Natural Capital Accounting Implementation Strategy

Implementing Ghana's National Plan for Natural Capital Accounting

March 2024

Natural Capital Accounting Implementation Strategy

Acronyms and Abbreviations

ACoP	Africa Natural Capital Accounting Community of Practice

CoP	Community of Practice
CSIR	Council for Scientific and Industrial Research
EPA	Environment Protection Agency
ESSAT	Environment Statistics Self-Assessment Tool
GDP	Gross Domestic Product
GHC	Ghana Cedi
GIS	Geographic Information System
GSS	Ghana Statistical Services
KO	Key Objectives
MDA	Ministries, Departments, Agencies
MMDA	Metropolitan, Municipal and District Assemblies
MESTI	Ministry of Environment, Science, Technology and Innovation
MoF	Ministry of Finance and Economic Planning
MOFA	Ministry of Food and Agriculture
NBSC	National Biodiversity Steering Committee
NBSAP	National Biodiversity Strategy and Action Plan
NCA	Natural Capital Accounting
NDCs	Nationally Determined Contributions
NDPC	National Development Planning Commission
NGO	Non-Governmental Organizations
NSAC	National Statistical Advisory Committee
SDG	Sustainable Development Goals
SEEA	System of Environmental-Economic Accounting
SNA	System of National Accounts
UNEP-WCMC	United Nations Environment Program- World Conservation Monitoring Centre

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1.Introduction

The National Plan for Natural Capital Accounting (NCA) was published in March 2024 by the Ghana Statistical Services in early 2024. The purpose of this strategy document is to guide and support the effective implementation of the National Plan for NCA. The aim of the Plan is to establish a robust natural capital accounting system in Ghana by 2034. Such a system would facilitate regular and informed evidence-based decision-making and integrated planning for sustainable development. The ten-year national plan and this implementation strategy will help Ghana towards achieving its strategic goal of measuring Green Gross Domestic Product (GDP) and advance the country towards sustainable and inclusive economic transformation.

To achieve this vision, four overarching goals and their corresponding objectives have been set:

- 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.

For each goal, the NCA strategy provides details on the essential building blocks needed for the implementation of the plan and strategy. It indicates the priority actions and corresponding activities that need to be undertaken within the ten-year timeframe of the national plan. A summary table of how the building blocks relate to the goals, corresponding objectives and priority actions is presented below.

Table 1: Summary of Goals, 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 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.

The implementation mechanisms are interconnected and work together to support implementation and the achievement of the goals (Figure. 1).
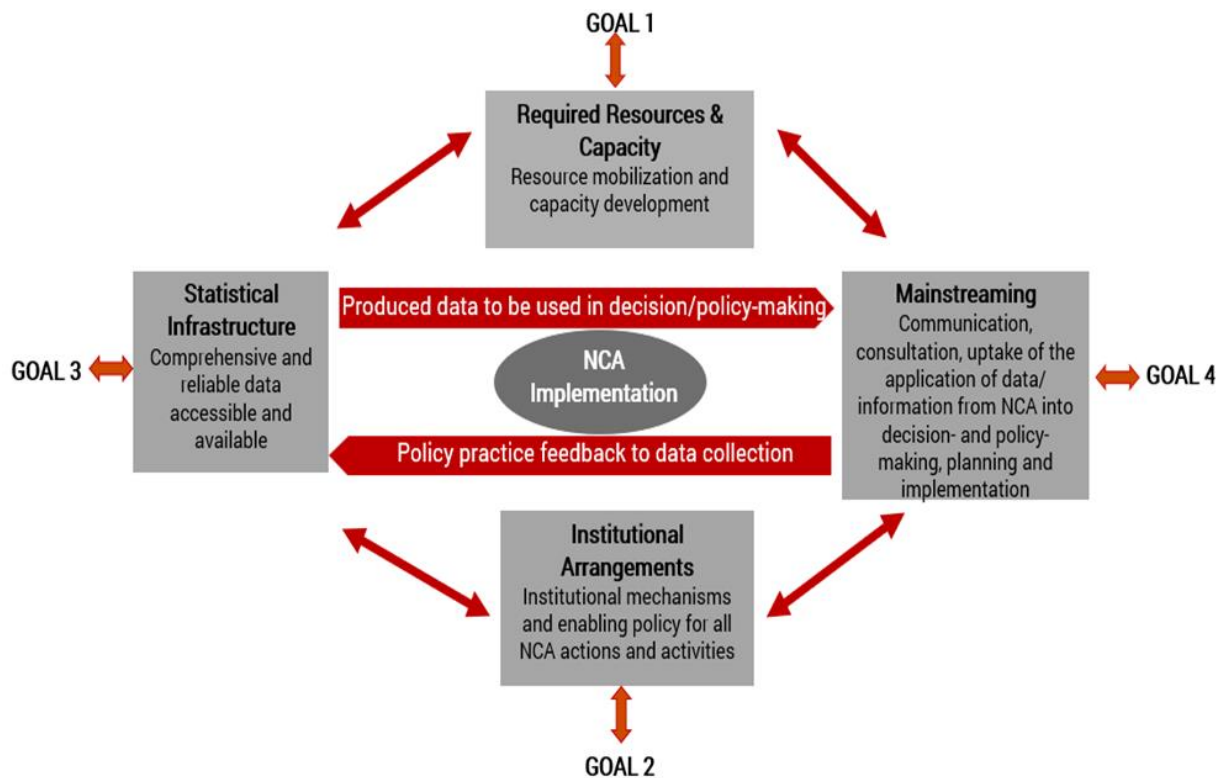
Figure 1. Building Blocks needed for the achievement of the Goals.

This strategy identifies the lead national institutions and stakeholders responsible for achieving the key objectives (section 2) and emphasizes the imperative need for high-level national coordination. The Ghana Statistical Services (GSS), the Environmental Protection Agency (EPA), the Ministry of Environment, Science, Technology and Innovation (MESTI) and the National Development Planning Commission (NDPC), are the primary agencies responsible for coordinating NCA in Ghana. Successful implementation would depend on the collaborative efforts of multiple organizations, institutions and departments, some of which will be identified and validated through follow-up stakeholder consultation.

Challenges, barriers and gaps are anticipated during the implementation of Natural Capital Accounting (NCA) in Ghana (Annex 1). Nevertheless, this implementation strategy has been compiled to address some of these challenges and bridge existing gaps. Annual updates are anticipated within the timeframe of the national plan to cater for evolving circumstances and emerging priorities.

2. Principles for NCA Implementation in Ghana

Drawing from the Ghana Statistical Service Act (2019) and the Africa Natural Capital Accounting Community of Practice (ACoP), five principles have been adopted for the implementation of the national plan.

1. Relevance and Credibility

Data is compiled from all available sources, updated at an appropriate frequency and assessed deploying objective and consistent science and methodologies. Rigorous quality assurance measures are to be used to ensure NCA data is credible and pertinent.

2. Transparency and Equal Access

Enable and encourage public access and use of natural capital information, with clear communication of methods, findings and their interpretation. This includes transparency on the limitations of the data sources, methods and/or coverage.

3. Collaborative

International and national organizations and stakeholders work together to enhance in-country capacity on producing and maintaining NCAs. National coordination among producers and users of NCAs and policymakers is essential.

4. Continuous Learning and Innovation

Natural capital accounts are continuously improved through new data, testing new approaches and evolving systems to better manage uncertainty, innovation and take advantage of emerging opportunities. Adopt a continual learning by doing approach.

5. Integrated and Embedded

NCA is systematically integrated into public and private sector policies, mainstreaming their use across sectors and communicating their findings, as needed. To ensure natural capital is sustainably managed and used, NCA is embedded in national government institutions and businesses with sufficient monitoring and evaluation systems that contribute to continuous learning and innovation.

3. Goals, Objectives and Implementation Activities

This section establishes a framework for implementing the national plan by providing an overview of each goal and outlining the priority actions necessary to achieve the corresponding objectives. It further unpacks these objectives, identifying lead institutions, timeframes, output indicators and recommended activities. Additionally, it details the implementation mechanisms that support each goal, its corresponding objectives and the activities required for implementation. Each goal, priority action, corresponding objectives and recommended activities are organized into a format, which articulates the relationships between goals, priority actions and their associated objectives and activities.

Goal 1 on Resources and Capacity

Overarching Priority Actions: Allocate a percentage of the total national budget that would be adequate for the implementation of NCA in each relevant MDA.

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

Table 2: Key Objectives and Related Activities for Goal 1

Key Objectives (KO)	Lead institutions	Timeframe	Output Indicator	Activities
1.1. Mobilize resources for the data landscape, institutional arrangements and budget for NCA	National Development Planning Commission (NDPC), Ministry of Finance (MoF) and relevant Ministries,	Annual Budgeting Cycle	No. of NCA-related activities included in budgeting plans in MDAs.	• Explore collaboration with non-conventional funding sources, including private and innovative blended funding options, for each relevant MDA. • Involve relevant national partners in the design and budget allocation of internationally funded projects during the planning and proposal stages. • Allocate support for NCA activities in the national budget cycle to align with the United Nations Sustainable Development Goals (SDGs), the Kunming- Montreal Global Biodiversity Framework, Nationally Determined Contributions (NDCs)and targets defined under the National Biodiversity Strategy and Action Plan (NBSAP), National Medium-term Strategy and Long-term national development plan of Ghana. • Engage the Ministry of Finance to ensure the timely release of funds, preventing implementation delays at all levels.

	Department and Agencies (MDAs)			
1.2. Improve knowledge, capacity and forecasting on Ghana's stock and flows of natural capital.	Ghana Statistical Service (GSS), Environmental Protection Agency (EPA), Ministry of Environment, Science, Technology and Innovation (MESTI), University of Ghana, Relevant Ministries, Department and Agencies (MDAs)	Annual workshop and trainings	No. of Officers participating in knowledge platforms and training events. No. of Officers involved in the compilation of accounts.	• Organize workshops and training sessions. • Set up new units or focal points for NCA at various levels within each relevant institution. For example, for fisheries accounts, set up focal points in the Ministry of Fisheries and Aquaculture Development, Fisheries Commission and fisheries departments in local governments responsible for local marine regions. • Recruit relevant personnel for NCA, being mindful of gender balance. • Create data-sharing agreements among diverse stakeholders to improve data flow. • Attend relevant international meetings. • Enhance the capabilities of the GSS through capacity development, training and recruitment for managing, coordinating and conducting monitoring and evaluation of NCA initiatives.
1.3. Build skills for NCA-related data standards, classifications and definitions among all public and private sector organizations.	Ghana Statistical Service (GSS), Environmental Protection Agency (EPA), University of Ghana	Annual budget cycle and assessment	Regular skills audit conducted (To include no. of NCA skills development activities and no. of beneficiaries). .	• Assess the required skills and capacity for compiling specific thematic accounts. • Support advanced degree programs for relevant subjects. • Create course materials and introduce NCA courses in Ghana's universities. • Evaluate the tools, frameworks and standards for gathering NCA-related data. • Develop internal training guidelines or in-house protocols.

Resource mobilization and capacity building are the foundation for NCA related work. As part of the implementation of the objectives, and priority actions and activities, NDPC in collaboration with MoF, will lead on resource mobilization for NCA by emphasizing the importance of budget planning for NCA activities. The GSS, EPA and MESTI would need to prioritize NCA activities in their respective annual budget planning and allocation. The GSS, through consultation with relevant partners recommends that at least GHS 500,000 is allocated for NCA activities in annual national budget cycles. This should include a 20% annual increment.

Capacity building can be implemented through training (academic, professional, technical). Besides in-country training, other activities to build capacity should be considered, such as using distance or online learning materials, participating in international meetings on natural capital, accounting and biodiversity and sponsoring higher degree studies for relevant subjects. During the ten-year implementation of the national plan, lead organizations would have to invest in developing course materials and establishing courses on NCA in the universities to increase local capacity. In the long-term, following regular audits of the knowledge, capacity and skills within relevant organizations, Ghana could invest in the development of internal training guidelines or in-house protocols. These guidelines or protocols should be regularly updated to reflect new procedures on NCA implementation. These implementation mechanisms will help establish a foundation for knowledge, capacity and skills related to NCA. This foundation can serve as a basis for further development, ensuring the long-term sustainability of NCA in Ghana.

Following stakeholder consultations, which prioritized the Blue Economy, Effective protected areas management, Sustainable agriculture and forestry, Water resources management, Sustainable use of natural resources and Climate resilience and livelihoods, to achieve key objectives 1 and 2, capacity building programmes will focus on the following:

- Principles, applications, frameworks, methodologies and tools of NCA
- The use and application of the System of Environmental-Economic Accounting (SEEA)framework
- Thematic accounts for the policy priority themes
- The compilation of ecosystem accounts including ecosystem extent, condition and ecosystem services
- Spatial planning, Geographic Information System (GIS) and modelling ecosystem services related to ecosystem extent, condition, supply and use
- The knowledge and use of environmental statistics in development planning processes at the national, sector and district levels

Goal 2 on Institutional Arrangements

Overarching Priority Action: Establish institutional arrangements and facilitate policy provisions for NCA-related actions and activities.

Table 3: Key Objectives and Related Activities for Goal 2

Key objectives (KO)	Lead institutions	Timeframe	Output Indicator	Activities

2.1. Build and validate an institutional framework that effectively manages an integrated system of environmental, ecosystem and economic accounts.	NDPC, MoF, EPA, GSS	Policy cycle, 3-6 months from inception of the national plan.	Institutional framework developed and validated. No. of organizations that have institutionalized NCA.	• Draft and approve a governance framework. • Set up a national committee that comprises representatives from a relevant cross-section of Ministries, Departments and Agencies, accounting for the need for equal gender balance.. • Based on the need of each thematic accounts, establish technical working groups by inviting focal points in relevant MDAs and plan regular meetings and working sessions. Send out a request for nominations of focal points within MDAs and MMDAs; approve and appoint focal points for the required technical working groups. Include NCA activities, targets and roles and responsibilities into job descriptions and performance agreements. • Conduct an assessment of the technical working groups, their composition and relevance before and after account compilation. • Encourage participation of data providers, users and other stakeholders including civil society organizations who represent the needs and interests of women, youth and local communities in relevant forums and technical working groups. This is to ensure inclusivity and co-development of the institutional framework for NCA
2.2. NCA-related policy actions are enhanced in policy cycles.	NDPC	Policy cycle Annually	No. of policy reports and plans with NCA-related activities.	• Organize stakeholder identification and consultation platforms, including organizations and agencies that can represent the interests and needs of women, youth and other vulnerable groups to address priority and emerging issues. • Conduct policy identification and design exercises across relevant organizations. • Empower women, youth, other underrepresented groups to participate in NCA-related activities, including tasks such as data collection, analysis, budgeting, decision- and policy-making, to ensure their needs and perspectives are accounted for. • Perform user-needs assessments and monitoring and evaluation of the policy landscape at key stages of the policy cycle. • Include policy provisions for NCA-related actions and activities into overarching policies, plans and strategies. • Monitor and report on the implementation of the implementation strategy. • Update the implementation strategy
2.3. A community of practice (CoP) for advancing NCA in Ghana is well established.	EPA, GSS	Inception of the implementation of the National Plan (2024)	CoP established. Equal gender balance in the CoP. Percentage of stakeholder representativity	• Collaborate with established forums, including the National Biodiversity Steering Committee (NBSC), the Environmental Protection Agency forum and the National Statistical Advisory Committee (NSAC), among others. • Appoint focal points or representatives from various levels and sectors to participate in the CoP and attend the annual forum. • Set up liaison desks with appointed focal points to manage and service them. • Schedule regular planning meetings for convening the annual National Natural Capital Forum.

				participating in the CoP.	• Develop a stakeholder engagement strategy with specific targets and indicators that ensure equal gender and stakeholder diversity in the CoP. • Convene the annual National Natural Capital Forum, which serves as the annual reporting platform of the CoP. • Compile, approve and communicate a report every quarter, biannually or annually, whichever is appropriate on the gender and stakeholder diversity in the CoP.

Institutional arrangements to support the implementation of the national plan for NCA are essential to advance collaboration, coordination, stakeholder engagement and enabling policy provisions for NCA-related activities. Several levels of structure can greatly facilitate implementing the priority action and corresponding activities.

High-level National Coordination

High-level coordination among stakeholders requires a core group comprising senior management representation from the following ministries and agencies: NDPC, MoF, GSS, MESTI, EPA, relevant MDAs, researchers and experts. As the lead planning and coordinating institution, the NDPC can facilitate national coordination. MESTI initiated the National Biodiversity Steering Committee (NBSC) in 2020 with expert representatives, and this could act as a national platform for natural capital-related issues as well. The EPA has set up a forum to collaborate on data sharing and standardization. There is potential for the EPA forum to be expanded into a National Natural Capital Forum. This would encourage ownership, co-development, participation, further uptake and mainstreaming of NCA across policy objectives.

Technical Working Groups

Technical working groups are usually established to compile thematic accounts. Existing structures will be used and sustained according to need for the duration of this strategy. The World Bank's Global Programme on Sustainability in Ghana has contributed to the formation and reorganization of several technical working groups focussed on four types of thematic accounts that are useful for the application of the SEEA framework: Land and Ecosystem Accounts; Ecosystem Services; Wealth accounts and adjusted macroeconomic indicators. There is also a sub-working group for updating the NBSAP which will be addressing synergies and alignment between the SEEA and the Kunming-Montreal Global Biodiversity Framework. These groups have designated national coordinators and members from various MDAs that are involved in the management, research and governance of the environment, such as the Ministry of Food and Agriculture (MoFA), the Forestry Commission, Council for Scientific and Industrial Research (CSIR), Ministry of Lands and Natural Resources, Fisheries Commission, the Water Resources Commission, Land Use and Spatial Planning Authority, among others.

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These existing groups will be retained, interconnected and expanded and should contain a diversity of stakeholders, and appropriate gender considerations. Based on need and type of priority accounts being compiled, technical working groups can further include relevant partners, such as academic researchers, Non-Governmental Organizations (NGOs) and representatives from Metropolitan, Municipal and District Assemblies (MMDAs). NBSC will collaborate and exchange communication with the core groups to regularly provide inputs and advice. The existing National Statistical Advisory Committee (NSAC), which is comprised of 25 MDAs with 12 sub-groups will also work with the NCA technical working groups.

Focal Points in MDAs and MMDAs

Specialized working teams within relevant MDAs will be established with areas of expertise within the country ranging from environmental economics, ecological sciences and spatial analysis. Creating liaison desks and focal points at various institutions and equipping them with relevant knowledge will guide the progress and direction of NCA implementation in the long-term. The GSS will continue to serve as the focal contact point and the main statistical service centre. Other relevant MDAs also need to develop NCA knowledge within their teams.

National Forum for NCA

The annual national forum for NCA, which held its inaugural session in June 2023, will play an overarching role in the technical engagement of working groups, high-level decision-makers and the public, among others. This national NCA Forum would need to be convened annually as it has the potential to evolve into what could be known as a national community of practice. A broad, multi-agency, multi-level community of practice will provide motivation and support for resource mobilization for NCA. It would also provide a channel for disseminating outputs and the results of accounts, helping to ensure their uptake and integration in planning and policy-making for all sectors, agencies, ministries and organizations.

Goal 3 on Statistical Infrastructure

Overarching Priority Action: Create mechanisms for multiple sources of data that can be validated, accessible and available for the compilation of natural capital accounts.

Table 4: Key Objectives and Related Activities for Goal 3

Key objectives (KO)	Lead institutions	Timeframe	Output Indicator	Activities
3.1. Compile and regularly publish natural capital accounts and environmental-economic statistics at national, sub-national and local scales across Ghana.	GSS and relevant MDAs	Account compilation and publication process cycle	No. of accounts published. Indicate scale (national, regional or local), new (pilots) or updates (follow-up accounts).	• Conduct stakeholder mapping and a user needs assessment to identify stakeholders, policy entry points and priority themes and accounts. • Set up the required technical working groups (2.1 above) • Convene working sessions for the compilation of accounts. • Analyze existing data, pinpoint gaps and use proxy variables and modeling. • Disaggregate NCA information/data so that it is gender sensitive, inclusive and accurate. • Provide essential coordination and financial support to national institutions for data collection. • Establish dedicated units/focal points within government MDAs and MMDAs for the collection, management and monitoring of data. • Create data-sharing agreements and legal arrangements between data producers and compilers. • Develop a robust IT infrastructure for data and output exchange among key users and stakeholders. • Utilize available online tools, including modelling platforms and national and global datasets, as well as global and national ecosystem classification frameworks, for the compilation of accounts. • Establish a national database for environmental-economic statistics. • Enhance and update the National Compendium of Environment Statistics in Ghana to consolidate and standardize statistical information on ecosystems from multiple sources. • Establish user-friendly and accessible pathways for all stakeholders to access crucial findings.
3.2. Use, improve and document the standards, methodologies and classifications for compiling natural capital accounts.	GSS	Ongoing	No. of documents published on standards developed and methodologies used (including reviews and updates).	• Create or acquire training guidelines and in-house protocols. • Design templates tailored to meet sector-specific demands for NCA. • Identify gaps in data collection, processing, storage and retrieval. • Develop a comprehensive National Compilation Guide detailing sources and methodologies used for data compilation. • Conduct extensive pilots to assess the applicability of developed methodologies.

3.3. Documentation, methodologies and all that is learned contribute to NCA knowledge.	GSS	Ongoing	No. of publications recorded and available in the internal registry/library. Reports on the information management systems accessed and used.	• Document and disseminate effective methodologies for wider adoption. • Create an online repository for storing and sharing documentation and methodologies. • Ensure easy access for NCA staff to retrieve relevant information. • Regularly update the repository with new materials and resources.

Statistical infrastructure is one of the key foundational elements of NCA implementation. It is important to share data, build interoperable systems and develop and strengthen national databases of environmental-economic statistics to include data on the supply and use of biological assets and ecosystems. This can be linked to databases containing layers of national, sub-national, sectoral and local data streams where relevant stakeholders can input their data for wider dissemination. It will also help foster collaboration between all spheres of government, research and industry.

The production of accounts will encompass various stages of data collection, including the scoping process, compiling preliminary data and evaluating gaps through proxy variables and modelling. Annex III includes available data resources and tools for this stage. In addition to account development timelines, data-sharing links and legal arrangements will need to be established between producers and compilers. A National Compilation Guide with details on the sources and methodologies used for data compilation will be created to summarise and effectively communicate the steps above.

Another key aspect of account production is building an effective IT infrastructure for data and output exchange between key users and stakeholders. Once initial outputs are determined, relevant stakeholders will need to have easy access to the key findings to facilitate the development and implementation process of the accounts.

These priority themes and natural capital accounts were identified by the user-needs assessment (GSS *et al*. 2022) and validated by stakeholder consultation conducted in 2023:

Table 5: High and medium priority themes and identified accounts

Priority Themes	Identified Accounts
High Priority	
Blue Economy	Fishery accounts, marine and coastal ecosystem service accounts
Effective Protected Areas	Ecosystem extent accounts, eco-tourism accounts
Sustainable Agriculture and Forestry	Land and soil accounts, agriculture and forestry accounts, forest provisioning ecosystem service accounts
Medium Priority	
Water Resources Management	Water regulation service accounts
Sustainable use of natural resources	Energy flow accounts
Climate resilience and livelihoods	Carbon and air emissions accounts

The themes and accounts will be prioritized over the ten-year implementation period of the national plan. Prior to compiling specific accounts, user-needs assessments, stakeholder mapping and consultations are conducted to validate priority themes and accounts. For inception of implementation of the national plan, the Blue Economy and Fisheries Accounts were highlighted as a high priority. Demonstration Fisheries Accounts (Asset and Supply Accounts) are currently being compiled with funding from the UK Darwin Initiative on Strengthening Capacity in Natural Capital Accounting for Sustainable Development in Ghana. All accounts are compiled in accordance with the SEEA-Central Framework (SEEA-CF). For the demonstration Fisheries accounts the SEEA- Agriculture, Forestry and Fisheries (SEEA-AFF) was used, which offered a sectoral application of the SEEA-CF. The intention is to ensure the regular production and publication of accounts. This would therefore involve compiling pilot accounts at various scales for some themes and for other themes it may involve updating and replicating existing accounts for different historical periods. The prioritization of these accounts and their timeframes over the 10-year implementation period will be confirmed through annual updates of this strategy. The assessments and the monitoring and evaluation throughout the NCA production cycle will support these annual updates.

Research, development and experimentation are catalysts for more account production within the NCA production cycle. Conducting several pilots can support the research agenda, while evidence for the Problem Framing stage of the policy cycle can indicate which issues are most salient to Ghana's economy and conservation goals. This stage will be supported by assistance from the CoP on NCA and can include further deliberation on issues related to:

- Accounting classifications.
- Country-specific classification of ecosystem assets.
- Units for ecosystem accounting.
- Environmental indicators and aggregates.
- Upscaling and downscaling.
- Valuation.
- Validation of data and quality criteria to formally track progress.

Research and development will help guide decisions for the selection of ecosystem assets and services that are important for Ghana's investment in ecological infrastructure, land use change programs for carbon sequestration and setting biodiversity priorities for conservation, among others.

Goal 4 on Mainstreaming NCA

Overarching Priority Action: 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.

Table 6: Key Objectives and Related Activities for Goal 3

Key objectives (KO)	Lead institutions	Timeframe	Output Indicator	Activities

4.1. Increased use of natural capital accounts-based indicators and information for high level and sectoral policies and planning.	NDPC, EPA	Ongoing	No. of Reports/ policies across sectors that integrate information on biodiversity and natural capital.	• Conduct stakeholder mapping and a user needs assessment to identify stakeholders, policy entry points and priority themes and accounts. • Collect institutional data and information to support policy design. • Conduct communication campaigns, engage in national stakeholder platforms and utilize other forums for the publication, uptake and application of the findings from accounts. • Assess the policy and planning landscape to monitor the integration of information from NCA into policies, plans and strategies.
4.2. Public discourse stimulated with information from NCA.	EPA, NDPC	Annually Ongoing	Communication and advocacy plan for NCA developed. No. of communication channels for NCA information established and updated.	• Compile and publish a communication and advocacy plan. • Appoint a communication ambassador to implement the communication and advocacy plan. • Convene stakeholder consultation and update the communication and advocacy plan. • Use the Environment Statistics Self-Assessment Tool (ESSAT) for country-wide consultation and assessment of the state of environmental statistics. • Compile reports for monitoring, evaluation and reporting purposes and public disclosure.
4.3. High-risk biodiversity areas and demographic groups are prioritized in decision-making and development planning.	NDPC, EPA, MESTI	Planning cycles Annually Ongoing	No. of stakeholder engagement and consultation platforms on NCA and high-risk biodiversity areas held. No. of participants recorded disaggregated	• Use ESSAT to assist in monitoring the implementation of the SDGs, reporting on other MEAs and track progress on the State of Environment (SoE) in Ghana. • Conduct spatial biodiversity assessments at national, regional and local levels. • Update the NBSAP to align with national priorities. • Convene stakeholder consultation in priority biodiversity areas based on information derived from NCAs and other spatial planning tools and reports. • Identify entry points and integrate NCA into targeted conservation and development plans that address the unique requirements of prioritized biodiversity areas and demographic groups. • Identify entry points and integrate NCA into adaptive management strategies to mitigate risks and enhance resilience in high-risk biodiversity areas. • Facilitate partnerships and collaborations between government agencies, non-governmental organizations and local communities for collective implementation of decisions taken.

			by gender and ethnicity.	

Mainstreaming is an important mechanism throughout the NCA production chain from prioritization and drafting of accounts to publication of accounts. Mainstreaming is important for the uptake of information from accounts into policies, plans, strategies and systems. Key areas for mainstreaming, however, should be prioritized, which include stakeholder engagement, consultation, communication and advocacy.

Stakeholder engagement and consultation

A user need assessment, which includes stakeholder mapping of the producers, data providers and account users, should be conducted before stakeholder engagement and consultation on potential priority account compilation. This is important to ensure co-creation along the NCA production chain and is essential for the communication, interpretation and uptake of accounts. At the stage of initiation of specific account compilation and at the stage where accounts are published, stakeholder engagement and consultation can occur in different forms depending on the target audience. This can include the participation of relevant decision-makers, including governments, NGOs, civil society organizations representing the needs and interests of underrepresented groups, financial institutions and development banks, sector-specific participation, technocrats, practitioners, scientists, academics and researchers.

Ensuring the meaningful participation of typically underrepresented groups such as women, youth, Indigenous Peoples, and local communities in the implementation of this strategy on NCA, is crucial for many reasons. Firstly, these groups often possess unique knowledge, perspectives, and priorities regarding natural resources and ecosystems, which are invaluable for effective decision-making and sustainable management. By involving them in the process, the strategy becomes more comprehensive, responsive and inclusive, reflecting a diverse range of interests and needs. Additionally, promoting their participation fosters social equity, empowerment and ownership of the accounting process, leading to more equitable distribution of benefits and opportunities arising from natural capital management. Furthermore, engaging these groups enhances the legitimacy and credibility of the strategy, reinforcing its acceptance and support among the broader population. Ultimately, by prioritizing inclusivity and diversity in the implementation process, Ghana can achieve more robust, equitable and sustainable outcomes in natural capital accounting, benefiting both present and future generations.

Communication and Advocacy

Communication and advocacy are necessary to mainstream the information from NCA and promote its integration into policies, plans, strategies and systems. It is also important for statistical offices that produce the accounts to maintain their independence when releasing official statistics and NCA discussion documents. This is to ensure that statistical offices are not biased to any sector. For this reason, an NCA ambassador should be in place to take on the communication responsibilities at the completion and publication of accounts. Communication and advocacy contribute to increased uptake of information from accounts and improved awareness of policies. It can:

- Provide platforms for engagement that encourage internal discussion among implementing agencies to secure buy-in and build capacity.
- Create awareness of NCA among stakeholders using multimedia platforms.
- Engage stakeholder interest in NCA to enhance its uptake in decision-making processes.
- Publicize the results of NCA using powerful media representation (traditional and social).
- Initiate public discussions on key NCA outputs targeted at policy-makers to inform policies and development plans.
- Engineer thought leadership articles/ stories about NCA for national and international stakeholders.

Communication and advocacy can also take place through the media (social, television, newspapers etc.), storytelling and scientific publications. The practice of creating a national NCA forum has become widespread and can be convened annually by bringing together all interested stakeholders and collaborators. This would contribute to the CoP, which is reflected in KO 2.2.

4. Monitoring and Evaluation

The GSS will undertake monitoring and evaluation of this strategy. The strategy will be monitored against the Monitoring and Evaluation Framework of the national plan for NCA (Annex). The national plan for NCA is a ten-year plan, which requires monitoring and evaluation in phases supported by this implementation strategy. To assist with this phased approach, the strategy will be updated annually by conducting surveys, user-needs assessments and stakeholder mapping on the high and medium-priority themes included in Table 3. This can be conducted after the 1st year of implementation to establish a baseline, followed by periodic assessments. Such a baseline would be supported by the feasibility assessment (EPA 2016) and the user-needs assessment (GSS *et al.* 2022) A more extensive mid-term review is advisable after five years, with a final comprehensive review scheduled after the 10-year implementation period. These monitoring mechanisms are anticipated to take place at three levels:

- Internally within GSS and within the collaborating lead organizations
- Working groups that are existing or established for NCA
- Wider stakeholders

The implementation strategy will be updated by asking the same group of stakeholders the following questions:

- What is the state of natural capital knowledge within your organization/ structure?
- What are the resources (Financial and Human) available for NCA implementation?
- Are there any institutional arrangements for NCA?
- What is the data environment to support NCA?
- How has the information from accounts been used in decision- and policy-making?
- Can you highlight the success stories, challenges and lessons learned?

Scoping assessments, user-needs and stakeholder mapping are recommended to take place before the compilation of accounts. These assessments can also be conducted or updated upon publication and release of accounts.

Limitations to the process

It is accepted that this would be a pilot process, initially conducted with limited resources. As the implementation strategy is updated and refined with findings from the monitoring mechanisms used, a wider array of stakeholders and organizations will be brought into the NCA community of practice.

5. Conclusion

The NCA strategy serves as an extension to Ghana's national plan for NCA. It provides additional information on the Lead institutions, time frames, output indicators and activities necessary to achieve the goals and objectives that have been proposed in the plan. The implementation of this rolling strategy will involve multiple actors and agencies in Ghana, but it will be coordinated by the GSS, EPA, MESTI and NDPC. These agencies will work collaboratively to review and track progress regularly. The guiding principles established for the execution of the national plan over the 10-year time frame will ensure the efficient and effective implementation of this strategy.

Future iterations and updated versions of the strategy should take into consideration the financial, material and human resources available at the time. The document will also need to reflect on future challenges, emerging barriers and opportunities. Ghana has adopted a learning-by-doing approach. Hence, the success of this strategy depends on ongoing evaluation and adaptation based on lessons learned during the implementation process.

6. References

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7. Annexes

Annex I: Challenges, Barriers and Gaps

Emerging from the findings of the feasibility study in 2016 (EPA 2016) and the user-needs assessment conducted in 2022 (GSS *et al*. 2022), the challenges identified include limited resources, capacity, data, data disaggregated by gender and insufficient institutional coordination.

Limited access to financial resources is a significant constraint that hinders the effective implementation of NCA in Ghana. Funding constraints include delays in the release of funds and dwindling revenue sources both external and internal, However, budget allocation towards capacity development, staff retention, infrastructure development, local level implementation involving investments in monitoring and compliance functions among other resource needs will further the implementation of NCA in Ghana.

Capacity constraints include the low levels of technical expertise and know-how on NCA, especially regarding the compilation of priority accounts. There is a risk that individuals might be assigned the responsibility even if they lack the necessary skills to manage the accounts. Another significant impediment is the shortage of staff and the inadequate commitment.

Data limitations identified include:

- Unreliable data sources.
- Difficulties in collecting, processing, and storing data in the appropriate formats.
- Unwillingness of institutions to disclose data required for NCA.
- Insufficient data/information on natural resources required for NCA.
- Insufficient logistical support for technical personnel in data gathering.
- Inaccessibility of data and poor data management.
  Lack of gender-disaggregated data on the unique dependencies that men and women have on natural capital and ecosystem services.

The inclusion of gender disaggregated data in NCA is crucial in developing more inclusive, equitable and responsive policies, plans and strategies towards the sustainable management of nature at all levels. Thus, the implementation of the National Plan should place a central focus on gender considerations, ensuring the availability of gender-disaggregated data, analysis and inclusive participation in decision-making and capacity development.

Institutional coordination has challenges related to:

- Fragmented policies due to the cross-cutting nature of environmental issues.
- Lack of willingness and commitment from stakeholders to undertake NCA.
- Conflicting institutional priorities.
- Undefined governance structures, roles and responsibilities.

The national plan for NCA recognizes that adequate and effective institutional arrangements are essential components of advancing NCA in Ghana. An institutional structure has been recommended:
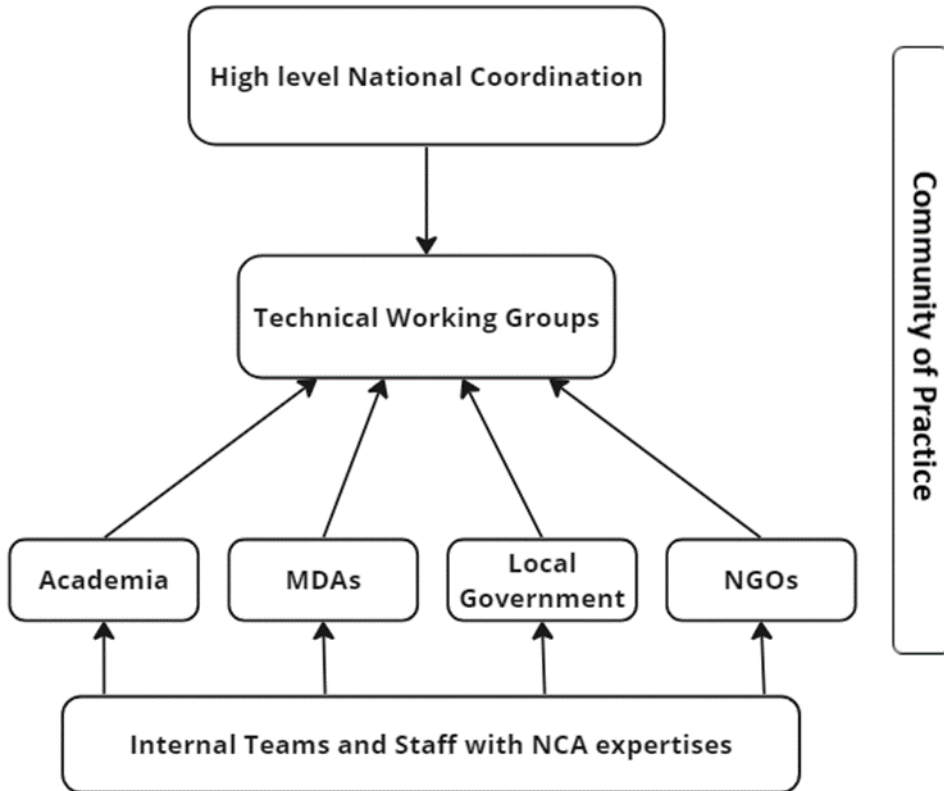
Proposed institutional structure (Adapted from the National Plan for NCA)

Annex II: Monitoring and Evaluation

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 on 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 publish regularly 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 periodically, 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.	

Annex III: Available Data Initiatives and Tools for Goal 3

Various data initiatives and tools on natural capital from a global perspective can be deployed for NCA implementation in Ghana to strengthen national statistical systems. This includes tools and modelling platforms for accounts production such as ARIES for SEEA Explorer, Data4Nature, InVEST, Co$ting Nature, WaterWorld, I-Tree, TESSA, and the Land Utilization Capability Indicator (LUCI) tool. Other tools such as the Mapping Environmentally Sensitive Assets (MESA) tool map out the environmental sensitivity.

National datasets and global datasets including spatial mapping tools such as UN Biodiversity Lab, ESRI Living Atlas, World Database on Protected Areas (WDPA), and Google Earth can be used for remote sensing and production of spatial maps of land cover and biomes across Ghana. Databases such as the Ecosystem Services Valuation Database (ESVD) can be utilized to assist with the monetary valuation of ecosystem services and the compilation of monetary ecosystem services and asset accounts. Tools such as ENCORE that analyze the impacts and dependencies on nature and biodiversity can be further operationalized for advancing NCA in Ghana.

For the classification of ecosystems and ecosystem services, global frameworks exist including the Common International Classification of Ecosystem Services (CICES), International Union for Conservation of Nature Global Ecosystem Typology (IUCN GET) 2.0, and SEEA Ecosystem Type reference classification that can be used in the absence of national classification systems. In 1995, a national land cover land use classification system for Ghana was developed by the Remote Sensing Applications Unit. It is recommended that the existing national ecosystem classification system be used wherever possible, as such schemes can provide comprehensive descriptions and classes incorporating specific local ecological knowledge. A national classification system can be developed by using the IUCN GET by scaling it down to locally derived and locally relevant ecosystem types.

The CICES is a hierarchical framework designed to help measure, account for and assess final ecosystem services. It provides a common naming and classification system of services to support ecosystem accounting frameworks. CICES can be cross-referenced with the various ecosystem service classification systems, such as the Millennium Ecosystem Assessment (MA) 2005, the TEEB and the SEEA EA.

The IUCN Global Ecosystem Typology 2.0 is a typological framework that applies an ecosystem process-based approach to ecosystem classification for all ecosystems. It comprises six hierarchical levels that can be applied at global to local scales. The upper three levels classify ecosystems based on their functional characteristics. The lower three levels distinguish ecosystems from one another based on compositional resemblance. This typology can help identify critical ecosystems and those at the greatest risk of collapse.

The SEEA Ecosystem Type reference classification ensures that the compilation of ecosystem accounts in various locations can be compared against a commonly agreed set of ecosystem types. The SEEA Ecosystem Type reference classification reflects the IUCN GET which was developed to support implementation of the IUCN Red List of Ecosystems and is equivalent to IUCN GET Levels 1-3.