PMP on an interactive format that allows for accountability to the different stakeholders, especially beneficiaries and donors. The MEAL dashboard will provide an improvement on the clearinghouse mechanisms, with a wider participation of civil society, private sector, and IPLCs.

8.3 Developing an integrated peer review mechanism into the MEAL Framework

As part of promoting transparency and accountability in implementation and reporting of the NBSAPII a voluntary peer review mechanism was introduced by the CBD secretariat. The success of the first voluntary peer review mechanism on the NBSAP II needs to be extended to include the MEAL Framework. The peer review mechanisms support a high-level accountability and learning processes among ministries, departments and agencies, local governments, civil society, private sector, and donors.

The national peer review mechanisms will allow greater participation of stakeholders in academia and research in the implementation of the NBSAP II, and engagement with IPLCs, and public sector, and civil society. The peer review mechanism is critical to ensuring that the information available in the dissemination tools, and the MEAL dashboard meets technical consistent, accuracy and reliability standards included in the data collection and analysis components of the MEAL, while also allowing for interaction and learning with non-technical stakeholders.

The peer review mechanisms will also be integrated into the MEAL dissemination plan. The MEAL dashboard/ platform will provide an opportunity for peer review with editors to support the synthesis of contributions from different stakeholders.

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Annexes

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Barirega Akankwasah, PhD	National Environment Management Authority	Executive Director
Daniel Babikwa, PhD	National Environment Management Authority	Director District Support Coordination and Education
Mike Nsereko	National Environment Management Authority	Director Policy Planning and Information
Arnold Waiswa Ayazika	National Environment Management Authority	Director Environment Management and Compliance
Sarah Naigaga	National Environment Management Authority	Senior Legal Counsel
Issa Katwesige,	Ministry of Water and Environment	Assistant Commissioner, Forestry Sector Support Department
Ronald Kaggwa,	National Planning Authority	Manager Production, Trade and Tourism Planning

Annex 4: Expert Working Group for MEAL Development Minutes

FINAL

MINUTES OF THE MEETING OF THE TECHNICAL COMMITTEE ON BIODIVERSITY CONSERVATION

REVIEW OF THE MONITORING, EVALUATION, ACCOUNTABILITY AND LEARNING (MEAL) FOR THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (NBSAP)

TUESDAY, 16TH AUGUST 2022

NEMA MAIN BOARD ROOM

MEMBERS PRESENT

No.	Name	Institution	Email
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Absent with apologies			
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1	Prof. Joseph Obua	Makerere University	jobua09@gmail.com
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Agenda – adopted as is

1. Prayer
2. Communication from the Chair
3. Issuance of the Appointment letters and review
4. Presentation and discussion of the NBSAPII- MEAL framework
5. Way forward
6. A.O.Bs
7.

MINUTE 01/16-08-2022: PRAYERS		
Minute 01	**Prayers**	**Action**
	The prayers were led by Ms. Monique Akullo	Noted by all.
MINUTE 02/16-08-2022: COMMUNICATION FROM THE CHAIR		
Minute 02	**Communication from the chair**	**Action**
	i. The meeting was chaired by Dr. Mary Namaganda on behalf of the Committee Chairperson, Prof. Joseph Obua, who could not make it due to an urgent meeting of NARO governing council meeting. She welcomed members to the meeting. ii. She requested the Secretariat (NEMA) to provide any updates. iii. The Coordinator of the Committee Mr. Francis Ogwal informed members that their appointment letters were signed by the Executive Director of National Environment Management Authority (NEMA) and ready for issuance. iv. Mr. Francis Ogwal were further informed that the Committee has been reduced to seven (07) members and the selection criteria included expertise in forestry, taxonomy, biotechnology and biosafety, protected areas, digital sequencing information, conservation, natural resources policy among others. v. The Chair requested members to review the TORs and further discuss them.	Noted by all. Noted by all.
MINUTE 03/16-08-2022: ISSUANCE OF THE APPOINTMENT LETTERS AND REVIEW		
Minute 03	**Issuance of the Appointment letters and review**	**Action**
	i. The TCBC members were given their Appointment letters and were requested to review them further for better understanding of roles and responsibilities tasked by NEMA. ii. Members resolved that, confidentiality agreements be signed by members to safeguard confidential information discussed and agreed upon. iii. TCBC members resolved to sign an oath in the next meeting. iv. As per the TORs, Ms. Diana Sem - a legal officer at NEMA, was assigned as Secretary to the TCBC, for purposes of minute taking and conduct of other administrative functions of the committee.	Noted by all Noted by all Diana Sem to prepare the clause and the oath.
MINUTE 04/16-08-2022: PRESENTATION AND DISCUSSION OF THE NBSAPII-MEAL FRAMEWORK		
Minute 04	**Presentation of the NBSAPII-MEAL framework**	**Action**

	The National Biodiversity Strategy Action Plan (NBSAPII) – Monitoring, Evaluation, and Accountability and Learning (MEAL) framework was presented by Monique Akullo. i. She highlighted the objectives and the NBSAPII- MEAL development, the purpose and overall goal of the framework which is to; enhance performance assessment of the NBSAP through monitoring, review, and information sharing using transparent and accountable mechanisms. ii. In her presentation, focus was made on the five (05) phases of the MEAL framework which include; the logic frameworks that entails; the Theory of Change (TOC), logical and results framework, the planning, collecting, analyzing and using the MEAL data. iii. Members suggested the following for consideration in the MEAL framework; a. A baseline is required to monitor progress. b. Rephrase the language used in the tables to reflect actual outcomes. c. Update the secondary literature by using latest data such as the wildlife data on species that is more recent. d. Ensure there is data quality assurance for the MEAL framework during implementation. e. Have a section on economic valuation of natural resources to inform budgeting and planning for natural resources. This is to avoid focusing only on the expenditure values in the MEAL framework. f. Revise the TOC to have the SDG above the Multilateral Environment Agreements (MEAs), followed by the NDPIII and the Vision 2040. A **diagrammatic view** will be developed to show the revised TOC. iv. Members also identified the following : a. The MEAL framework should provide linkage to the macroeconomic level of government planning and policy development response. The **MEAL framework** should be integrated/ mainstreamed into government reporting system. Include **Office of the Prime Minister (OPM)** in stakeholder dissemination workshop. b. There is need to create linkage with other global responses such as climate change, land degradation, etc.	Noted by all. Noted by all. Noted by all. UWA could provide recent data on animal species count. NEMA to follow up with the consultant. NEMA to follow up with the consultant. NEMA to follow up with the consultant. NEMA to follow up with the consultant.
	c. There is need to have data/information sharing arrangement to safeguard the current issues of Access and Benefit Sharing (ABS).	NEMA to follow up with the consultant.
MINUTE 05/16-08-2022: WAY FORWARD		
Minute 05	**Way forward**	**Action**

	The meeting agreed on the following as recommendations to the Technical Committee of the Board of NEMA; 1. Address the comments made by the TCBC on the NBSAPII-MEAL framework. 2. Identify a dissemination approach for the NBSAPII-MEAL framework that can facilitate its implementation. 3. Raise the profile of MEAL framework to higher institutions of Government such as the Policy Committee on Environment and Parliamentary Committee on Natural Resources.	NEMA to follow up with consultant. NEMA to follow up NEMA to follow up
MINUTE 06/16-08-2022: A.O.B.		
Minute 06	**A.O.B**	**Action**
	i. Members tasked the Secretariat to draft a work plan for the Committee and share with member for consideration at their second meeting. ii. Since there was no other business, the Chair thanked members for attending the meeting. iii. The meeting was adjourned at 1:00 P.M local time; and the date second meeting with be communicated.	NEMA (TCBC Coordinator). All to note. All to note.

CHAIRPERSON: .....
Dr. Mary Namaganda

SECRETARY: .....
Ms. Diana Sem

Date: .....

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