

# NATIONAL PLAN FOR NATURAL CAPITAL ACCOUNTING

*Advancing the Implementation of  
Natural Capital Accounting in Ghana*

March 2024



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**National Plan for Natural Capital Accounting**

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**National Plan for Natural Capital Accounting**

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## Acronyms and Abbreviations

AU	African Union
CoP	Community of Practice
CPESDP	Coordinated Programme of Economic and Social Development Policies
CSIR	Council for Scientific and Industrial Research
EPA	Environment Protection Agency
FDES	Framework for the Development of Environment Statistics
GDP	Gross Domestic Product
GDSA	Gaborone Declaration on Sustainability in Africa
GLRSSMP	Ghana's Landscape and restoration and small-scale mining project
GPS	Global Programme on Sustainability
GSS	Ghana Statistical Services
KO	Key Objectives
MDA	Ministries, Departments, Agencies
MESTI	Ministry of Environment, Science, Technology and Innovation
MLGRD	Ministry of Local Government and Rural Development
MLNR	Ministry of Lands and Natural Resources
MoF	Ministry of Finance and Economic Planning
MOFA	Ministry of Food and Agriculture
NBSAP	National Biodiversity Strategy and Action Plan
NCA	Natural Capital Accounting
NDPC	National Development Planning Commission
NGO	Non-Governmental Organization
SDG	Sustainable Development Goals
SEEA	System of Environmental-Economic Accounting
SEEA-EA	System of Environmental-Economic Accounting - Ecosystem Accounting
SNA	System of National Accounts
TEEB	The Economics of Ecosystems and Biodiversity
UN	United Nations
UNEP-WCMC	United Nations Environment Programme - World Conservation Monitoring Centre
UNFCCC	United Nations Framework Convention on Climate Change
UNSC	United Nations Statistical Commission
UNSD	United Nations Statistics Division
WAVES	Wealth Accounting and the Valuation of Ecosystem Services

## Foreword

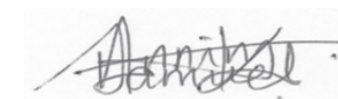
Ghana is endowed with a wealth of natural resources. Our country holds a profound responsibility for ensuring that its natural resources are conserved and sustainably utilized for future generations. We need to understand the value of nature and its contribution to the economy, society and to Ghana's prospects for growth. The National Biodiversity Strategy and Action Plan (NBSAP) highlights that Ghana's biodiversity and ecosystem services have been a significant source of income and for the creation of jobs. While this presents tremendous opportunities to support inclusive and sustainable development, this resource base is under threat from unsustainable use and resource depletion. Land degradation, deforestation and overfishing are key threats to Ghana's developmental trajectory.

The need to transition to a greener economic development pathway is recognized in the national policy framework of Ghana. Biodiversity is increasingly being mainstreamed into planning processes and features in several policy documents. Natural Capital Accounting (NCA) has been identified as an effective mechanism for integrating the real value of biodiversity across policy objectives and into Ghana's economy. Using Accounting, the contribution of natural assets to economic growth, social well-being and environmental resilience is comprehensively assessed to support decision making. In the last decade, Ghana has seen several biodiversity- and NCA-related initiatives that have supported national imperatives and international commitments. Ghana's progress has been noted globally and is regularly informing the community of practice on NCA. We will continue to pursue our national development vision up to 2057, together with the achievement of the United Nations Sustainable Development Goals (SDGs), the Africa Union Agenda 2063, the Paris Agreement and the Kunming-Montreal Global Biodiversity Framework.

This transformative National Plan synthesizes Ghana's nationwide efforts to build a green economy through NCA. Ghana's pursuit of a green gross domestic product that is used for macroeconomic reporting and its integration into the System of National Accounts, will be further supported. It will empower us to make evidence-based decisions that will strike a balance between economic prosperity and environmental protection. By integrating NCA into policies, planning and decision-making processes, opportunities for sustainable investments, job creation and poverty reduction, will open while safeguarding the integrity of the environment.

Our strength as a nation lies in our ability to join forces and collaborate with diverse partners. The success of integrating the NCA will therefore depend on collaboration – with citizens, the private sector, civil society and international partners. The achievement of common goals and co-creation among stakeholders will ensure that Ghana's natural heritage is nurtured for present and future generations.

The National Plan for Natural Capital Accounting (NCA) is an exciting and pivotal step towards achieving a green transition. We can build a resilient and sustainable Ghana, where natural capital thrives alongside natural prosperity. Together, let us create a sustainable future for our nation.



Professor Samuel Kobina Annim  
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## Executive Summary

Ghana's existing policy context recognizes the contribution of nature to the country's wealth and future growth prospects. The Long-term National Development Plan of Ghana (2018 – 2057), the National Medium-term Development Policy Framework (2022-2025) and the National Biodiversity Strategy and Action Plan (NBSAP) (2016), among others, highlight the value and benefits of biodiversity for socio-economic development.

Issues related to the measurement of the value of natural assets and the reflection of this measurement in economic systems, have raised interest among senior decision-makers within Ghana. The Ministry of Environment, Science, Technology and Innovation (MESTI), the Environmental Protection Agency (EPA) and the Ghana Statistical Services (GSS) have engaged in Africa's regional agenda on Natural Capital. These lead organizations have championed Natural Capital Accounting (NCA) to account for the real value of Ghana's natural resources.

NCA is a globally recognized tool that allows for the integration of the value of natural capital into economic models. It is supported by the international standard of the System of Environmental-Economic Accounting (SEEA) framework. NCA is increasingly being applied worldwide, including by many countries in Africa. Previous work conducted at the national, regional and global levels has supported the development of a national plan for NCA. This national plan proposes an approach where NCA is used to offer credible evidence to support decision-making and integrated planning for sustainable development in Ghana. The approach in the plan, which was underpinned by a preliminary user-needs assessment, is supported by four key goals. These key goals, which have been co-developed by national stakeholders, are:

- Goal 1: Resources and capacity for advancing NCA are developed and enhanced
- Goal 2: Institutional arrangements are established to support NCA effectively and collaboratively
- Goal 3: Statistical Infrastructure on NCA is well developed and strengthened for the regular production of an integrated suite of natural capital accounts
- Goal 4: Information from NCA is well mainstreamed into all Ministries, Departments and Agencies (MDAs) as well as used for integrated planning, decision-making, monitoring and evaluation across all scales, sectors and biomes

The essential building blocks, goals and corresponding objectives of this plan ensure that by 2034 a comprehensive national system for NCA is in place, which meets the demands of the national and sector-specific plans for sustainable development. Drawing on the findings from the user-needs assessment (GSS *et al.* 2022), the four critical building blocks that supported the development of the goals are: Required resources and Capacity; Institutional Arrangements; Statistical Infrastructure and Mainstreaming. These building blocks are interconnected and mutually reinforcing. The implementation of NCA in Ghana and the achievement of the vision, goals and corresponding objectives would therefore require a combination of key elements from each building block. Collaboration and support of stakeholders across various levels and sectors are also required.

This plan will support the effective implementation of Ghana's national policies and inform Ghana's future policy imperatives and priorities. The realization of the plan requires the coordination and mainstreaming efforts of a central coordinating body, such as the National Development Planning Commission (NDPC). In collaboration with relevant stakeholders, the NDPC can mainstream this plan's vision and its overarching outcomes across Ghana's policy landscape. This would help advance the country on its path toward economic transformation.

# 1. Introduction

The prosperity and security of people and economies throughout the world rely significantly on diverse natural resources and ecosystem services - natural capital. Natural capital can be described as “the stock of renewable and non-renewable resources (e.g., plants, animals, air, water, soils and minerals) that combine to yield a flow of benefits to people” (IPBES 2019 ). The System of National Accounts (SNA) is the international standard for measuring and reporting the economic activities of a country (United Nations *et al.* 2009). The conventional measurement of economic performance through Gross Domestic Product (GDP), which is a key indicator reported in the SNA, fails to incorporate the measurement of the value of a country’s natural assets. For instance, if a country allows its mineral resources to be unsustainably utilized such that nationally water supplies are damaged, its overall wealth is reduced. However, this may still be reflected as economic gains in GDP calculations. The reason for this is because GDP only addresses one aspect of economic performance, i.e. income. It does not account for the assets that make the income possible and therefore does not indicate how sustainable the growth is (Fioramonti 2013).

Hence, there is a growing consensus on the need to use different measurement tools to account for the value and depreciation of natural capital. Natural Capital Accounting (NCA) enables natural capital to be integrated into economic models by incorporating nature’s ability to retain asset stock (inputs) and yield flows of value (outputs) (Brandon *et al.* 2021). NCA can help identify the economic value of biodiversity and ecosystem services. It can support evidence-based decision- and policy-making for their long-term conservation and sustainable use (Banerjee *et al.* 2020).

NCA has become an increasingly useful tool that is being applied in various countries, including Ghana (Vardon *et al.* 2017). The widely accepted international standard, the System of Environmental-Economic Accounting (SEEA) framework (UN 2014), has facilitated the implementation and piloting of NCA through various initiatives (UNSD 2022). The 2010 Wealth Accounting and the Valuation of Ecosystem Services (WAVES) partnership enabled Botswana to update its water accounts to address

concerns of increased water demand (WAVES 2013). Madagascar compiled satellite fisheries accounts to improve understanding of its fisheries sector’s contribution to economic development and human well-being (World Bank 2012). In 2014, Ghana participated in the WAVES partnership and explored how forest accounts can inform development policy. In 2016, Ghana joined the 2nd phase of the WAVES partnership to pilot the compilation of mineral resources and energy accounts. Through WAVES, Ghana prioritized building technical capacity for NCA. WAVES has since transformed into a global program on sustainability.

The World Bank’s Global Program on Sustainability (GPS), previously WAVES, has been a catalyst for more countries to implement NCA and compile pilot accounts (World Bank 2021). As a member of the GPS, Ghana has compiled thematic accounts for mineral resources and energy (EPA 2016a). These accounts have provided summary data and indicators such as the comparison of water and energy use in mining to their economic value. The overall monetary worth of mineral resources and the climate impacts of economic activities have been highlighted (EPA 2016b). These accounts are used in policy and environmental-economic analysis (EPA 2016c). They assist in tracking the management and use of mineral and energy resources (Reuter *et al.* 2016).

Other initiatives have supported Ghana’s progress on NCA implementation. Ghana is a pioneer signatory member of the Gaborone Declaration on Sustainability in Africa (GDSA) (2012). The Country is also a member of the Africa Natural Capital Accounting Community of Practice (NCA-CoP). The NCA-CoP, hosted by the World Bank, is supported by the GDSA, United Nations Statistical Division (UNSD) and regional structures such as the African Ministerial Conference on the Environment and the African Union (AU). This platform aims to build momentum and integrate NCA into statistical production systems and policies in all African countries (NCA-CoP 2023). Ghana’s advancement in NCA is informing the community of practice for other countries to develop their own plans and strategies (World Bank 2023).

## Rationale of the National Plan

The Long-term National Development Plan of Ghana (2018 – 2057), makes provision in Goal 3 of the plan for the protection of the natural environment. The National Medium-Term Development Policy Framework (2022-2025) emphasizes the importance of biodiversity in the goal to safeguard the natural and built environment. Natural capital is highlighted in the focal area Climate Variability and Change to support the development of the Green Economy. The National Biodiversity Strategy and Action Plan (NBSAP) (2016) also highlights the value and contribution of biodiversity as a major source of income and job creation in Ghana. Aspiration 1 in the AU Agenda 2063 requires building “a prosperous Africa based on inclusive growth and sustainable development”. These national policy provisions together with Ghana’s regional and international commitments, have provided suitable entry points and strategic direction for the implementation of NCA in Ghana (Annex 1).

Furthermore, there is a growing interest in Ghana’s government for the development of “green GDP” (Ghana News Agency 2023). This interest includes the aspiration to integrate the value of natural

capital in the government’s revised macroeconomic reporting (B&FT 2023). Thus, this national plan was prepared to describe how current NCA efforts can be scaled up to support evidence-based decision-making and policy-making for long-term poverty reduction and sustainable development. Building on previously published national reports on NCA, a preliminary user-needs assessment (GSS *et al.* 2022) and consultation with key stakeholders in Ghana, the plan was co-developed by national stakeholders and international partners (Annex 2). This plan, through its vision, essential building blocks, goals and corresponding key objectives, provides strategic direction. It also provides priority actions that will guide the establishment of a comprehensive national NCA system that can support Ghana’s aspiration for economic transformation. It will also support the effective implementation of Ghana’s national policies, particularly high-priority plans and strategies such as the Coordinated Programme of Economic and Social Development Policies (CPESDP), the Long-term National Development Plan of Ghana and the National Medium-Term Development Strategy. It can also support the coordination of the National Development Planning Commission (NDPC) and other key organizations across Ghana (Annex 3).



<sup>1</sup> <https://www.ipbes.net/glossary-tag/natural-capital>, accessed on 17th November 2023.

<sup>2</sup> Gaborone Declaration for Sustainability in Africa (GDSA) is an initiative for sustainable development that African leaders lead. Available at <https://www.gaboronedeclaration.com/>

## 2. Vision, Goals and Objectives

Drawing on the findings of a preliminary user-needs assessment, which highlighted Ghana's relevant national policies (Annex 1), a comprehensive vision for the national plan was co-developed by national stakeholders and international partners.

By 2034, NCA will be used in policies, regulations, planning and development processes to offer credible evidence for decision-making and integrated planning for poverty alleviation and sustainable development in Ghana.

To achieve this vision, effective systems that comprise essential building blocks must be put into place. This is to ensure that natural capital in Ghana is valued, conserved, restored and sustainably used to maintain ecosystem services. It is also to ensure that continuous and equitable sharing of the benefits that arise for the well-being, prosperity and security are provided to all Ghanaians.

The national plan required a timeframe to achieve its desired outcomes. National stakeholders agreed to a 10-year implementation timeframe. This plan therefore supports this vision. By 2034 a comprehensive national system for NCA will be in place, which meets the demands of the national and sector-specific plans for sustainable development.

The user-needs assessment (GSS *et al.* 2022), which highlighted four essential building blocks (1. Required resources and Capacity; 2. Institutional Arrangements; 3. Statistical Infrastructure and 4. Mainstreaming) supported the development of four critical goals for this national plan. The four critical goals, their corresponding key objectives (KO) and expected outcomes are listed below to reach the overall outcome of an all-encompassing system of NCA in place by 2034. Working to this date meets the demands of the national and sector-specific plans of sustainable development:

### Goal 1: Resources and capacity for advancing NCA are developed and enhanced.

- KO 1.1: Mobilize resources for the data landscape, institutional arrangements and budget for NCA.
- KO 1.2: Improve knowledge, capacity and forecasting of Ghana's stock and flows of natural capital.
- KO 1.3: Build skills for NCA-related data standards, classifications and definitions among all public and private sector organizations.

**Expected Outcome 1: Improved knowledge, capacity and resource mobilization for the effective compilation and application of natural capital accounts based on the SEEA framework.**

### Goal 2: Institutional arrangements are established to support NCA effectively and collaboratively.

- KO 2.1: An institutional framework that effectively manages an integrated system of environmental, ecosystem and economic accounts that should be established and validated.
- KO 2.2: NCA-related policy actions are enhanced in policy cycles.
- KO 2.3: A community of practice (CoP) for advancing NCA in Ghana is well established.

**Expected Outcome 2: Enhanced coordination, stakeholder engagement and institutional arrangements established to provide the enabling conditions for effective implementation of NCA.**

### Goal 3: Statistical infrastructure on NCA is well developed and strengthened for the regular production of an integrated suite of natural capital accounts.

- KO 3.1: Compile and regularly publish natural capital accounts and environmental-economic statistics at national, sub-national and local scales across Ghana.
- KO 3.2: Use, improve and document the standards, methodologies and classifications for compiling natural capital accounts.
- KO 3.3: Documentation, methodologies and all that is learned contribute to NCA knowledge.

**Expected Outcome 3: Improved data and statistical infrastructure with SEEA consistent ecosystem accounts being produced and updated annually, in line with the System of National Accounts (SNA).**

### Goal 4: Information from NCA is well mainstreamed into all Ministries, Departments and Agencies (MDAs) and used for integrated planning, decision-making, monitoring and evaluation across all scales, sectors and biomes.

- KO 4.1: Use of natural capital accounts-based indicators and information for high-level sectoral policies and planning is increased.
- KO 4.2: Public discourse stimulated with information from NCA.
- KO 4.3: High-risk biodiversity areas and demographic groups are prioritized in decision-making and development planning.

**Expected Outcome 4: NCA principles are mainstreamed in Ghana to inform poverty alleviation, national development planning and contribute to the effective implementation of the Kunming-Montreal Global Biodiversity Framework.**

The vision, goals and corresponding objectives are supported by the four essential building blocks. The implementation of NCA in Ghana, the achievement of the four goals and their corresponding objectives requires a combination of the following key elements from the four building blocks:

1. Resource mobilization and capacity development (Goal 1)
2. Institutional mechanisms and enabling policy for all NCA actions and activities (Goal 2)

3. Comprehensive and reliable data accessible and available (Goal 3)

4. Mainstreaming, communication, consultation and uptake of the application of data/information from NCA into decision- and policy-making, planning and implementation (Goal 4).

These building blocks are essential for the implementation of the plan. Once in place, they will lead to the long-term sustainability of NCA in Ghana (Figure 1).

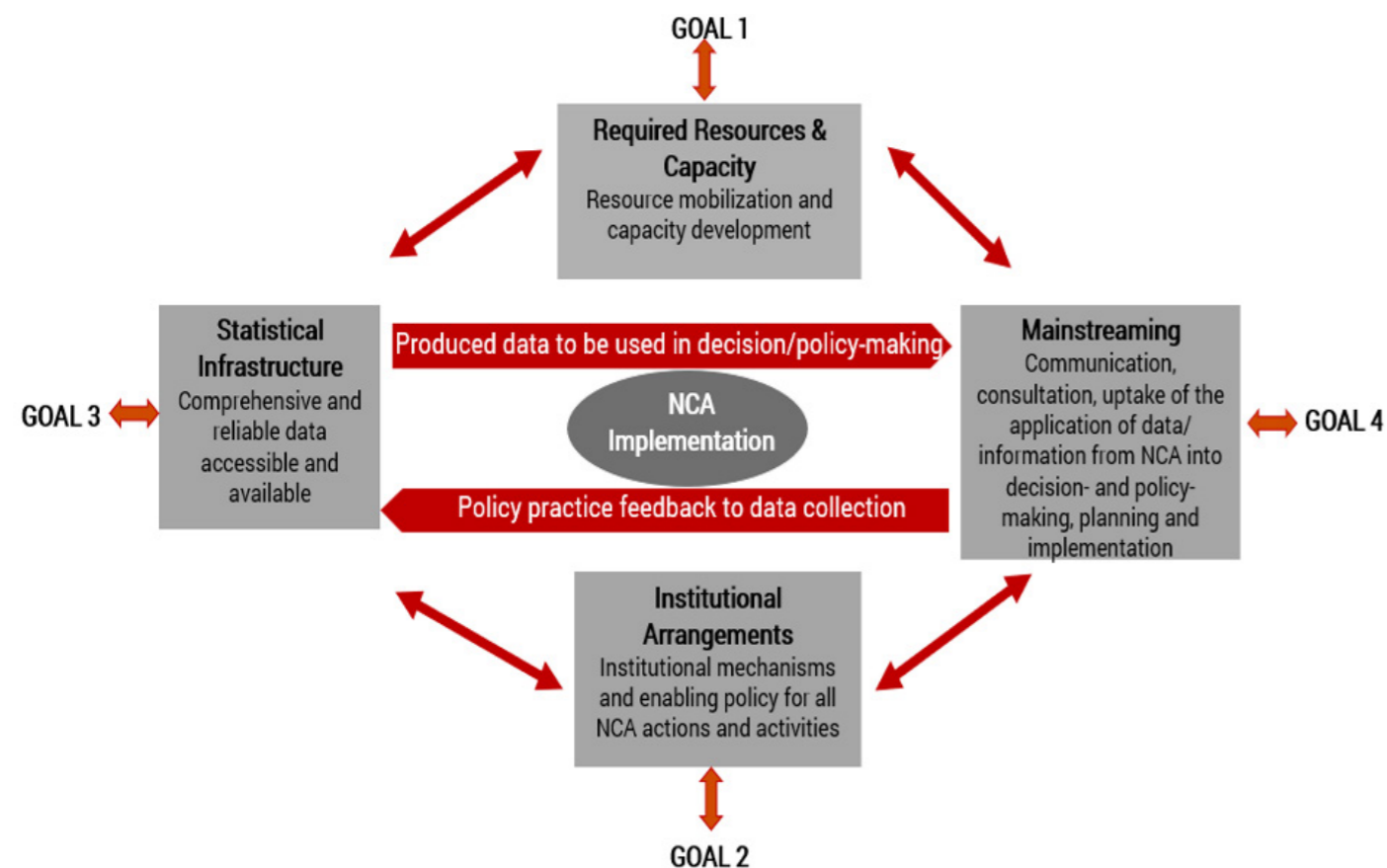


Figure 1. Building Blocks linked to Goals for long-term NCA implementation

These building blocks are essential for the implementation of the plan. Once in place, they will lead to the long-term sustainability of NCA in Ghana (Figure 1).

High-level priority actions are included for each building block and goal. Table 1 shows a summary of how the building blocks and the priority actions relate to the respective goals and their corresponding objectives.

Table 1: Building Blocks, Key Objectives and Priority Actions

Building Block	Goal	Key Objectives	Priority Action
Required resources and capacity	Goal 1: Resources and capacity for advancing NCA are developed and enhanced.	KO 1.1: Mobilize resources for the data landscape, institutional arrangements and budget for NCA. KO 1.2: Improve knowledge, capacity and forecasting on Ghana's stock and flows of natural capital. KO 1.3: Build skills for NCA-related data standards, classifications and definitions among all public and private sector organizations.	Allocate a percentage of the total national budget that would be adequate for all activities related to NCA implementation in each relevant MDA. Strengthen and build internal human capacity and technical expertise in all relevant organizations for the implementation of NCA-related activities.
Institutional arrangement	Goal 2: Institutional arrangements are established to support NCA effectively and collaboratively.	KO 2.1: An institutional framework that effectively manages an integrated system of Environmental, Ecosystem and Economic Accounts that should be established and validated. KO 2.2: NCA-related policy actions are enhanced in policy cycles. KO 2.3: A community of practice (CoP) for advancing NCA in Ghana is well established.	Establish institutional arrangements and facilitate policy provisions for NCA-related actions and activities.
Statistical Infrastructure	Goal 3: Statistical infrastructure on NCA is well developed and strengthened for the regular production of an integrated suite of natural capital accounts.	KO 3.1: Compile and regularly publish natural capital accounts and environmental-economic statistics at national, sub-national and local scales across Ghana. KO 3.2: Use, improve and document the standards, methodologies and classifications for compiling natural capital accounts. KO 3.3: Documentation, methodologies and all that is learned contribute to NCA knowledge.	Create mechanisms for multiple sources of data to be validated, accessible and available for the compilation of NCA.
NCA mainstreaming	Goal 4: Information from NCA is well mainstreamed into all MDAs as well as used for integrated planning, decision-making, monitoring and evaluation across all scales, sectors and biomes.	KO 4.1: Use of natural capital accounts-based indicators and information for high-level and sectoral policies and planning is increased. KO 4.2: Public discourse stimulated with information from NCA. KO 4.3: High-risk biodiversity areas and demographic groups are prioritized in decision-making and development planning.	Engage a central coordinating body, such as the NDPC, to support the integration, communication and consultation of information/data from NCA into Ghana's policy landscape for cross-cutting decision- and policy-making, planning and implementation.

### 3. Building Blocks

This national plan proposes four critical building blocks for NCA implementation in Ghana: 1) Required Resources and Capacity, 2) Institutional Arrangements, 3) Statistical Infrastructure and 4) Mainstreaming. These building blocks are interconnected and mutually reinforcing. They interact constructively to establish a cohesive statistical system that integrates Natural Capital encompassing both economic and environmental data. Once in place, this statistical system will offer credible evidence for decision-making and integrated planning for sustainable development in Ghana. (Figure 1).

#### 3.1 Required Resources and Capacity

Implementing NCA at the national level requires securing necessary resources (such as funding) and building human capacity. Although the Environmental Protection Agency (EPA) has limited funding and human capacity, it has been able to progress steadily with the implementation of NCA. However, additional resources for strengthening the data landscape, institutional arrangements and technical skills development on NCA-related data standards, classifications and definitions are needed. Further investments in capacity development for monitoring and forecasting Ghana's stocks and flows of natural capital are also required.

#### Resource Mobilization

The NDPC, the Ministry of Finance and Economic Planning (MoF) and local governments can build on the collaboration and awareness raised by the National Resource Governance Programme, to further integrate NCA programmes and initiatives into their planning, policies and systems. Such integration has the potential for reprioritization of budgets and additional investment from other sources. NDPC may be able to mobilize resources for NCA investment and direct investments where they are needed most. A priority action would be to:

- Allocate a percentage of the total national budget that would be adequate for all activities related to NCA implementation in each relevant MDA.

#### Capacity Building

Building and strengthening internal in-country capacity for the production, use and uptake of

These building blocks aim to strengthen the role of NCA in national policy and enable evidence-based decision-making. NCA provides robust scientific evidence to support the establishment of priorities, strategies and targets. This further provides the groundwork of a framework for monitoring.

The following sections highlight the priority actions within and across the building blocks for NCA implementation. The priority actions for each building block and goal will provide guidance for the related activities required for each corresponding objective.

NCA is a key step for advancing NCA. Evidence-based decision-making can be strengthened on the use and potential application of NCA among all stakeholders, including policy-makers, media, private sector, academia and civil society. Training workshops on the multidimensional aspects of NCA can be held across Ghana. A priority action would be to:

- Strengthen and build internal human capacity and technical expertise in all relevant organizations for the implementation of NCA-related activities.

#### 3.2 Institutional Arrangement

Enhancing institutional arrangements and enabling policy such that systems are in place to manage a country's natural capital are essential components of advancing NCA in Ghana.

The GSS (the National Statistical Office), The Ministry of Environment, Science, Technology and Innovation (MESTI) and EPA are the leading agencies for coordinating NCA-related activities in Ghana. Other national agencies will contribute to generating relevant natural capital data to support planning, implementation and reporting. However, high-level coordination and enabling policies between the government and relevant partner organizations are needed to ensure natural capital is systematically integrated into the economy.

The institutional arrangements should harness existing processes, occur at multiple levels and involve diverse groups. This national plan proposes the following institutional structure (Figure. 2).

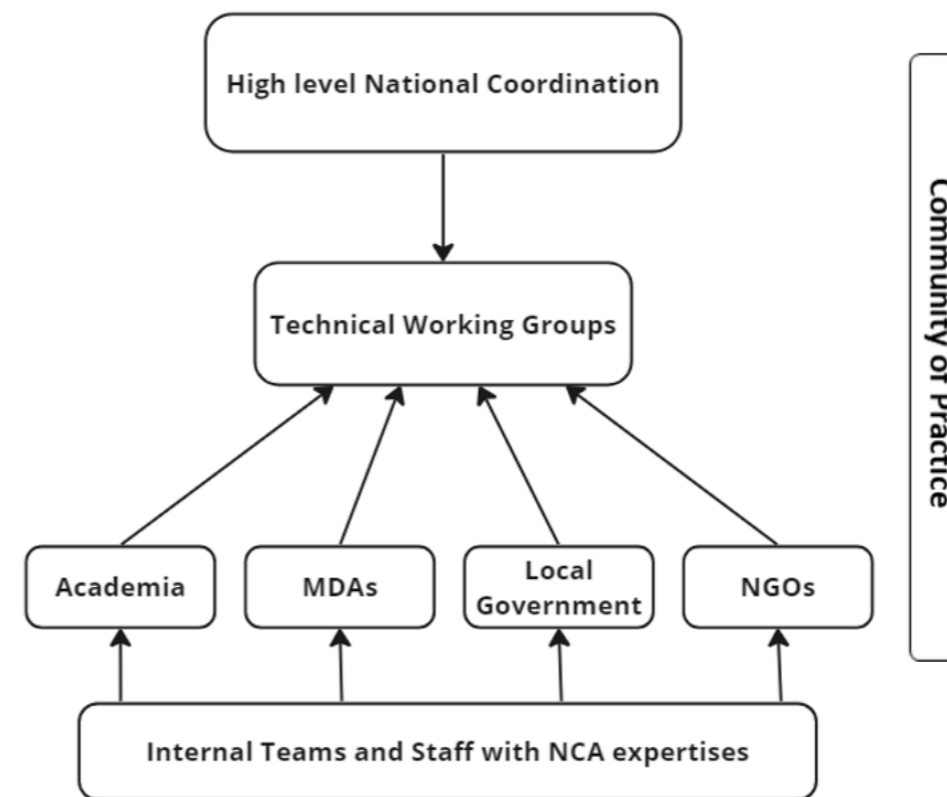


Figure 2. Proposed institutional structure

#### High-level National Coordination

High-level national coordination is important for implementing NCA. In Ghana, the NDPC is the central planning and coordinating agency mandated to ensure policy coherence and coordinate the program of economic and social development policies. Hence, NDPC can play a key role in ensuring effective coordination, mainstreaming and integration of NCA-related policy actions across policy cycles. Such mechanisms can strengthen the institutional arrangements and statistical infrastructure in the Long-term National Development Plan of Ghana (2018 – 2057) and the National Medium-term Development Policy Framework (2022-2025) among others.

#### Technical Working Groups

Technical working groups for thematic and ecosystem accounts such as Agriculture, Forest and Fisheries accounts, Energy accounts and Mineral accounts are important for compiling data, establishing NCA structures and promoting their usage. These groups can also advance the institutionalization of the key tasks and activities of NCA, such as developing capacity and fostering the policy usage of NCA data and knowledge on a specific theme.

Technical working groups can include more relevant partners, such as academic researchers, Non-Governmental Organizations (NGOs) and government

officials from Metropolitan, Municipal and District Assemblies. These groups can take on various responsibilities, such as constructing information systems, carrying out the collection, processing and interpretation of data and ensuring that partner organizations work together effectively to accomplish these tasks.

Ghana can strengthen the functioning of these teams and working groups and further develop sub-working groups based on priorities and others, which have not yet been formed. Depending on the accounts being compiled at the time, these working groups have the potential to evolve and collapse according to needs.

#### Other Arrangements

The creation of an open national Community of Practice would enable ongoing participation between all stakeholders that have previously engaged with NCA-related activities. This platform should align with regional and global communities of practice that would benefit from knowledge exchanges, best practices and lessons learned.

Overall, strengthening institutional arrangements is imperative for effective NCA implementation in Ghana, as it would foster collaboration, coordination and knowledge-sharing among stakeholders across various levels and sectors. A priority action would be to:



- Establish institutional arrangements and facilitate policy provisions for NCA-related actions and activities.

### 3.3 Statistical Infrastructure

Statistical infrastructure refers to the statistical methods and tools that support the data and information framework. It is the foundational element for producing reliable, robust and credible statistics required for decision-making at all scales.

NCA is increasingly recognized as a mechanism to strengthen statistical systems. The SEEA framework was adopted as the global statistical framework in response to the demand for NCA to better inform national development planning (UN *et al.* 2014). This framework supports decision-makers in considering several land-use options, evaluating progress against policy targets and the formulation of appropriate policy (Vardon *et al.* 2018). The SEEA aims to extend the SNA, which is used for producing statistics and measurement of economic activity (Vardon *et al.* 2019). This multipurpose framework delivers consistent, regular and harmonized data on environmental resources. The United Nations Statistical Commission (UNSC) has motivated nations to implement the SEEA Ecosystem Accounting (EA) (2021) in their territories (United Nations *et al.* 2021). Hence, Ghana should ensure that the principles of the SEEA EA framework are embedded in the state-of-the-art progress of NCA.

In parallel, the compilation of SEEA accounts can be supported with several tools such as global and national data sets, modelling platforms and ecosystem classification frameworks. GSS is the custodian of statistical infrastructure in Ghana (GSS 2019). This organization can ensure the integration of global and national approaches for the effective implementation of NCA. For instance, data on monetary statistics can be derived from the national accounts and data on emissions can be obtained from the EPA pollutant release and transfer registries and greenhouse gas inventories. Existing energy statistics can inform energy flow accounting.

Since most of the available data are aggregated at different scales and for different purposes, the development of SEEA-based accounts will require disaggregated data, especially at the local, sectoral and firm levels. The development and compilation of accounts require access to diverse data from multiple sources. Data sharing and interoperability are critical for making this process simpler. It is important to align the NCA effort with other government initiatives

aimed at improving data sharing and interoperability while maintaining data protection. A priority action for constructing a robust statistical infrastructure and data landscape in Ghana would be to:

- Create mechanisms for multiple sources of data to be validated, accessible and available for the compilation of natural capital accounts.

### 3.4 Mainstreaming

Mainstreaming entails the integration of the consideration of biodiversity and the services it provides Ghanaians into policies and practices that rely on or have an impact on it.

Mainstreaming takes place throughout the policy cycle at multiple scales and sectors. The Policy Cycle is comprised of four stages: problem framing, policy framing, policy implementation and monitoring and evaluation (Figure 3). The information and concepts of NCA can be mainstreamed at each stage to integrate environmental and biodiversity information into Ghana's economic policies and practices. Specifically, NCA can be used to identify policy entry points, conduct research to inform strategic planning and communicate the value addition of NCA.

#### Mainstreaming Across Policy Objectives

In Ghana, several policies serve as entry points for mainstreaming the information provided by NCA. Examples include the Long-term National Development Plan of Ghana (2018 – 2057), the National Medium-term Development Policy Framework (2022-2025), the NBSAP (2016), Sustainable Management of Fisheries Resources, Forest Conservation and Creative Arts and Tourism, among others (GSS *et al.* 2022). NCA can also enhance the evidence base for measuring policy impact in the Monitoring and Evaluation stage. The integrated economic and environmental information from NCA can support decision-makers in adjusting and aligning policies for better outcomes. Following the adoption of the 2030 Agenda in 2015 (UN 2015), monitoring and measuring progress on the implementation of the SDGs has justified the need for integrated frameworks, which has increased the demand from decision-makers and policy-makers for integrated information and high-quality statistics (UN 2017). The SEEA is regarded as one such common framework for monitoring the impact of policy and reporting on the progress of the 2030 Agenda (UNSD 2019).

Policy identification and design exercises among



Figure 3. NCA mainstreamed into the Policy Cycle (adapted from (Vardon *et al.* 2017))

stakeholders can be helpful where the information from accounts is analyzed to support identified policy interventions, such as Fisheries Accounts and Marine and Coastal Ecosystem Service Accounts for the Blue Economy and Land and Soil Accounts for Sustainable Agriculture (GSS 2023). Throughout these exercises, NCA showed that it can facilitate an inclusive and multistakeholder approach to policy, both serving and driving changes to policy across Ghana. This activity can be replicated for policy framing, monitoring and evaluation that can inform the NCA value chain. This is important because policy framing can increase the demand for relevant accounts to be compiled and subsequently enhance the uptake and usefulness of accounts once they are published.

Information from NCA can further be used to inform national development planning and strategies addressing Climate resilience and Livelihoods, Water resources management and Sustainable Agriculture and Forestry (GSS *et al.* 2022)

Mainstreaming is an ongoing process and is informed by continuous learning. The NDPC can provide the overarching coordination role to mainstream NCA and its outputs into national policies and development planning. Such policies may address poverty eradication strategies, integrated land use plans or sectors with significant impacts on biodiversity. More details on mainstreaming are included in the implementation strategy, which is a dynamic “living document” that will need to be regularly updated. A priority action for mainstreaming will be to:

- Engage a central coordinating body, such as the NDPC, to support the integration, communication and consultation of information/data from NCA into Ghana's policy landscape for cross-cutting decision- and policy-making, planning and implementation.



## 4. Monitoring & Evaluation Framework

A monitoring and evaluation framework based on the proposed goals and objectives of the national plan is presented in Table 2.

**Table 2: Monitoring and Evaluation Framework**

*Overall Outcome: An all-encompassing system of NCA in place by 2034 that meets the demands of the national and sector-specific plans of sustainable development and nature.*

Goal 1: Resources and capacity for advancing NCA are developed and enhanced.	
Key Objectives	Output Indicator
KO 1.1: Mobilize resources for the data landscape, institutional arrangements and budget for NCA.	No. of NCA-related activities included in budgeting plans in MDAs.
KO 1.2: Improve knowledge, capacity and forecasting of Ghana's stock and flows of natural capital.	No. of Officers participating in knowledge platforms and training events. No. of Officers involved in the compilation of accounts.
KO 1.3: Build skills for NCA-related data standards, classifications and definitions among all public and private sector organizations.	Regular skills audit conducted (To include no. of NCA skills development activities and no. of beneficiaries).
Expected Outcome 1: Improved knowledge, capacity and resource mobilization for the effective compilation and application of natural capital accounts based on the SEEA framework.	
Goal 2: Institutional Arrangements are established to support NCA effectively and collaboratively.	
Key Objectives	Output Indicator
KO 2.1: Build and validate an institutional framework that effectively manages an integrated system of Environmental, Ecosystem and Economic Accounts.	The institutional framework developed and validated. No. of organizations that have institutionalized NCA
KO 2.2: NCA-related policy actions are enhanced in policy cycles.	No. of policy reports and plans with NCA-related activities.
KO 2.3: A CoP for advancing NCA in Ghana is well established.	CoP established. Equal gender balance in the CoP. Percentage of stakeholder representativity participating in the CoP
Expected Outcome 2: Enhanced coordination, stakeholder engagement and institutional arrangements established to provide the enabling conditions for effective implementation of NCA.	

Goal 3: Statistical Infrastructure on NCA is well developed and strengthened for the regular production of an integrated suite of natural capital accounts.	
Key Objectives	Output Indicator
KO 3.1: Compile and regularly publish natural capital accounts and environmental-economic statistics at national, sub-national and local scales across Ghana	No. of accounts published. Indicate scale (national, regional or local), new (pilots) or updates (follow-up accounts).
KO 3.2: Use, improve and document the standards, methodologies and classifications for compiling natural capital accounts.	No. of documents published on standards developed and methodologies used (include reviews and updates).
KO 3.3: Documentation, methodologies and all that is learned contribute to NCA knowledge.	No. of publications recorded and available in the internal registry/library. Reports on the information management systems accessed and used.
Expected Outcome 3: Improved data and statistical infrastructure with SEEA consistent ecosystem accounts being produced and updated annually, in line with the SNA.	

Goal 4: Information from NCA is well mainstreamed into all MDAs as well as used for integrated planning, decision-making, monitoring and evaluation across all scales, sectors and biomes.	
Key Objectives	Output Indicator
KO 4.1: Increased use of natural capital accounts-based indicators and information for high-level and sectoral policies and planning.	No. of reports/policies across sectors that integrate information on biodiversity and natural capital.
KO 4.2: Public discourse stimulated with information from NCA.	Communication and Advocacy plan for NCA developed. No. of communication channels for NCA information dissemination established and updated.
KO 4.3: High-risk biodiversity areas and demographic groups are prioritized in decision-making and development planning.	No. of stakeholder engagement and consultation platforms on NCA and high-risk biodiversity areas held. No. of participants recorded disaggregated by gender and ethnicity.
Expected Outcome 4: NCA principles are mainstreamed in Ghana to inform poverty alleviation, national development planning and contribute to the effective implementation of the Kunming-Montreal Global Biodiversity Framework.	

The framework will be supported by the implementation strategy, which will be updated and validated through regular stakeholder consultation. The GSS is the custodian of this national plan. In partnership with the NDPC and consultation with national partners and relevant stakeholders, the GSS will monitor and evaluate the implementation of this plan.

## 5. Policy Uses and Priorities

The government of Ghana has developed several national policies and adopted international agreements for the conservation and sustainable use of natural capital (GOG 2021). These national interventions are considered high priority. They serve as policy entry points that require integrated information on biodiversity to influence decision-making and their implementation can be supported by NCA. The SEEA-Ecosystem Accounting (SEEA-EA) recognizes that such policy responses or entry points allow certain themes to emerge. These themes will have implications for setting government priorities.

During the development of this national plan, which was underpinned by the user needs assessment and comprehensive stakeholder consultation, priority themes for advancing NCA have emerged:

- Blue Economy
- Effective protected areas management
- Sustainable agriculture and forestry
- Water resources management
- Sustainable use of natural resources
- Climate resilience and livelihoods

The themes can then lead to the compilation of specific natural capital accounts that address specific provisions within the respective policies, strategies and plans by providing the necessary information or evidence to influence decisions and policy-making. For example, the Long-term National Development Plan of Ghana (2018-2057) has a policy provision for coastal and marine resources and services. NCA can address the policy intervention of how to map and value coastal and marine areas for their protection and sustainable use.

Potential accounts can provide spatially explicit information on the extent and condition of marine and coastal ecosystems and the supply and use, in physical and monetary terms of ecosystem services. Similarly, the National Medium-term Development Strategy (2022-2025) has a policy provision to ensure sustainable development and management

of fisheries resources. NCA can address how to facilitate sustainable marine conservation and enhance fisheries infrastructure to attract investment from the private sector. Potential accounts can provide information on fish stocks, the condition of fishery ecosystems and the supply and use of fish provisioning services.

These themes can be further validated through stakeholder consultation and prioritized based on their respective frequency of occurrence. In the past, Ghana has compiled thematic natural capital accounts for carbon, mineral assets and energy flow. Following the compilation of these accounts Ghana implemented measures to reduce carbon emissions and has been promoting sustainable energy practices (Ministry of Energy 2021). Various stakeholders have expressed interest in developing many other accounts on biodiversity, including agriculture, fisheries, forests, water, land, minerals, soil and waste.

The feasibility study (EPA 2016c) – “Building NCAs for Ghana”, highlighted the need to prioritize specific accounts based on national policy priorities, commitments at the international level such as the GDSA and the Convention on Biological Diversity (CBD), data availability, financial resources and stakeholder interest. Subsequently, Energy flow, Land, Soil and Forest accounts were prioritized, building on previous work conducted under the World Bank WAVES partnership. Hence, in 2023, the land and ecosystem extent accounts, forest ecosystem provisioning services and accounts for carbon, sedimentation and water regulation services are being compiled under the World Bank GPS. The United Nations Food and Agriculture Organization (FAO) is currently supporting the production of Air Emissions accounts and exploring the linkages with food systems and Food Value Chain analysis for 2023 and possibly, 2024.

Drawing upon the results of the feasibility study undertaken in 2016 by the EPA in collaboration with the GSS and subsequent stakeholder consultations conducted in 2023 under the Darwin Initiative, a reassessment of existing priorities has led to the formulation of updated priorities for the compilation of SEEA accounts (Figure. 4).

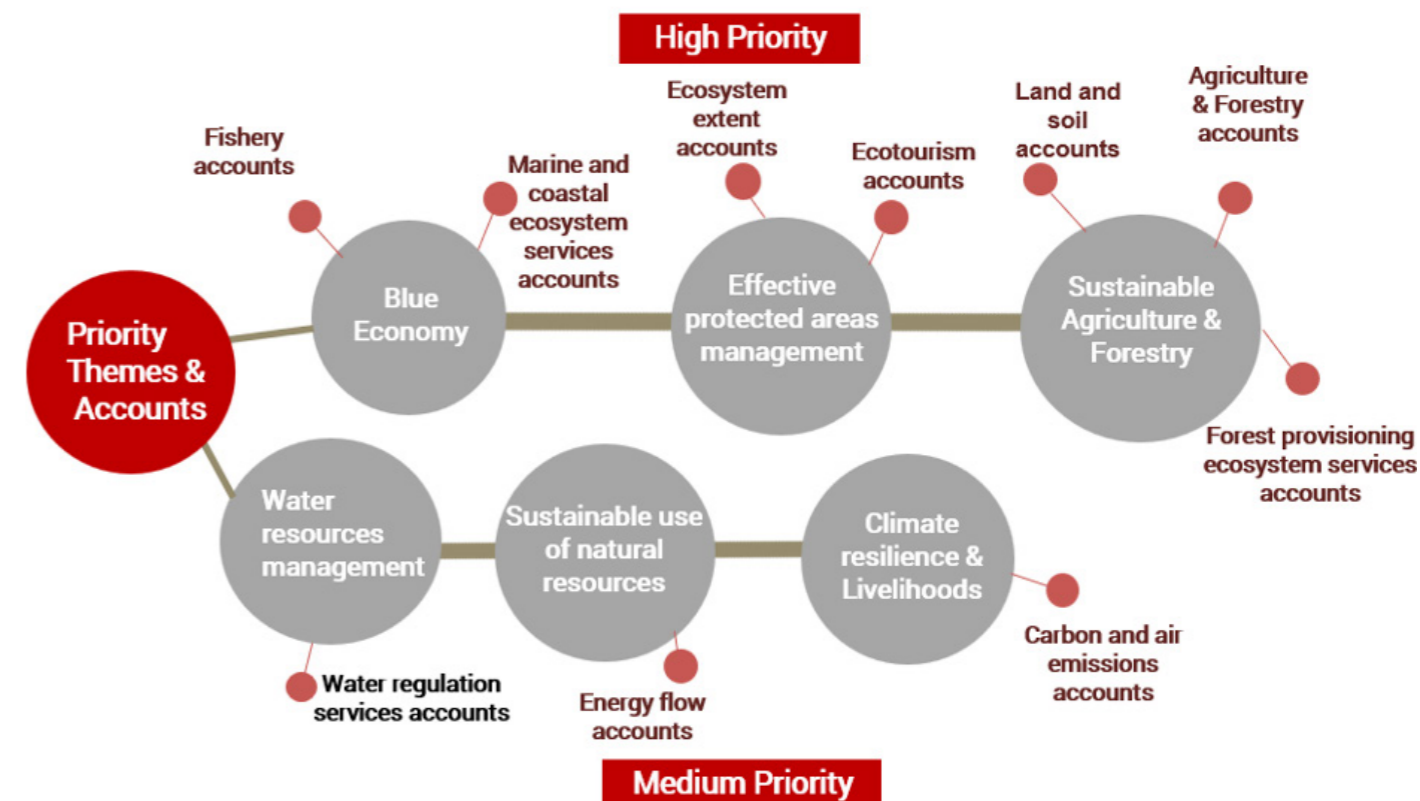


Figure 4. Priority Themes and Accounts

The accounts emerging from follow-up consultation processes are intended to influence the national, sub-national and local policy imperatives in a cyclical manner, i.e., information from accounts informs policy-making and decision-making. Subsequently, demand for relevant and priority accounts can increase.

Improved spatial planning, which includes developing and strengthening databases on integrated land use planning and enhancing local capacity to promote sustainable spatially integrated development, are other national priorities for Ghana (GoG 2021). It is essential for developing and communicating a coherent picture of the trade-offs between economic activities, such as agriculture, ecosystem-level biodiversity and the services supplied by natural ecosystems (King *et al.* 2023). Spatial assessments play a crucial role in supporting NCA by providing detailed information about the location, extent and condition of natural assets. These spatial assessments, once regularly compiled, can provide time series data for the compilation of accounts.

Building on the first comprehensive national spatial biodiversity assessment, additional training is needed to produce regular spatial assessments that include relevant land cover, land use and ecosystem maps. These can better support integrated environmental-economic analyses and produce baseline information and time series data for the regular production of accounts.

Other specific priorities that pertain to natural capital include monetary valuation of natural capital assets such as payments for ecosystem services programmes, plantation development and ecotourism opportunities (GOG 2021), informing the updating of the NBSAP (MESTI 2016) and further mainstreaming of natural capital into Ghana’s Landscape, Restoration and Small-Scale Mining Project (GLRSSMP). GLRSSMP is a World Bank supported project in partnership with the government of Ghana to address issues in agricultural productivity, forest landscape management and sustainable small-scale mining (EPA *et al.* 2021).

## 6. Way Forward

This national plan serves to guide the government of Ghana in establishing a national system for the regular production of natural capital accounts and related environmental-economic statistics over the next decade. Once established, this system will offer credible evidence to support decision-making and integrated planning and for sustainable development in Ghana.

Following policy objectives for improved fiscal performance and sustainability (GOG 2021), there has been growing interest within the government for different approaches on integrating the value of Ghana's natural capital in macro-economic reporting, which catalyzed support for NCA. It is envisioned that a national system of NCA that interfaces with the national statistical information system, will help Ghana transition towards achieving its aspiration of a green GDP as communicated at several NCA-related platforms by the government of Ghana. Leveraging the progress achieved through prior Natural Capital Accounting (NCA) initiatives led by the government of Ghana in collaboration with development agencies and considering regional and global advancements and commitments, this plan seeks to create a comprehensive NCA system by 2034. The objective is to align with the requirements of national and sector-specific plans for sustainable development and conservation.

For Ghana to advance the national implementation of NCA, the following steps need to be prioritized:

1. The plan must be published by the GSS and launched at the 3rd and final consultation meeting in February 2024. The plan must be circulated across all MDAs in Ghana and be mainstreamed over the implementation period into policy, land-use planning and budgetary allocations. This step is necessary for the nationwide adoption and implementation of natural capital accounting across Ghana.
2. An implementation strategy must be established that supports the national plan, which includes the activities needed for the achievement of the objectives and the desired outcomes. This strategy needs to be regularly updated to consider changing government priorities.

The GSS is the custodian of this plan and its supplementary outputs. The NDPC is strategically placed to adopt this plan as an overarching framework for mainstreaming NCA and the information arising from accounts across all ministries, departments and organizations. Given the urgent need for transformative change for economic systems globally, the NDPC in collaboration with relevant stakeholders can help realize this plan's vision and its overarching outcomes. This will help Ghana advance on its path towards economic transformation.



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### Annex I: Relevant National Policies

The national plan responds with several national policies in Ghana.

#### Coordinated Programme of Economic and Social Development Policies (CPESDP) 2017-2024

The CPESDP is focused on building a flourishing country, where opportunities are created for all, while safeguarding the environment and maintaining a stable, united and safe country. The Programme identifies selected flagship programmes related to mineral extraction, coastal erosion, waste and pollution, deforestation, soil erosion and infrastructure maintenance and protected areas. Overall, the CPESDP provides a comprehensive diagnosis of Ghana's socio-economic challenges and outlines a vision for the country's development.

#### Long-term National Development Plan of Ghana 2018 - 2057

The long-term development plan of Ghana is a strategic framework that aims to build an inclusive, industrialized and resilient economy. It aims to create an equitable, healthy and disciplined society. There are provisions for building safe, well-planned and sustainable communities and effective, efficient and dynamic institutions. Ghana's role in foreign affairs will also be strengthened. This long-term plan is composed of four medium-term development plans, which within a period of 10 years will guide successive governments in preserving Ghana's biodiversity, forests, land and water bodies within the context of Ghana's green economy strategies and policies.

#### National Medium-term Development Policy Framework 2022-2025

The National Medium-term development policy framework is aimed at enhancing sustainable development in Ghana, with one of its six medium-term goals specifically focused on ensuring a built environment that is resilient and safeguarding the natural environment. The strategy proposes various actions for supporting the sustainable management of water resources, sustainable extraction of mineral resources, improving marine and coastal management, reducing environmental pollution, combating deforestation and enhancing coordination and institutional capacity for effective climate action and resilience.

#### National Biodiversity Strategy and Action Plan 2016

Ghana ratified the CBD in 1994 and first published the National Biodiversity Strategy and Action Plan (NBSAP) in 2000, with the goal "To pursue effective policies, regulations and programmes that would ensure that biodiversity is valued, conserved, restored and wisely used to maintain ecosystem services, sustain life support services and promote the continuous and equitable flow of benefits to all Ghanaians". NCA will add value to the achievement of the overall goal of Ghana's NBSAP. It supports the monitoring and implementation of several national plans, including Action Plan 2 on biodiversity mainstreaming and Action Plan 7 on forestry, aquaculture and sustainable agriculture. Ghana is considering updating their NBSAP to align with the Kunming-Montreal Global Biodiversity Framework.

#### Ghana's Nationally Determined Contributions 2021

Aligned with Article 4 of the Paris Agreement and United Nations Framework Convention on Climate Change (UNFCCC) decisions, Ghana has updated its nationally determined contribution from 2020 to 2030. Based on extensive stakeholder consultations with relevant institutions at both national and sub-national levels, the updated Nationally Determined Contribution will serve as a blueprint for transitioning into a climate-resilient low carbon economy. Ministries, Departments, Agencies, Metropolitan, Municipal and District Assemblies, development partners, private sector, academia and Civil Society Organizations were consulted.

## Framework for the Development of Environment Statistics (FDES) 2020

Ghana produced its first compendium on environmental statistics in 2020 based on the framework for the development of environmental statistics. The FDES is a comprehensive and integrative statistical framework that nationally guides information collection and compilation of environment statistics. It provides a standardized structure for collecting and synthesizing data, which is compatible with other frameworks and systems such as the SEEA and the SDGs. The data collected from FDES aids in planning and monitoring progress toward the achievement of the SDGs, the AU Agenda 2063 and other relevant national policy initiatives. Ghana, through the GSS, has produced a compendium on environmental statistics.

## National Gender Policy, 2015

The National Gender policy calls for the integration of gender into the environment and natural resource management, particularly in land management to catalyze economic development, reduce poverty and promote social stability. The policy recognizes the need for gender-sensitive data in natural resource management and decision-making.

## Annex II: Process for Developing the National Plan for NCA

The national plan is an outcome of effective stakeholder collaboration in Ghana. The development of the national plan for NCA comprised of the following steps:

1. Compilation of the Stakeholder Mapping and User Needs Assessment Report (GSS et. al. 2022). identifying the key policy and information demands that NCA in Ghana should meet. This report provides a background on Ghana's context, policies, strategies and initiatives related to NCA and offers the stakeholder mapping of both existing and potential users and producers of accounts, a preliminary user needs assessment and an assessment of the information and data infrastructure in Ghana for potential accounts.
2. Stakeholder consultation workshops were conducted in Ghana to validate the user needs assessment and the draft national plan. This ensured that the development of the national plan was a country-driven process to build internal capacity on the foundations and applications of NCA and SEEA EA. Workshop findings and stakeholder feedback were integrated into the national plan for advancing NCA in Ghana. There were sixty-one participants drawn from various government institutions, Academia, Non-Governmental Organizations (NGOs), research organizations and the media. A 2nd stakeholder workshop was convened and forty-nine participants attended.
3. A scoping assessment of twelve national plans and strategies across various regions including Africa, Asia, North America, the Americas and Australasia was conducted, to review the existing national plans and strategies on NCA and to draw on best practices, lessons learned and the most valuable experiences from the implementation of those plans and strategies.
4. Meetings, discussions and feedback from partners in Ghana, particularly the GSS and the EPA, helped define the scope and vision with evidence-based information from the national context that was integrated into the national plan. This ensured that the process remained demand-driven and owned by the people and stakeholders of Ghana.
5. The research and compilation stage which followed the 1st stakeholder consultation workshop held in January 2023, entailed conducting a literature review of the existing NCA landscape in Ghana, collating the findings from high-level discussion documents, particularly the "Implementation Strategy for Natural Capital Accounting in Ghana" (EPA 2017); "Feasibility study on NCA"(EPA 2016c)" and "a Critical analysis

of building Natural Capital Accounts for Ghana" (EPA 2016b) compiled by the EPA. This took place over three months. The 1st draft of the national plan was compiled by integrating the overall findings from the user needs assessment, the inception stakeholder workshop, the scoping assessment and inputs received through engagement with Ghana partners, including the GSS, EPA, MESTI, NDPC and others. The 1st draft was consulted at the 2nd Stakeholder consultation workshop held in 2023. Stakeholders engaged in a process to review the text and provided text changes to the document. Five working groups at the workshop were established to review the chapters of the document. Comments were addressed by the UNEP-WCMC project team, and a 3rd version of the document was compiled in July 2023. The document was reviewed according to UNEP-WCMC publication standards from August to November 2023 and finalized in December 2023.

## Annex III: Roles and Responsibilities of Stakeholders

Name of the organization	Role or mandate	Potential user demands for NCA
Ghana Statistical Service	Collects, manages and processes information on natural capital. Is responsible for calculating national statistics.	Deliver regular statistics on the trends in the stocks and benefits from natural capital to decision-makers, analysts and other stakeholders.
Ministry of Environment, Science and Technology & Innovation (MESTI)	Reconstituted in 2008, coordinates activities related to climate change across government. Collaborates with UNEP initiatives on the green economy.	To demonstrate the value of natural capital, hence ecosystem services, to better mainstream biodiversity into decision-making. To inform their management planning of natural capital. To track progress towards national biodiversity objectives (e.g., Aichi Targets)
Environmental Protection Agency (EPA, under MESTI)	Improves and conserves the country's environment.	To highlight trends and status of natural capital and the benefits it provides to decision-makers. To inform their management planning of natural capital. To track progress towards own targets for natural capital.
National Development Planning Commission (NDPC)	The NDPC works closely with the President of Ghana. The commission makes provisions for a coordinated program of Economic and Social Development policies.	To integrate the multiple benefits of biodiversity, ecosystem services and mainstream into national development policies. To track sustainable development progress (e.g., towards SDGs)
Ministry of Finance & Economic Planning (MoF)	Ensure the achievement of macroeconomic stability and sustainable economic growth by developing and implementing effective economic policies. These policies focus on sound fiscal practices and optimize public financial management.	To inform green economy policy-making and economic development planning based on the sustainable use of natural capital.

Name of the organization	Role or mandate	Potential user demands for NCA
Bank of Ghana	Formulate and implement monetary policy to promote and maintain financial stability	To inform investment planning, budget allocations and development of incentives for natural capital.
Land Use and Spatial Planning Authority (LUSPA, under MESTI)	Ensures the sustainable development of land and human settlements.	Inform an integrated spatial planning approach that delivers better outcomes for people and biodiversity in Ghana.
National Biosafety Authority (NBA, under MESTI)	Supervises and controls the handling, transfer and use of genetically modified organisms (GMOs).	Track trends in genetic biodiversity and the use of GMOs.
National Biodiversity Steering Committee (initiated by MESTI)	Ghana's National Steering Committee for the implementation of the CBD was formed in February 2000 by the then Ministry of Environment and Science, which used to be the Focal Point for the Convention.	Providing indicators to track progress on NBSAP action plans, and targets and for mainstreaming biodiversity into decision-making.
Ministry of Lands and Natural Resources (MLNR)	Manages the land, forestry, wildlife and mining policies. These policies include information on natural capital for decision-making through ways other than natural capital accounts.	Providing an information system that is integrated and supports sustainable forestry planning, land use and mining that does not degrade biodiversity.
Ministry of Food and Agriculture (MoFA)	Lead agency and focal point of the Government of Ghana. Develops and executes policies and strategies for the agriculture sector within the context of a coordinated national socio-economic growth and development agenda.	Provide information on trends in agricultural land quality, soil resources, biodiversity (e.g., pollinators), crop and livestock provisioning, economic output, livelihoods and food security to inform a sustainable and climate-smart agricultural sector in Ghana.
Ministry of Fisheries and Aquaculture Development	Implements strategic development approaches that would enhance the contribution of the fisheries sector and industry to the overall development of Ghana.	Provide information on trends in fishery stocks, fisheries conditions, fish catches and their links to economic output, food security, livelihoods and poverty alleviation to inform an inclusive and sustainable fisheries sub-sector that can enhance Ghana's development.

Name of the organization	Role or mandate	Potential user demands for NCA
Environmental and Natural Resources Advisory Council	A high-level body that provides advice to parliament on environmental matters and natural resource issues.	Highlight trends and status of natural capital stocks and the associated benefits they provide. Demonstrate the role of biodiversity in economic development, climate change mitigation and adaptation, social welfare, poverty alleviation and livelihoods.
Forestry Commission	The Forestry Commission of Ghana is responsible for the regulation and use of forest and wildlife resources and the management and conservation of these resources. They are also responsible for the coordination of associated policies.	Inform an integrated forest land use planning approach that delivers on economic and livelihood objectives, while also delivering on social welfare (e.g., maintaining NTFPs, regulating ecosystem services, cultural services) and biodiversity objectives for Ghana's forests. To track progress towards own targets for forest resources, ecosystem services and biodiversity.
Lands and Forestry Committee of the Parliament of Ghana	Members of the committee examine all matters relating to lands and forestry generally.	Provide information on trends in forests, forest conditions, forest biodiversity and the multiple economic and social benefits forests provide so these can be considered when examining forestry and land use activities.
Ministry of Local and Rural Development (MLGRD)	Enhances decentralized governance and improved access to services at the sub-national level through the formulation of policies, programmes and projects and monitoring and evaluation of their implementation using professional staff and appropriate technology	Providing spatially disaggregated indicators on biodiversity, ecosystem services and the multiple benefits they deliver to inform decision-making for achieving improved social welfare and sustainable development locally.
Council for Scientific and Industrial Research (CSIR)	A public institution in Ghana that leads on scientific research	Provide regular information on the relationship between the economy, society and natural capital to support research

Name of the organization	Role or mandate	Potential user demands for NCA
Local Governments	Overseeing local land use planning and management of natural capital	Providing an information data set that can support land use planning at the local level with improved outcomes for livelihoods and biodiversity (subject to adequate disaggregation of spatial data).
Conservation Alliance (and other environmental NGOs)	Conservation Alliance is one of several environmental NGOs working on conservation projects in Ghana	As a public information management system that supports holistic planning and land use, which offers better outcomes for ecosystems, biodiversity and for the local communities.
The University of Ghana (and wider academia)	The University of Ghana hosts the Centre for Biodiversity Conservation Research. Many similar academic bodies research biodiversity and its relationship with the economy and well-being.	As a public information and data management system that support analysis and research on natural capital and its connections with the economy and social well-being.
General public / Media		Communicating and understanding the state, and benefits of natural capital and whether it is being managed in an equitable and sustainable manner.
Private sector		To identify investment opportunities linked to natural capital (e.g., ecotourism and possibilities for payments for ecosystem services).

#### Annex IV: Stakeholder List for the 1st Consultation Workshop

NO.	NAME	INSTITUTION
1	Steven King	UNEP-WCMC
2	Dr Nana Owusu Ansah	Ghana Wildlife Society (GWS)
3	Ayesha Amadu	Council for Scientific and Industrial Research-water resource
4	Hayford Agbekponu	Fisheries Commission
5	Paul Seneadza	Ghana Statistical Service
6	Dzifa-Gwira-Mensah	Ghana Statistical Service
7	Stephen Acheampong	Ghana Statistical Service
8	Bernice Serwah Ofosu-Baadu	Ghana Statistical Service
9	Asuo Afram	Ghana Statistical Service
10	Ernest Lamptey	Former Connect Project Manager
11	Dr Kiruben Naicker	UNEP-WCMC
12	Stephen N.D. Tamanja	Forestry Commission
13	Eureka E.Ahadjie Adomako	University of Ghana
14	Ishmael Nii Adjei Browne	Ministry Of Fisheries and Aquaculture Development (MOFAD)
15	Kwesi Anderson	National Biosafety Authority (NBA)
16	Jewel Kudjawu	Environmental Protection Agency
17	Daniel Ashie Kotey	Council for Scientific and Industrial Research -PGRR
18	Roland Asare	Council for Scientific and Industrial Research -STEPRI
19	Richard Appoh	Ghana Wildlife Society (GWS)
20	Dr. Benjamin O. Botwe	University Of Ghana- Legon
21	Amlanu Joshua	Business and Financial Times (BFT)
22	Kweku Zurek	Graphic Online
23	Edem Kojo Doe	Parks and Gardens
24	Elliot Ansah	Ghana Statistical Service
25	Kwame B. Fredua	Environmental Protection Agency
26	Anthony Mba	International Union for Conservation of Nature (IUCN)
27	Dr. Emmanuel Amoakwah	CSIR-Soil Research Institute
28	David K Galley	Forestry Commission
29	Ralph Amoh	Institute of Statistical, Social and Economic Research (ISSER)
30	George O. Essegbey	Council for Scientific and Industrial Research -(Retired)



Annex V: Stakeholder List for the 2nd Consultation Workshop

NO.	NAME	INSTITUTION
31	Killian B. Gyrator	Ministry of Tourism, Arts and Culture (MOTAC)
32	James Oppong	Forestry Commission Wildlife
33	Cynthia Odametey	Lands Commission
34	Gloria Adifu	Ministry Of Fisheries and Aquaculture Development (MOFAD)
35	Dr. Benedicta Ofosu Mensah	University Of Ghana- Legon
36	Dr. John Appah	Forestry Commission
37	Prof. Charles Ton tore	Council for Scientific and Industrial Research (CSIR)
38	Priscilla B.Gyamfi	Water Resources Commission (WRC)
39	Dr. Antwi-Boasiako. Amoah	Environmental Protection Agency
40	Tweneboah Edward Koduah	Ghana Statistical Service
41	Salami Toba Tawfik	Ghana Statistical Service
42	Kwabena Boadi	Environmental Protection Agency
43	Ameyaw Kyerewaa Jocelyn	Ghana Statistical Service
44	Tuffour Joel	Ghana Statistical Service
45	Richard Sasu	Ghana Statistical Service
46	Dr. Ben Bempah	Ghana Health Service
47	Emelyn Wright -Hanson	MESTI
48	Samuel Wireko Junior	MESTI
49	Francisca Duah	Ghana Statistical Service
50	Cephas Kreponi	Ministry of Lands and Natural Resource (MLNR)
51	Abigail Obenewaa Afrifa	Ghana Statistical Service
52	Christiana Sarpong	Ministry of Chieftaincy and Religious Affairs (MCRA)
53	Vera Baffoe	National Development Planning Commission
54	Isaac Dadson	Ghana Statistical Service
55	Prof Charles Tortoe	CSIR-FRI
56	R. Armah	
59	Mabel Appiah-Danso	Ghana Statistical Service
60	Dr Daniel K. Adams	Dept. of Parks and Gardens
61	Christiana Oppong	Min of Chieftaincy and Religious Affairs

NO.	NAME	INSTITUTION
1	Louisa Sawyer	Centre for Biodiversity Conservation Research
2	Asuo Afram	GSS
3	Ayesha Algade Amadu	CSIR-Water Research Institute
4	Ernest Lamptey	MBA
5	Richard Appoh	Ghana wildlife society
6	William Osei	Bank of Ghana
7	Dr. Owusu Kagya	GSS
8	Abigail O. Afrifa	GSS
9	Alberta Eshun	GSS
10	Hayford Agbakor	Fisheries
11	MaryJane Enchill	HATOF
12	Wynny Esi Addo	HATOF
13	Dr. Samuel Ayesu	RMSC
14	Paul Addah	Accra zoo
15	Dr. B. O. Botwe	UG Marine & Fish
16	James Aggrey	WRC
17	Daryl Bosu	A Rocha Ghana
18	Dr. Daniel Kingsford Adam	Dept of Parks and Gardens
19	Dr. Wisdom Atwoto	DIR RSIM MOH
20	Elliot Ansah	GSS
21	Blessing Mensah	NIB
22	Richard Sasu	GSS
23	Edmund Sottie	CSIR-ARI
24	Paul Seneadza	GSS
25	Rev. Joseph Quarcoo	LUSPA
26	Emelyne Wright-Hanson	MESTI
27	Kwesi Anderson	NBA/SBO
28	Sylvester Korateng	EPA
29	Anthony Adeea Mba	IUCN
30	Amanda Ama Amissah	CSIR-PGRRRI
31	Mabel Appiah-Danso	GSS
32	Richard Agyarkwa Forson	Aburi Botanical Gardens
33	Prince Martin Gyekye	CSIR-Soil Research Inst.
34	Benjamin Nukunu	Aburi Botanical Gardens
35	Dzifa Gwira Mensah	GSS
36	Tuffour Joel	GSS

<b>NO.</b>	<b>NAME</b>	<b>INSTITUTION</b>
37	Salami Toba Tawfik	GSS
38	Tweneboah Edward Koduah	GSS
39	Lambon Antoinette	GSS
40	Dr Kiruben Naicker	UNEP-WCMC
41	Dr Hashim Zaman	UNEP-WCMC
42	Kwame B. Fredua	EPA-HQ
43	Prof Alfred A Oteng-Yeboah	National Biodiversity Steering Committee (UG)
44	Ohene Ofori	MESTI
45	Abigail Adeyemi	Daily Guide
46	Amlann Joshua	BFT
47	Dankwah Edward	GNA
48	Dr. Eric Akobeng	NDPC
49	Samuel Wireho Junior	MESTI