System of Environmental Economic Accounting

NATIONAL PLAN FOR ADVANCING ENVIRONMENTAL-ECONOMIC ACCOUTING (NP-AEEA) IN VIETNAM

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DRAFT

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United Nations UNEP Convention on Biological Diversity NORWEGIAN MINISTRY OF FOREIGN AFFAIRS

CONTENTS

1 EXECUTIVE SUMMARY

The purpose of this document is to link current Vietnamese environmental-economic accounting initiatives and policy requirements with UN System of Environmental-Economic Accounting (SEEA) and other international statistical frameworks. It provides the foundations for initiating statistical development towards improving decisions related to sustainable development and green economy. It is based on a Vietnam - Country Assessment Report which has identified the policy priorities, stakeholders and capacity in Vietnam to engage in such development. It has done so by reviewing the most recent documents in collaboration with General Statistics Office, and other key stakeholders. It positions the work within internationally-accepted best practices for statistical development.

This document will serve as a basis for engaging stakeholders and developing focused proposals for support. It does so by:

a) establishing the rationale for an integrated statistical system for sustainable development information,
b) summarizing the priorities and opportunities in Vietnam for further improvement of the National Statistical System (NSS) with a focus on SEEA,
c) using an Investment Logic Framework (ILF) to identify the enabling factors (preconditions for engaging in activities), activities, outputs, impacts and long-term outcomes of engaging in these activities, and by
d) outlining the foundational activities needed to implement environmental-economic accounting ready for use in fully developed and costed funding proposals.

The lack of coherence among environmental measurement initiatives imposes challenges in answering fundamental questions about natural resources, including ecosystems, and their contribution to human well-being in Vietnam. The degree of dependence of Vietnam's population on ecosystems for food, materials and employment is not well known. What is the contribution of ecosystems and their services to the economy? How can natural resources and ecosystems be best managed to ensure continued services such as energy, food supply, water supply, flood control and carbon storage? What are the trade-offs between resource exploitation and land allocation with long-term sustainability and equity?

Vietnam has a unique opportunity to focus national and international efforts on addressing its sustainable development, climate change, biodiversity and green economy goals.

There is increasing international interest in establishing integrated statistical systems for this purpose. The SEEA has been established as international statistical standard and is recommended as the measurement framework for a variety of related international policy activities The SEEA Experimental Ecosystem Accounting (SEEA-EEA) expands the scope of the SEEA Central Framework (SEEA-CF) to link ecosystems to economic and other human activities.

This document is intended to focus the efforts of the National Statistical Office (NSO), the NSS and other stakeholders, including international agencies, to develop a cost-effective, ongoing and effective statistical systems and related institutional mechanisms to inform Vietnam's sustainable development policy objectives.

The National Strategy for Environmental Protection until 2020 and Vision Towards 2030[1] was approved in 2012. It contains 60 indicators of which 30 are on the environment. The Strategy calls for speeding up "the application of economic mechanisms and tools in conformity with market economic regimes in order to realize macro manipulations of development activities toward environmental friendliness, especially through fiscal policy (tax, fee, security, payment for environment services) and regulatory policy with and environmental economic accounts." These are consistent with international policy drivers such as the Sustainable Development Goals (SDGs) and Aichi Target 2.

Monitoring these priorities can be addressed by developing SEEA accounts and thematic indicators. To support this, the National Plan for Advancing Environmental-Economic Accounting (NP-AEEA) proposes to develop a cost-effective, ongoing and effective statistical system and related institutional mechanisms. The key actions recommended by the NP-AEEA for Vietnam are: (a) developing a comprehensive environmental-economic accounting information system; (b) assessing and integrating existing spatial data required to support expanded SEEA-CF accounts and to pilot ecosystem accounts; (c) conducting training and capacity building in environmental-economic accounting including ecosystem accounting; (d) enhancing coordination with national initiatives as well as international and donor agencies; and (e) immediately beginning work on priority accounts including: Ecosystem Extent (Land Cover) Accounts, Water Accounts, Biodiversity Accounts, Carbon Stock Accounts and Ecosystem Services Supply and Use Accounts, especially with respect to carbon sequestration, water provision and regulation, fish provision and erosion control; putting the piloted SEEA-CF accounts (forestry, land, water, waste/pollution, fisheries, and minerals and energy) into ongoing production, and developing macro-economic aggregates for Green GDP and Ecological Footprint indicators.

To accomplish this will require establishing a high-level Steering Committee, Technical Committee and Working Groups with an appropriate governance structure, engaging stakeholders, implementing quality standards, establishing inter-departmental data sharing and developing new sources of funding.

It is proposed that, rather than implementing a complex statistical system at the outset, this be done in stages. This document presents the first stage – a specific set of activities related to the implementation of the SEEA. High level activities and impacts are listed below.

[1] The National Strategy on Environment Protection to 2020, with Visions to 2030 was approved by the Prime Minister in Decision 1216/QD-TTg on 5 September 2012. See http://thuvienphapluat.vn/archive/Decision-No-1216-QD-TTg-approving-the-strategy-for-protecting-the-national-vb151908.aspxand http://theredddesk.org/sites/default/files/national_env_strategy_1.pdf

Activities	Impacts
Building priority accounts based on policy needs	Providing Ministers and their agencies with empirical evidence of changes resulting from sustainable development policies Improved knowledge on natural resources, including ecosystems, and well-being Better policies, decisions on trade-offs between development and conservation Foundations to build integrated indicators on sustainable development
Capacity building Human resources Infrastructure	The ongoing capability to integrate environmental-economic information into government decision making Training for agency and academic staff to support the ongoing implementation of environmental-economic accounts A civil service and civil society that is informed about environment and development The ongoing cost effective production of environmental-economic accounts that meet the needs of policy in a timely manner Improved statistical collaboration between sectors and agencies including sharing available data through a focal point.
Development of key aggregates	Provide Ministers and their agencies with empirical evidence linking government policies to sustainable development goals

2 INTRODUCTION

There is little doubt that at global, national and local scales, humanity is pushing against a web of environmental boundaries. This message has been growing clearer and clearer through multiple scientific, social and economic studies (MA 2005, Rockström, Steffen et al. 2009, TEEB 2010, Cardinale, Duffy et al. 2012). At the broadest level, the risks associated with breaching environmental boundaries are at the centre of concerns about sustainable development and, given the inter-connected nature of our economies and societies, environmental concerns are relevant to all people in all countries. It is unsurprising that the demands from governments, international agencies and the general public for a response have been growing stronger and stronger. This message was emphasized at the Rio+20 conference and culminated in the Post-2015 Development Agenda. The international community has further recognized that integrated statistics are essential to making informed decisions:

> *"We recognize the need for broader measures of progress to complement GDP in order to better inform policy decisions, and in this regard, we request the UN Statistical Commission in consultation with relevant UN System entities and other relevant organizations to launch a programme of work in this area building on existing initiatives."* (Paragraph 38, The Future We Want: Outcome document adopted at Rio+20[2])

This project is part of the international community's commitment to develop these broader measures of progress and to integrate them into national statistical systems and decision making.

One barrier in working towards the appropriate responses is the lack of well accepted, broadly based and globally integrated information on the nature of humanity's connection to the environment – our dependence on its services and our impact on its condition and future capacity to generate these services and hence to sustain future human wellbeing. We have much integrated information concerning national and global economic activity where, via the standard economic accounts and Gross domestic Product (GDP), we have a strong understanding of our combined economic performance and history. On the social side, while the information is more diverse, we have relatively standardized approaches to assessing changes in population, education and health, among many other variables and a reasonably common understanding of the links between economic and social activity.

However, on the environmental dimension our information set is far more disparate and a common understanding of the relevant issues is undeveloped. While we have much scientifically based data it is often discipline specific; based on observations in specific areas; not scalable to national or global level; measured using different methods and definitions; and most often, not presented in reference to economic or human activity. Given these characteristics it is not surprising that public and academic discourse on environmental matters has been fractured and lacking momentum. The development of integrated environmental information is clearly needed.

[2] See http://www.un.org/en/sustainablefuture/.

Both the SEEA-CF and SEEA-EEA use the accounting concepts, structures, rules and principles of the System of National Accounts. The SEEA-CF starts from the perspective of the economy and its economic units and incorporates relevant environmental information concerning natural inputs, residual flows and associated environmental assets. In contrast, SEEA-EEA starts from the perspective of ecosystems and links ecosystems to economic and other human activity. Together, the approaches provide the potential to describe in a complete manner the relationship between the environment, and economic and other human activity.

SEEA-EEA is a synthesis of the current knowledge in this area and can provide a starting point for the development of ecosystem accounting at national or sub-national levels. While the SEEA-EEA does not give precise instructions on how to compile ecosystem accounts, it represents a strong and clear convergence across the disciplines of ecology, economics and statistics on many core aspects related to the measurement of ecosystems and thus there is a strong base on which further research and development can build.

This report is set out in three parts.

Part 1 (Section 3) provides a global and country rationale for undertaking environmental-economic accounting is provided with an outline of the building blocks and methodologies needed for its implementation. This provides the context and rationale for the NP-AEEA, the high level needs of Vietnam based on the assessment report and finally a summary of the key outcomes that could be achieved for Vietnam by implementing the NP-AEEA.

Part 2 (Sections 4 and 5) presents a brief overview of the building blocks and methods needed to implement the NP-AEEA. The aim of these sections is to provide generic guidance on a standardized approach based on current frameworks, system, methods and guidance and training material.

Part 3 (Sections 6, 7 and 8) outlines the details of a national program of work following an investment logic framework (ILF). The focus on the ILF is to identify what work is required in order to achieve the objectives and translate them into outcomes for the country. These sections are specifically tailored to the needs of Vietnam using the building blocks and methods outlined in **Part 2**. The use of an ILF provides detail on the work program participation requirements (institutional needs), enabling factors (resources, systems, processes), the work program (a series of actions described as work phases over time), outputs (a clear set of deliverables), impacts (what will change substantively) and finally the outcomes which are linked to the objectives of the country.

The advantage of providing the three-part approach to developing an NP-AEEA is to identify commonalities across countries to target international research and enable better coordination and collaboration in sharing best practices between countries. The activities and priorities for each country's NP-AEEA identified in **Part 3** will be used in the future to focus resources, research and training efforts.

3 ENVIRONMENTAL-ECONOMIC ACCOUNTING RATIONALE

There are a number of global and national drivers that provide the rationale for the development of an environmental-economic accounts program of work.

3.1 Global perspective

Seizing the opportunities and facing the new challenges requires greater efficiency and integration of the functions of national statistical systems through modernizing the institutional environment and the statistical production processes. The traditional way of organizing and managing the statistical system is not appropriate for making the transition to a modern integrated national statistical system that can meet the requirements in terms of producing and reporting data for the Post-2015 Development Agenda and providing information for integrated decision-making.

In 2013, the *Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*[3] called for a data revolution for sustainable development, with a new international initiative to improve the quality of statistics and information available to citizens. The report states, "*We should actively take advantage of new technology, crowd sourcing, and improved connectivity to empower people with information on the progress towards the targets*".

The report also noted that better data and statistics will help governments track progress and make sure their decisions are evidence-based; they can also strengthen accountability. The Panel further proposed that, in the future – at latest by 2030 – all large businesses should be reporting on their environmental and social impacts, and governments should adopt the UN's SEEA with help provided to those who need help to do this.

Also in 2013, the UN published the *Guidelines on Integrated Economic Statistics*[4] highlighting the need to move from the traditional silo approach to a more integrated approach to the production of statistics matched by the reform of the institutional arrangements, including access and use of administrative sources for statistical purposes. It recognized the significance of an integrated approach for increasing the consistency and coherence of economic statistics to enhance the quality and analytical value of the information the statistics convey for short-term, annual and benchmark economic and macroeconomic statistics. The guidelines present the integration framework of economic statistics based on current best practices for the entire spectrum of statistical agencies, including countries with centralized and decentralized statistical systems and countries at different stages of economic and statistical development.

Integrated economic statistics depict a consistent and coherent picture of economic activities for policy, business and other analytical uses. In addition, a number of recent emerging initiatives on the measurement of sustainability, social progress and well-being have raised the need for integrated and coherent official statistics to shed light on those complex issues, and therefore

[3] www.un.org/sg/management/pdf/HLP_P2015_Report.pdf.
[4] http://unstats.un.org/unsd/nationalaccount/docs/IES-Guidelines-e.pdf

pose challenges to statistical offices to produce integrated economic, environmental and socio-demographic statistics.

In 2014, the report *A world that counts – mobilizing the data revolution for sustainable development*[5] published by the Secretary General's Independent Advisory Group (IEAG)[6], calls for a better coordination of statistical programs developed by international organizations. The recent *Synthesis Report* published by the UN Secretary General has picked up the IEAG recommendation of considering the "statistical capacity building" dimension as an important part of the new investments for development. Moreover: "all countries are encouraged to adopt their own national sustainable development financing strategies".

The SEEA is proposed as a common measurement framework for several environment, biodiversity and sustainable-development related international initiatives including the Post-2015 Development Agenda Sustainable Development Goals (SDGs), the OECD Green Growth initiative, the World Bank WAVES, IPBES, BIOFIN, Sustainable Consumption and Production, and the CBD Aichi Targets.

Intergovernmental negotiations on the Post 2015 Development Agenda have produced a draft document: *Transforming Our World: The 2030 Agenda for Sustainable Development*[7]. This document sets out 17 Sustainable Development Goals (SDGs) and 169 targets that build on the Millennium Development Goals (MDGs).

Regular reporting on SNA and SEEA accounts will support the production of indicators to monitor at least 12 of the SDG goals:

- Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture,
- Goal 6: Availability and sustainable management of water and sanitation,
- Goal 7: Access to affordable, reliable, sustainable, and modern energy,
- Goal 8: Sustainable economic growth,
- Goal 9: Industry, innovation and infrastructure
- Goal 10: Reduced inequalities
- Goal 11: Safe, resilient and sustainable cities,
- Goal 12: Sustainable consumption and production,
- Goal 13: Combat climate change and its impacts,
- Goal 14: Sustainable use of oceans, seas and marine resources,
- Goal 15: Sustainable use of terrestrial ecosystems, especially 15.9 integrating ecosystem and biodiversity values into national and local planning and development processes and poverty reduction strategies and accounts, and
- Goal 17: Enhancing capacity building to increase availability of data.

Therefore, implementing the SEEA addresses not only national development objectives, but serve the purpose of international reporting as well.

[5] http://www.undatarevolution.org/
[6] Independent Expert Advisory Group on a Data Revolution for Sustainable Development.
[7] https://sustainabledevelopment.un.org/post2015/transformingourworld.

3.2 Country perspective

There is a strong commitment from the Government of Vietnam to environmental-economic accounting that has grown from a range of policy drivers and current and on-going work on environmental accounting and environmental information initiatives more generally. Academics and staff from international and non-government organizations were also strongly supportive of progressing environmental-economic accounting in Vietnam.

The strong support for environmental-economic accounting is based on a clear general understanding of the SEEA Central Framework in particular. It also builds on past and existing activities. For example, the projects undertaken or are in progress on accounting for forests, land and water as well as Green GDP and the variety of training initiatives that have supported this. In addition, there is also experience with assessments of ecosystem services and other accounting related projects (e.g. on CO_2 emissions).

Vietnam has a range of policy and other documents relevant to environmental-economic accounting. The main policy documents include:

- Socio-Economic Development Strategy (SEDS)[8] and Plan (SEDP 2011015)[9]
- Vietnam Green Growth Strategy(VGGS)[10] and Action Plan (VGAP)
- National Strategy for Environmental Protection to 2020 with Vision Towards 2030 (NSEP)[11]
- Strategy for Sustainable Development in Vietnam for the period 2011-2020 (SSDV)[12]
- National Strategy on Climate Change (NSCC)[13]
- National Statistics Indicator System (NSIS)

The SEDS and SEDP highlight the need for sustainable development and environmental protection. Together they outline a plan for the development of natural resource industries (e.g. agriculture, forestry and fisheries) with the aim to increase rural incomes as well as overall economic growth. The SEDP's focus on the links between the environment and the economy make it particularly relevant to environmental-economic accounting.

The Vietnam Green Growth Strategy of 2012 and the related Action Plan focus on reducing energy use, limiting and controlling greenhouse gas emissions, reducing waste and encouraging the sustainable use of natural resources. The strategy identifies 13 indicators relating to environment and includes the development of tools for natural capital accounting, which is one

[8] See http://www.economica.vn/ChangePages.aspx?IDKey=T68H36363539105330&c=0&f=1.
[9] See http://www.chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails%3FcategoryId%3D30%26articleId%3D10052505
[10] See http://www.greengrowth-elearning.org/pdf/VietNam-GreenGrowth-Strategy.pdf
[11] See http://thuvienphapluat.vn/archive/Decision-No-1216-QD-TTg-approving-the-strategy-for-protecting-the-national-vb151908.aspxand http://theredddesk.org/sites/default/files/national_env_strategy_1.pdf
[12] See http://www.chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails?categoryId=30&articleId=10050825
[13] See http://chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails%3FcategoryId%3D30%26articleId%3D10051283

part of environmental-economic accounting, as well as wanting to develop a Green GDP index as an indicator of progress in achieving sustainable development.

The National Strategy for Environmental Protection until 2020 and Vision Towards 2030[14] was approved in 2012. It contains 60 indicators of which 30 are on the environment. The Strategy calls for speeding up "the application of economic mechanisms and tools in conformity with market economic regimes in order to realize macro manipulations of development activities toward environmental friendliness, especially through tax, fee, security, payment for environment services, and natural capital accounts."

The National Strategy on Climate Change recognizes the serious challenges associated with climate change and Vietnam, as potentially one of the most affected countries, considers an effective response to be vital. The strategy also recognizes that the response to climate change must be closely attached to sustainable development. A low-carbon economy and reduction of greenhouse gas emissions and a focus on adaptation are all features of the strategy. Importantly the strategy says "Measures to cope with climate change must be systematic, integrated, interdisciplinary, interregional, and suitable to specific stages and international stipulations; they must be based on scientific foundations, traditional experience and indigenous knowledge; they must take into account socio-economic effects as well as risky and indefinite factors of climate change". The Strategy is also supported by Party Resolution No. 24 on climate change, environment, and natural resources[15].

The Strategy for Sustainable Development in Vietnam for the period 2011-2020[16] (approved in 2012) provides a list of a list of 61 socio-economic and environmental indicators of which 9 environmental indicators for the monitoring and evaluation of sustainable development in Vietnam. The strategy does not provide details on how to calculate the indicators.

The National Statistics Indicator System (NSIS) directly address the issue of information in government. It was approved by the Prime Minister approved in 2010. The NSIS has 21 groups of indicators and 350 socio-economic and environmental indicators, of which 53 are environmental indicators[17]. The NSIS assigns the compilation of indicators to various ministries and departments and is reported on by the GSO. GSO does not apply a quality assurance framework to the information reported. GSO has developed a compilation guide for environment indicators under the NSIS.

Below these major national strategies, a range of policy and other decrees guide the work of the Government. In this it is noted that Ministries have their own sectoral strategies. For example,

[14] The National Strategy on Environment Protection to 2020, with Visions to 2030 was approved by the Prime Minister in Decision 1216/QD-TTg on 5 September 2012. See http://thuvienphapluat.vn/archive/Decision-No-1216-QD-TTg-approving-the-strategy-for-protecting-the-national-vb151908.aspxand http://theredddesk.org/sites/default/files/national_env_strategy_1.pdf

[15] http://thuvienphapluat.vn/archive/Resolution-No-24-NQ-TW-climate-change-improvement-of-natural-resource-management-vb203397.aspx

[16] See http://www.chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails?categoryId=30&articleId=10050825

[17] See http://unstats.un.org/unsd/envaccounting/workshops/SEEA_Conf_2013/session_3/Vietnam.pdf

the Department of Geology and Minerals in MoNRE administers a Law on Minerals[18]from 2010 (an update of previous Law of 2005) that provides a strategy for minerals sector[19]. In this there is a need to understand the location and abundance of sub-soil assets but, at the same time, post-operations have to rehabilitate and understand the conservation values of land pre and post mining. Another example within MARD is the Strategy on Forests up to 2020, while Payments for Forest Environmental Services (PFES) became a policy of Viet Nam by virtue of Decree 99/2010/ND-CP, passed in September 2010[20].

The Post-2015 Development Agenda is being advanced in Vietnam[21]. A broad range of consultations have been undertaken by UNDP and are continuing. A coordinated assessment and response to the information needed to support the monitoring needs of the proposed Sustainable Development Goals has not yet be prepared nor cross-referenced with the information needs of national strategies and targets. Given the number of targets and indicators involved, it is timely to consider such an exercise.

Vietnam is also a signatory of the National Capital Accounting[22,23] communiqué that emerged from Rio+20. This document calls on governments, UN agencies, financial institutions and other international organizations to strengthen the implementation of natural capital accounting. In addition, the achievement of Aichi Target 2 under the Convention on Biological Diversity was noted as specifically relevant to the advancement of environmental-economic accounting in Vietnam.

A key area of public policy interest is the Mekong River Basin[24]. A particular focus is the growth of hydro-electric power schemes as well as coastal areas due to their vulnerability to climate change. The area is also a pilot for a payment for ecosystem services program. The basin spans several countries – Cambodia, China, Laos, Myanmar, Thailand and Vietnam.

Given these policy priorities, Vietnam has conducted an assessment of data, institutional and technical capacity. This assessment will guide how these priorities will be addressed through a National Program of Work for developing a cost-effective, ongoing and effective statistical system and related institutional mechanisms. Initial work will focus on further implementation of the SEEA and testing of the SEEA-EEA.

[18] See Mineral Law No. 60/2010/QH12 and Order No. 17/2010/L-CTN on the promulgation of the Mineral Law (http://faolex.fao.org/cgi-bin/faolex.exe?rec_id=106929&database=faolex&search_type=link&table=result&lang=eng&format_name=@ERALL)

[19] Article 13(1)(c) mentions that "national master plans on the exploitation and utilization of each kind or group of minerals for use as construction materials and national master plans on the exploitation and utilization of each kind or group of other minerals shall be elaborated on the following principles: Protection of the environment, natural landscape, historical-cultural relics, scenic places and other natural resources"

[20] See http://vietnam-redd.org/Upload/Download/File/99-2010-ND-CP_EN_2332.pdf

[21] See http://www.vn.undp.org/content/vietnam/en/home/mdgoverview/overview/post-2015-development-agenda/

[22] See https://www.wavespartnership.org/en/natural-capital-accounting-0

[23] See https://www.wavespartnership.org/sites/waves/files/documents/NCA%20supporters%20060314.pdf

[24] See for example the GGGI Conference at: http://gggi.org/green-growth-on-the-rise-in-the-mekong-river-basin-from-concept-to-reality/

3.3 Vietnam Environmental-Economic accounting needs assessment

Past and on-going work in Vietnam has already led to a number of project based institutional arrangements for the development and implementation of environmental accounting. These provide a sound basis for moving forward with the implementation of environmental-economic accounting and the regular production of a range of accounts.

Several needs in relation to environmental-economic accounting were identified. These were the need for (a) a comprehensive environmental-economic accounting information system, (b) enhanced institutional coordination within Vietnam and between national and provincial governments, (c) improved data infrastructure, (d) training and capacity building, (e) enhanced coordination with international and donor agencies, (f) improved coordination of sustainable development projects, (g) linking with existing development platforms, (h) addressing challenges in data quality, access and related technical capacity, and (i) immediately beginning work on priority accounts:

- **A comprehensive environmental-economic accounting information system**: Such a system is need to enable environmental-economic accounts to be created that respond to the requirements of the recently promulgated national and sectoral sustainability strategies, including green growth, sustainable development, Agenda 21, climate change, environmental protection, and so forth. For example, the National Strategy on Environment Protection to 2020, with Visions to 2030 calls for speeding up "the application of economic mechanisms and tools in conformity with market economic regimes in order to realize macro manipulations of development activities toward environmental friendliness, especially through tax, fee, security, payment for environment services, and natural capital accounts". Likewise, the Vietnam National Green Growth Strategy calls for formulating "the green accounting system through valuation of natural resources". In this context, there is an opportunity for developing environmental-economic accounting, including ecosystem accounting, in the context of the post-2015 sustainable development agenda.
- **Enhanced institutional coordination within Vietnam and between national and provincial governments** for the advancement of SEEA, including ecosystem accounting: In this regard, the assessment report echoes the suggestion of establishing a working group on environmental-economic accounting and related information sources. This group could be modelled on the existing project working groups and the Inter-Ministerial Working Group.
- **Improved data infrastructure (both hardware and software):** As part of this General Statistics Office identified in-house GIS capacity as a specific area to be prioritized.
- **Training and capacity building in environmental-economic accounting**: This was highlighted as a key need by all stakeholders. In this there was need to provide basic understanding and then more to progressively more advanced training and other forms of professional development(e.g. on-line learning, staff exchanges, enrolment in higher degree courses, etc.).
- **Enhanced coordination of support from international agencies and donor agencies** for assistance with environmental-economic accounting and related accounting and data initiatives. In this there is an opportunity for framing the ANCA project as a "One-UN" initiative, with SEEA mainstreamed for organising the information system and "green

statistics" for sustainable development. Enhanced coordination should help to harmonise the messages on the course of action by development partners on the information system for sustainable development.

- **Improved coordination of sustainable development projects** by the development of environmental-economic accounting. For example, with respect to harmonisation of classifications used and agreement on data exchange protocols to ensure that environmental and economic data compiled in one project may be used for multiple purposes, including the development of environmental-economic accounts. In this regard, NP-AEEA will build on the Natural Capital Accounting Roadmap to 2020 sponsored by the World Bank (which does not cover ecosystem accounting) and other existing initiatives. For example, there are also strong synergies between data requirements to support UNDP policy work on green growth at the Ministry of Planning and Investment (MPI) creating the green growth facility and the development of SEEA in Vietnam.
- **Links with existing development platforms**, such as the Vietnam Development Partnership Forum and the recently re-energized Natural Resources and Environment Policy Dialogue, chaired by the Ministry of Natural Resources and Environment. To facilitate such linking, it is proposed that a high-level event in 2015 for endorsing the national program of work plan is co-hosted by UNEP, UNDP, UNSD and the World Bank.
- **Addressing challenges in data quality, access and related technical capacity**: A number of challenges were identified and need to be addressed for the progression of environmental-economic accounting in Vietnam. These are related to data quality, data gaps, data access and sharing, lack of documentation and data quality assessment frameworks, lack of statistical capacity, staff and adequate financial resources, etc. Also the present legal and related administrative mandates of the General Statistics Office (GSO) are insufficient to enable a leading role to be taken in the strengthening of the national statistical system to meet new information requirements.
- **Immediately beginning work on priority accounts**: Priority accounts for development in Vietnam were clearly identified, namely for Ecosystem Extent (Land Cover), Water Assets, Biodiversity, Carbon Stock and Ecosystem Services Supply, especially with respect to carbon sequestration, water provision and regulation, fish provision and erosion control; putting the piloted SEEA-CF accounts (forestry, land, water, waste/pollution, fisheries, and minerals and energy) into ongoing production, and developing macro-economic aggregates for Green GDP and Ecological Footprint indicators. The development of these accounts is clearly a path to the development of ecosystem accounting in Vietnam.

To address these needs, the national program of work proposes to work towards developing a comprehensive environmental-economic accounting information system by strengthening national partnerships, improving data infrastructure, training and capacity building, enhancing coordination and addressing challenges in data quality and access. To accomplish this, the engagement of the Ministry of Agriculture and Rural Development (MARD) by MPI, MoNRE and others is important given that MARD is a custodian of much of the primary data on agriculture, forestry and fisheries and related knowledge and directly oversees programs and activities in these sub-sectors.

4 NP-AEEA – HIGH LEVEL OUTCOMES

It is important to link proposed activities with their ultimate outcomes. This section summarizes the key outcomes that could be achieved for Vietnam by adopting and implementing the NP-AEEA. In section 'NP-AEEA – Investment Logic Framework' a program of activities is detailed showing the timelines and steps needed to achieve the outcomes:

- A comprehensive environmental-economic accounting information system that responds to the requirements of the recently promulgated national and sectoral sustainability strategies.
- Enhanced institutional coordination within Vietnam and between national and provincial governments for the advancement of SEEA, including ecosystem accounting.
- Improved data infrastructure (both hardware and software)
- Increased training and capacity building in environmental-economic accounting
- Enhanced coordination of support from international and donor agencies for assistance with environmental-economic accounting and related accounting and data initiatives.
- Improved coordination sustainable development projects with the development of environmental-economic accounting building on the Natural Capital Accounting Roadmap to 2020
- Stronger links with existing platforms, such as the Vietnam Development Partnership Forum and the recently re-energized Natural Resources and Environment Policy Dialogue, chaired by the Ministry of Natural Resources and Environment.
- A set of priority accounts, namely for forestry, land, water, energy, fisheries, minerals, waste/emissions, environmental protection and commence the work needed to construct a Green GDP and Ecological Footprint.

5 PROGRAM OF WORK BUILDING BLOCKS

This section and the following section on **Methodologies** provide a brief overview of the building blocks and methods needed to implement the NP-AEEA. The aim of this section is to provide generic guidance on a standardized approach based on current frameworks, systems, methods and guidance and training material.

The Guidelines on Integrated Economic Statistics (IES)[25] suggest three main interlinked and mutually reinforcing building blocks for developing integrated statistical systems: conceptual organizing frameworks, institutional arrangements and statistical production process[26].

Linking these to the needs assessment and high level outcomes sections above, the building blocks when applied to the NP-AEEA – Investment Logic Framework section are:

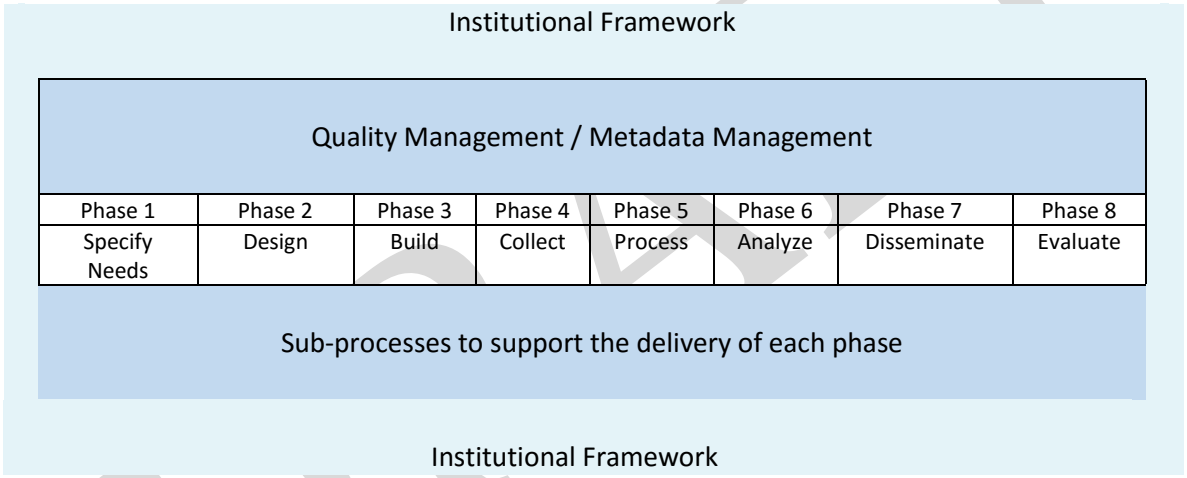
1) Mainstream the Environmental-Economic Accounting Frameworks
2) Rationalize and Integrate Institutional Arrangements
3) Integrate the Data, Tools and Statistical Production Process

[25] http://unstats.un.org/unsd/nationalaccount/docs/IES-Guidelines-e.pdf.
[26] The building block approach presented here is an application of the process presented in the Guidelines on Integrated Economic Statistics (http://unstats.un.org/unsd/nationalaccount/docs/IES-Guidelines-e.pdf).

4) Ecosystem Accounting Experimentation[27]

Blocks 1-3 are the core and required to achieve the overall aim and Block 4 ensures continuous improvement including research and development, testing and experimentation to adapt the guidelines of the SEEA to the country situation. The building blocks are combined with the GSBPM[28] shown in **Figure 1**. The GSBPM describes and defines the set of business processes needed to produce official statistics. It provides a standard framework and harmonized terminology to help statistical organizations to modernize their statistical production processes, as well as to share methods and components. The GSBPM can also be used for integrating data and metadata standards, as a template for process documentation, for harmonizing statistical computing infrastructures, and to provide a framework for process quality assessment and improvement.

Figure 1 Generic Statistical Business Process Model (GSBPM).



The GSBPM should be applied and interpreted flexibly and used to provide guidance. It is not a rigid framework in which all steps must be followed in a strict order. Instead, it identifies the possible steps in the statistical business process, and the inter-dependencies between them.

Although the presentation of the GSBPM follows the logical sequence of steps in most statistical business processes, the elements of the model may occur in different orders in different circumstances. In addition, some sub processes will be revisited a number of times forming iterative loops, particularly within the Process and Analyze phases.

GSBPM is a matrix, through which there are many possible paths. In this way, the GSBPM aims to be sufficiently generic to be widely applicable, and to encourage a standard view of the statistical business process, without becoming either too restrictive or too abstract and theoretical.

The building blocks are expanded on below followed by a discussion of methodologies to support their implementation.

[27] Experimentation has been added as an additional building block in support of SEEA EEA and the experimental nature of work needed.

[28] http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5.0

SEEA

5.1 Mainstream the environmental-economic accounting frameworks

The fundamental objective of this building block is to communicate with and engage national and international partners for the implementation of environmental-economic accounts. The foundations of the GSBPM are quality management and metadata management frameworks of which the SEEA is one.

This building block aims to mainstream the environmental-economic accounting frameworks, and to structure it in stages that can be implemented and monitored. The framework builds on SNA principles but is extended based on ecological foundations, and under the umbrella of SEEA-CF and SEEA-EEA. Novel concepts and ideas need to be mainstreamed for the purposes of experimentation and familiarization across government agencies and academia. It is an umbrella block of work that guides the development of the others and is necessary for their success.

Building and publishing environmental-economic accounts relies on a number of related processes, all geared towards the advancement of organizational design (institutions), technical (data collection and processing), scientific discovery (generating new data) and ultimately an improved understanding of natural resource and ecosystem values as assets that provide essential services.

These processes combine available knowledge from many disciplines and agencies including national statistics and accounting, management of energy, minerals, land, water, ecosystems and biodiversity and studies of key ecological processes to name a few. All these require clear communication tailored to their needs so that mainstreaming, adaptation and application of the available knowledge can occur.

5.2 Rationalize and integrate institutional arrangements

The “One-UN” process recommends that countries move towards one integrated National Statistical System. That is, all agencies should work within the same quality guidelines and seek opportunities for reducing duplication of effort by improving coordination in statistical production.

Clearly for any new system, process or framework that affects so many agencies to be adopted by government requires very careful assessment of current institutional arrangements and possible impacts on those arrangements. The GSBPM recognizes this as a condition to achieving adoption, funding, monitoring and enforcement of any new system. Further, it can be applied to all stages in the process and, at each stage, institutions and agencies will understand clearly their roles and responsibilities.

There are many agencies involved in the collection and publication of data. In many instances, the need has arisen from within individual agencies to meet their reporting and policy requirements. For instance, an environmental agency may focus on the classification and measurement of important ecosystem assets in the landscape whereas an agricultural agency will focus on economic benefits of the same landscape. Both approaches are valid in their own right, but the aim of environmental-economic accounting is to build an integrated set of information to support decision making and trade-offs across domains. Further, the movement towards a more

integrated and streamlined process for the collection and publication of data provides opportunities for lowering the overall cost and increasing its use and efficacy.

This does not imply reducing the control that agencies have over their own data collection processes, but it does require rationalizing the standards used for data collection and strengthening the NSS to share data in real time where appropriate. It is important to recognize that individual agencies have the greatest strength in understanding specific subject areas but are not necessarily expert in statistical production systems – this is the role of NSOs.

5.3 Integrate the data, tools and statistical production process

Environmental-economic accounting is a transdisciplinary activity. That is, the concepts and tools require a common language between disciplines. Integrating existing concepts and tools that have been developed for specific purposes will require adaptation to a common framework provided by the SEEA.

This building block links to GSBPM Phases 3, 4, 5 and 6 and addresses the main challenges of data gaps, scientific credibility, comparability and data uncertainties that can be bridged by building on the existing data systems, methods and tools. Building environmental-economic accounts provides new challenges for both economic and environmental data collection and production. There is a need to harmonize concepts and rationalize the principles of both disciplines to maintain the integrity of both areas. In many instances there will be a need to adjust to a shared conceptual framework to facilitate an integrated outcome.

Many of the tools and infrastructure required already exist. However they operate on different platforms and standards making integration costly in both time and resources. In the medium to long term the aim of the NP-AEEA is to leverage current systems that offer the flexibility needed to support future demands for integration. Key to achieving this will be the review and assessment of current systems and approaches. This would be followed by the development of a strategic investment plan for their integration.

5.4 Ecosystem accounting experimentation

There remains some uncertainty in the science and its application in ecosystem accounting within the broad umbrella of environmental-economic accounting. A cost-effective approach to determining the best pathway is to experiment on a number of fronts at the same time whilst keeping in mind the long-term aim of full integration and publication at the national level. Testing the SEEA-EEA is part of a global experiment to develop effective ecosystem accounts. In this respect, the experience of all countries will contribute to this experiment.

Experimentation also serves as important vehicle for achieving the mainstreaming of ecosystem accounting. During the experimentation phase agencies less familiar with ecosystem accounting can be involved and grow to understand how demands for data are changing and how the accounts can be tailored to their policy needs.

Vietnam is well placed to participate in this experimentation, given the high-level interest in sustainable development and the need articulated among a range of stakeholders to assess the economic benefits of the sustainability efforts undertaken. This establishes the conditions for broad support for the SEEA approach in the country.

6 METHODOLOGIES

This section on methodology relies heavily on the current and new material being produced that will support the ongoing production of environmental-economic accounts. This section provides a brief overview of some of the methodological approaches and options that may be considered when formulating a program of work to that delivers on the building blocks and the longer-term aim of the country.

The advantage of having common methodological frameworks is to enable coordinated progress towards advancing environmental-economic accounting.

6.1 Institutional framework

The institutional framework should facilitate exchange of knowledge, expertise and even experts between the partners. The creation of the integrated systems of statistics should be the shared responsibility of the top management of all agencies involved. When agreement on the more detailed program, the roadmap and the specific roles and responsibilities has been reached, then periodic high level meetings may be very fruitful to discuss progress, solve bottlenecks, strengthen commitment and ensure that the outputs satisfy the needs of the stakeholders.

Designing, developing and implementing an integrated system of statistics is a large program and requires a broad management strategy. For the program and all the sub-programs, program boards and program managers are needed. The program boards are chaired by the senior manager of the domain involved. If the (sub-) program goes beyond the borders of organizational units, it is preferable to have a senior manager as chair.

The program boards and the program managers may be supported by a small bureau in operational and administrative tasks. The program boards consist of the chair, the program managers and directly involved management. All members should seek to have a mandate to make decisions within the scope of the (sub-) program.

Elements that may be adapted to conditions in Vietnam include:

- High level commitment, and engagement of partners; common coordination; data collection/sharing implications
- Advisory committees (IES[29], p.39)
- Legislation, mandates to coordinate, produce, supply inputs etc.
- Inter-institutional commitments for production of integrated statistics – Memoranda of Understanding (MoUs) (IES, p.41)
- Inter-departmental commitments – service-level agreements (SLAs) (IES, p.42)
- Programme governance structure development

6.2 Roles and Responsibilities for Environmental-Economic Accounting

If agencies outside the NSOs are involved in the compilation and dissemination of official statistics, then for the creation of integrated system of statistics, it is necessary to create

[29] The Guidelines on Integrated Economic Statistics http://unstats.un.org/unsd/nationalaccount/docs/IES-Guidelines-e.pdf. See above.

partnerships. The first step is to engage all relevant agencies in the discussion of the necessity and the mutual gains of improving integration within the NSS. This can only be done at the level of the top management. The next step is agreement on the possible new roles and responsibilities of the agencies in the new systems.

When general agreement on the scope of the integrated systems of statistics has been reached, a detailed design of the whole chain of all processes, inputs, intermediary products, outputs and all interdependencies can be made. The process will be iterative, in that pilot accounts will be built and the design will be revised based on the experience gained. Initial design and testing will require attention to:

- Working groups
- Advocacy
- Workshops – policy, awareness building, etc.
- Demonstrations
- Feasibility
- Proof of concept – experimentation, structural change,
- Training sessions
- Customized communications plans

6.3 Environmental-Economic accounts production process

The GSBPM Phase 3 (Build) and Phase-4 (Collect) are based on the understanding of the mechanics of delivering on a new system developed in Phase 2 (Design). This includes (but is not limited to):

- Data collection (or generation – through sampling, inventories/surveys, detailed process-modelling, spatial and remote-sensing applications);
- Data harmonization (processing, quality control, imputation);
- Determining accounting inputs;
- Accounting outputs estimation
- Accounts validation

The program of work is an opportunity to adapt these elements to the needs of each country for all the phases of GSBPM.

6.4 Research, development and experimentation

An important step is to carry out extensive experimentation to test whether methods and concepts are appropriate, and what data can be used or developed. The SEEA-EEA provides a core measurement framework, but has not yet developed to the point where all methodological issues have been resolved and universal compilation guidelines can be provided. Issues that require further experimentation include:

- Accounting classifications[30], with standardized item definitions and measurement methods

[30] Accounting classification enables the translations between existing classifications.

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

These methodological issues will be addressed in collaboration with an international community of practice on environmental-economic and ecosystem accounting. This can be enhanced by considering the pilot accounts as experiments, in which concepts, classifications and methods are tested and improved in successive iterations. Different options, for example, for classifications or data sources could be applied in parallel and evaluated.

6.4.1 Accounting architecture

When designing new accounts, it is very important to ensure the timely availability of micro-data and the time required for processing. A part of the experimentation should be to test the design for feasibility within the business and software architecture. This will reveal any consequences for the information infrastructure (IT) environment (Geographic Information System (GIS) capacity, running time, storage etc.). If the feasibility tests show bottlenecks, one must make sure that they can be solved at reasonable cost before the next phase can start. Based upon the (adapted) design, the experimentation, the estimated costs and benefits a decision must be made whether the program is feasible and acceptable for all involved partners.

6.4.2 Information and decision support tools and architecture

Outside of statistical systems managed by NSOs, there are many systems in place for the collection and collation of data for decision making. These include geographical information systems, biophysical models, agency databases, business and land registers and taxation registers.

Many of these are amenable to producing data that can be used for environmental-economic accounting but may require further adaptation to integrate with other systems. This area of experimentation is very important because there are significant opportunities to leverage the current system to save resources.

It is important that experimentation has clear links with policy and decision making to demonstrate the benefits of change. Examples may include:

- The specification of ecosystem assets and services used in payments for ecosystem services programs[31]
- Land offset programs for environmental purposes[32]
- Land use change programs for carbon sequestration[33]

[31] http://www.depi.vic.gov.au/environment-and-wildlife/environmental-action/innovative-market-approaches/ecomarkets
[32] http://www.trustfornature.org.au/
[33] http://www.un-redd.org/aboutredd/tabid/102614/default.aspx

- Trade-offs between optional uses of land in land use planning
- Setting priorities for conservation areas

Moving from experimentation to (national) production

Case studies, specialized national statistical collections, sub-national collections and experimental accounts all offer opportunities for scaling up to national-level GSBPM-compliant statistical processes. Whether or not these have been conducted according to Phases 1 through 7 of the GSBPM, there will still be effort required to ensure that these collections are brought into compliance in terms of quality, consistency in concepts, resourcing and long-term planning.

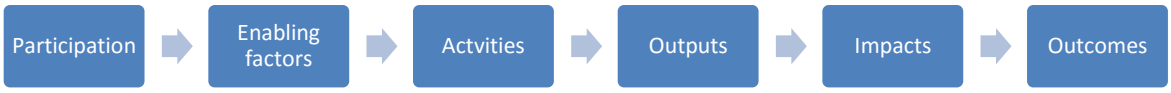
The recommended approach to accomplishing this is for the NSO to assess a candidate data collection with respect to quality and coherence with the SEEA. In the case of well-established collections, the project team will need to decide how the collection may be adapted to the national standard without affecting its original purpose. For example, crosswalks may need to be developed for classifications and more stringent quality guidelines and documentation may need to be developed. After assessment and integration, the project team is in a position to produce a work plan that specifies the timelines, resources required to produce the expected outputs.

This scaling up of existing work should be seen as a national strategic investment, since it will (a) make a new data source available to address national policy priorities at a relatively low cost, (b) improve the consistency and coherence of existing data collection activities and (c) provide new uses and users for existing data.

7 NP-AEEA – INVESTMENT LOGIC FRAMEWORK (ILF)

The ILF provides a structured approach to analyzing the suite of optional activities that may be undertaken to achieve the desired outcomes (See **Error! Reference source not found.** below and in more detail in **Figure 3** in **Section 9**). The ILF should not be seen as a series of steps to be followed consecutively but as a key elements that are essential to the effective delivery of outcomes.

Figure 2. Investment Logic Framework



Participation and Enabling Factors – it is important to identify stakeholders that need to participate and to start engagement early. Participation is central to the mainstreaming of environmental-economic accounting and achieving buy-in and engagement. Often an assessment of participation and enabling factors occur together. Enabling factors may require changes in institutional arrangements before statistical development activities commence. Additional resources may need to be allocated to achieve an enabling factor, so it is important for participants to be very clear from the outset what their involvement may mean.

Activities and Outputs – the program of work is made up of series of activities that lead to a number of outputs. Activities are elements of work and outputs are visible products of that work. Achieving one output may require several activities. It is important to ensure that each activity

can be linked to an output to ensure its relevance and timing. Finally, outputs can be linked to impacts and outcomes.

Impacts and Outcomes - Impact evaluation measures the difference between what happened with the program and what would have happened without it. It answers the question, "How much (if any) of the observed change occurred because of the program or activities?" Outcome evaluation measures the program results or outcomes. These can be both short and long-term outcomes.

This section will help establish a process to identify which activities of the project need to be implemented, the priority content and means of implementation.

7.1 Participation and enabling factors

7.1.1 Coordination with development partners in Vietnam

Several government institutions in Vietnam are involved in the management of the environment:

- Ministry of Planning and Investment (MPI)
  - General Statistics Office (GSO)
  - Central Institute for Economic Management (CIEM)
- Ministry of Natural Resources and Environment (MoNRE)
  - Vietnam Environment Administration (VEA)
  - Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)
  - National Hydro- Meteorological Service
  - Department of Metereology, Hydrology and Climate Change
- Ministry of Agriculture and Rural Development
  - Vietnamese Academy of Forest Sciences (VAFS)
  - Vietnam Administration of Forestry (VN Forest)
- Ministry of Finance (MOF)
- Viet Nam National Mekong Committee (VNMC)

The Vietnam Development Partnership Forum (VDPF)[34]supports discussions between the Government of Vietnam, development partners, the private sector, local and international civil society organizations, national research institutions and other development actors to foster broad-based socio-economic development. The Environment working group of the VDPF is chaired by JICA.

If environmental – economic accounting exists at national level in Vietnam as expected output of the project we need the participation of not only research institutes but also management agencies. In the Ministry of Natural Resources and Environment (MoNRE), the participation of Vietnam Environment Administration (VEA) is needed, because VEA performs the advisory

[34] See http://www.worldbank.org/en/events/2013/12/04/vietnam-development-partnership-forum-a-new-platform-for-policy-dialogue

function to help the Minister of National Resources and Environment in doing the task of state management and implementing the law on environment in nationwide; managing and carrying out public services on environment in accordance with the law

7.2 Enabling factors

The knowledge base for environmental-economic accounting exists in Vietnam. This has grown through several initiatives, some specifically on environmental accounting and other related activities like the estimation of ecosystem services. This section examines the progress on environmental-economic accounting and the data available to enable the development and on-going production of environmental-economic accounts and the related data sources needed for them.

A range of projects already completed or that are in progress in Vietnam are directly relevant to environmental-economic accounting. Projects and activities identified include[35]:

- Report on the National Forest Satellite Account Compilation (GSO, VAFS, ISPONRE, World Bank)
- Green GDP index: Research Methodology Framework Development (CIEM, GSO)
- Water accounting in the Ca River Basin (MARD, ISPONRE, Winrock International)
- ProEcoServ (GEF, UNEP, ISPONRE)
- Climate change and greenhouse gas emissions
    - Measuring greenhouse gas emission in Vietnam (MoNRE, USAID, KEAF)
    - Ecosystem-based Adaptation to Climate Change (ISPORNE, WWF, BCA, Stockholm University)
    - Reducing Emissions from Deforestation and Forest Degradation (REDD+ UN-REDD, FPCF) (Ministry of Agriculture and Rural Development, UNFCCC, World Bank, etc.)
    - Calculating carbon forest stock and building the reference level (REL/FRL) (MARD; JICA)
- Payments for ecosystems services (Asian Development Bank, USAID, LEAF), payments for forestry environment services (National policy- MARD)
- Mekong Basin
- Environmental Performance Index (Yale University)
- Training
- Draft Natural Capital Accounting Roadmap up to 2020 (ISPONRE/World Bank)

In addition, new legal documents on the environment such as Resolution No 24-NQ/TW of the Central Committee of the Vietnamese Communist Party Session XI about "Actively coping with the climate change, enhancing natural resources management and environmental protection" (Environmental Protection Law 2014) can be addressed with enhanced environmental-economic accounts.

[35] See the assessment report for a more detailed discussion of each.

7.2.1 Planning and coordination

An overall Senior Steering Committee on Environmental-Economic Accounting is needed in Vietnam. This group should be empowered to lead the work on environmental-economic accounting in Vietnam and ensure the effective coordination of related activity. This group would need to include senior officials in addition to the GSO from the main ministries of the Government of Vietnam, including MPI, MoNRE and MARD as well as from other stakeholders. The Steering Committee would need to meet regularly, around four (4) times per year initially (for the first 1-2 years) and less frequently after that (2 times per year).

Terms of Reference for the Committee would need to be developed. Key tasks of the Steering Committee would be to:

- Develop and advocate the NNP-AEEA within the government and with relevant international agencies,
- Coordinate with relevant data collection and capacity building activities,
- Ensure the establishment and effective function of Technical Committee (described below) and monitor its work,
- Facilitate the mobilization of legislation and resources necessary for the production of the accounts,
- Monitor the progress towards the production of priority environmental-economic accounts and related outputs (spatial datasets, collaborative database, indicators, case studies)

A Technical Committee would include senior experts from institutions represented on the Steering Committee as well as representatives from the research institutes, the Ministry of Industry and Trade, Ministry of Construction and invited members from the private sector, NGOs, and civil society.

Terms of Reference for the Technical Committee could include the responsibilities to:

- Under the guidance of the Senior Steering Committee, coordinate technical aspects of implementing the work plan by:
    - Establishing Technical Working Groups in keeping with priorities established in the work plan by allocating appropriate staff and necessary resources
    - Coordinating the work of the Technical Working Groups by setting priorities, reviewing and revising specific work plans, fostering collaboration, and promoting capacity building
    - Coordinating technical work with related national and international initiatives
    - Internalizing activities of the Technical Working Groups into planning and policy documents
- Reporting on priorities, plans and progress to the Senior Steering Committee

Technical Working Groups would address seven subject-matter areas:

- Land cover accounts (by ecosystem type including forests)
- Water asset accounts
- Biodiversity asset accounts
- Carbon stock accounts

- Ecosystem service accounts
- Green GDP
- Ecological Footprint

Theses subject-matter areas could be combined under a smaller number of Technical Working Groups, for example, Green GDP and Ecological Footprint could be assigned to one Working Group that also is responsible for the SEEA-CF accounts (forestry, land, water, waste/pollution, fisheries, and minerals and energy).

Rather than duplicating the capacity to integrate spatial data, classify data and to maintain quality standards, a separate Functional Working Group could be assigned to support all three subject matter groups.

These Technical Working Groups could evolve from the existing arrangements for the development of environmental accounts and Green GDP. For example, the Inter-Ministerial Natural Capital Accounting Policy Working Group and the Data Working Group. The composition of each Working Group will need to reflect the particular account being developed but in general would need to contain representatives from the physical sciences, ecology, economists, accountants and statisticians. The group of statisticians can be viewed more generally as representing the process of the on-going and regular production of data by government. The main government agencies responsible for the collection, management and distribution of data relevant to the account would need to be represented.

Each of the Technical Working Groups would need to meet regularly, on the order of once per month in the first 1-2 years, and less frequently after that (3-4 times per year). The focus of the working is the production of pilot accounts, with a view to establishing the technical processes for the regular production and use of accounts within government.

This will be accomplished initially by inventorying available data, assessing its quality, identifying gaps, and integrating the data into a common spatial infrastructure. Priority data gaps could then be filled based on the most feasible approach (e.g., new data collection, adaptation of existing data, adaptation of global datasets).

As part of the planning and coordination phase each of the Technical Working Groups would produce a detailed work plan. At least once a year all Technical Working Groups should come together to report progress, share experiences and revise their work plans.

7.3 Activities and outputs

Over the medium-term, the pilot project will not only produce several pilot accounts, it will also produce prototype integrated indicators that address the needs of the Vision Towards 2030 and the SDGs, and a coherent spatial database.

7.3.1 Building priority accounts based on policy needs

The need for a range of environmental and ecosystem accounts was identified after a review of the major policy documents and discussions with a range of stakeholders. The link between policies, accounts and agencies is shown in **Table 1**, below.

Table 1. Overview of policies and accounts relevant to environmental-economic accounting in Vietnam

Type of account or aggregate	Policy or issue	Stakeholders
Ecosystem Extent Accounts (including forest, freshwater, coastal, marine)	SEDS, VGGS, NSEP, PES, SDGs	MARD, VAFS, GSO, MoNRE, ISPoNRE
Water Accounts	SEDS, VGGS, NSEP, PES, SDGs	MoNRE, MARD, GSO
Biodiversity Accounts	NSEP, CBD Aichi Target 2, SDGs	MoNRE, ISPoNRE, VAFS, GSO
Ecosystem Service Accounts	SEDS, VGGS, NSEP, NSCC, PES, SDGs	MPI, MARD, MoNRE, GSO
Carbon Stock Accounts (including GHG emissions)	NSCC, VGGS, NSEP, PES	MARD, VAFS, GSO, MoNRE, ISPoNRE
SEEA-CF Accounts: forestry, land, water, waste/pollution, fisheries, and minerals and energy	SEDS, NSEP, VGGS, SDGs	GSO, MARD, MoNRE, MoF, MoC, MoIT
Green GDP	SEDS, VGGS, NSEP, PES	CIEM, GSO, MPI
Ecological Footprint	VGGS	MoNRE, ISPoNNRE, MARD, VAFS, GSO

Environmental accounts identified included were forestry, land, water, waste/pollution, fisheries, and minerals and energy. The accounts, which are from the SEEA-CF, are important and the Draft Natural Capital Accounting Roadmap by ISPoNRE and the World Bank focuses on these accounts.

However, there are overlaps between the accounts of the SEEA-CF and the SEEA-EEA and in particular the water and land cover accounts. In this, the concepts underpinning the accounts and the structure of the accounts are the same, but for the SEEA-EEA they are applied at the sub-national level. Progress on the environmental accounts of the SEEA-CF is needed and extremely beneficial to the development of ecosystem accounting in Vietnam.

The priorities identified for the development of environmental-economic accounting were:

- Land cover accounts (by ecosystem type)
- Meteorology and Hydrology accounts
- Water asset accounts
- Biodiversity asset accounts
- Carbon stock accounts
- Ecosystem service accounts:
    - Carbon sequestration
    - Water provision and regulation
    - Fish provision
    - Erosion control (or water filtration)
- Natural resources accounts
- Mineral resources accounts
- Water accounts

- Forest accounts
- Land accounts
- Water pollution accounts
- Air pollution accounts
- Carbon dioxide accounts
- Solid waste accounts
- Natural forest accounts
    - Wood reserves
    - Forest products
    - Damages
    - Changes/ shift

Ecosystem Condition Accounts would also be possible and could be incorporated into the development of the land cover and ecosystem service accounts. Accounting for the Mekong River Basin could also be attempted, but to be fully effective would also need to include the area of the basin which occurs outside of Vietnam. This may be possible as an inter-regional initiative.

For each of the environmental-economic accounts the scale of the accounting would need to be based on environmental boundaries (e.g. River Basins) and/or administrative boundaries (e.g. provinces). Ecosystem accounts require greater spatial detail than most existing statistical processes. This has significant implications for the primary data sources and information management systems and administrative arrangements needed to generate and access the data to populate the accounts.

Pilot accounts would be progressively produced and refined from mid-2016. Following the pilot production of each of the four priority accounts, the aim should be to produce each of them again in two more consecutive years (i.e. in 2018 and 2019 or 2019 and 2020) and well as to produce a publication integrating all of the pilot environmental-economic accounts.

Ensuring the use of the accounts in government and other decision-making process will be addressed in a number of ways. Until the production of the first pilot accounts, the primary method will be engagement with policy-makers at different levels via the Senior Steering Committee, Technical Committee and Technical Working Groups. It is important that these first pilot accounts be seen as a proof of concept that addresses the specific needs of one or more stakeholders. After the pilot account accounts are produced, discussions on the possible applications of the accounts, including any additions or refinements, will be held directly with key government agencies. In addition, stakeholder workshops communicate the results of each account will be held.

7.3.2 Capacity building

Both human resources and infrastructure will need to be built- to develop, implement, and regularly produce and use environmental-economic accounts in Vietnam. A key part of the capacity building will be learning-by-doing via the production of pilot accounts.

In this, the building of both human resource and statistical infrastructure capacity would occur especially in the first 1-2 years, with the pilot accounts being produced in 2-3 years.

Human resource capacity

There will need to be some general training on environmental-economic accounting as well as more specific training on each account and the primary data sources used. The general training would occur as soon as possible in 2016, with more specialized training and technical training for each of the accounts to follow in the second half of 2016. For example:

- General workshop on environmental-economic accounting (June 2015)
- Workshop on water accounting (1st half of 2016)
- Workshop on land accounting (1st half of 2016)
- Workshop on biodiversity accounting (2nd half of 2016)
- Workshop on ecosystem service accounting (2nd half of 2016)
- Workshop on carbon accounting (2nd half of 2016)
- Workshop on Green GDP (1st half of 2017)
- Workshop on ecological footprint (1st half of 2017)

Subsequently, more details are likely to be needed in 2017 as the production of the pilot accounts and aggregates draws closer (i.e. from mid-2017)).

In addition to in-country training, a range of other capacity building activities should be considered including:

- Government officials and other stakeholders participating in relevant international meetings such as the planned regional workshops on environmental-economic accounting,
- Use of distance or on-line learning,
- Placement of project staff in countries or international agencies with existing environmental-economic accounting programs, and
- Sponsorship of account producers or users for relevant higher degree studies (e.g. on economics, ecology and accounting).) in universities. Local capacity could be augmented by developing course material and establishing courses on environmental-economic accounting for Vietnam's universities.
  Training activities should be scheduled and further detailed.

Infrastructure

Ensuring that the account developers have the necessary information technology and data to support the development of accounts will also be important. This need is already being addressed in a number of current projects, for example, the development of databases on biodiversity and for land planning.

To participate in the development of ecosystem accounts, the GSO requires expertise and information technology, both hardware and software, needed to integrate the spatially referenced environmental information of other agencies with their social and economic information. This is essential a geographic information system and operators.

As part of this access to data from remotely sensed data sources will also be needed. While not infrastructure *per se* the data would be a requirement for the development of environmental-economic accounts and in particular for the land cover and ecosystem service accounts.

Development of key aggregates

In addition to the priority accounts, the accounting aggregates Green GDP was identified along with the Ecological Footprint, which could be derived from a suite of integrated accounts and the data that would underpin these. The continued development of the Green GDP and Ecological Footprint would be dependent on the development of environmental-economic accounts.

7.4 Impacts & Final outcomes

Whereas activities and outputs are tangible and generally observable, the impacts and outcomes are more difficult to observe. However, the impacts are important because they are the changes expected as a result of the activities.

Table 2 provides a high level assessment of the impacts linked to the activities.

Table 2 Linking activities to impacts

Activities	Impacts
Building priority accounts based on policy needs	Providing Ministers and their agencies with empirical evidence of changes resulting from sustainable development policies Improved knowledge on ecosystems and well-being Better policies, decisions on trade-offs between development and conservation Foundations to build integrated indicators on sustainable development
Capacity building Human resources Infrastructure	The ongoing capability to integrate environmental-economic information into government decision making Training for agency and academic staff to support the ongoing implementation of environmental-economic accounts A civil service and civil society that is informed about environment and development The ongoing cost effective production of environmental-economic accounts that meet the needs of policy in a timely manner Improved statistical collaboration between sectors & agencies including sharing available data through a focal point.
Development of key aggregates	Provide Ministers and their agencies with empirical evidence linking government policies to sustainable development goals

The outputs are expected to contribute to the needs for a more integrated NSS and a more engaged and better-coordinated body of stakeholders. The contribution of the project to the sustainability of Vietnam's development initiatives depends on many factors, including unforeseen circumstances and events beyond the scope of the NP-AEEA. It has been the experience of the international statistical community that a robust and flexible NSS is an important tool in adapting to future uncertainties and future data needs.

8 CONCLUSIONS AND NEXT STEPS

The focus of the NP-AEEA is on medium-term (3-5 year) activities that will produce substantial new information to address Vietnam's sustainable development policy priorities. This is the first stage of creating a common, cost-effective and sustainable statistical infrastructure for environmental-economic accounting. Maintaining the momentum generated by these medium-term activities by new data collection and continual improvement will require more than specific funding opportunities. It will also require embedding the activities into the functions of government and national planning processes.

8.1 Conclusions

This NP-AEEA provides the foundations to write proposals that provide full details for each activity and the funding required. It contains many of the elements needed to write a proposal including: the policy priorities, the needs assessment and a set of activities that will advance environmental economic accounting.

Opportunities for funding come from many different sources: national initiatives, international agencies, national development agencies and the refocusing of current work. Such opportunities may be identified by anyone familiar with the NP-AEEA, including senior and technical staff, planning and environmental agencies and NSOs. It is therefore important that all stakeholders are familiar with the plan and bring such opportunities to the attention of the lead agency. To increase these opportunities, it is important that the NP-AEEA is summarized and presented at relevant meetings and made available to all agencies and published on the Internet.

8.2 Next steps

To progress from a plan to specific proposals requires:

(a) Adaptation of the NP-AEEA to the needs of the sponsor and funding available; and
(b) Additional detail on participants, implementation, timelines, deliverables and budget.

8.2.1 Adaptation of the NP-AEEA to the needs of the sponsor

Most sponsors will indicate their interests in funding projects by distributing a Terms of References (TORs) or Requests for Proposals (RFPs). This will be based on the sponsor's vision of what is required.

The interests of sponsors may be less comprehensive and integrated than those covered in the NP-AEEA. Generally, sponsors are looking for proposals that focus on specific aspects of environmental-economic accounting, such as biodiversity, ecosystem services, mapping, poverty alleviation, food security, etc. They may also be interested in specific ecosystem types: oceans, forests, rivers or ecological topics such as desertification, pollution or species loss. They may be looking to support feasibility studies, capacity building or valuation.

The NP-AEEA provides the foundations for most of the above proposal types and presents them as an integrated package. It also emphasizes the importance of a strong statistical infrastructure, so that the results of any project will contribute to building technical, institutional and statistical capacity. Although the need to strengthen the NSS may not be mentioned in a sponsors TOR or RFP it is in the country's national interest to emphasize this in proposals.

A TOR or RFP will also suggest a maximum amount of funding for projects. Furthermore, sponsors often require co-funding. That is, a country is expected to contribute a proportion of the costs of the entire project. Co-funding may sometimes be stated in terms of "in-kind" contributions of human and other resources. How much funding is available and the willingness of national stakeholders to co-fund a project will determine which aspects of the NP-AEEA are included in any given proposal.

8.2.2 Additional detail

The amount and nature of the detail contained in a proposal also depends on the expectations of the sponsor. Ideally, the proposal will link the expectations of the sponsor with the needs of the country.

Participants

The first step in developing a proposal is to assemble the team that may include departments, agencies and other stakeholders who will commit to participating in a project if it is funded. As noted above, this may also imply co-funding.

Implementation

The participants will need to come to an agreement on how a project will be implemented and how funds will be disbursed. For example, who will be the lead agency? What will be the governance structure? Ideally, multiple projects can be coordinated within the overall governance structure of the NP-AEEA

Timelines

TORs or RPFs will usually specify the length of time for a project. If the funding is for one year, this will determine the nature of the activities and provide due dates for deliverables. It is important, not only for the proposal, but also for the implementation of the project to divide the project into steps (e.g., preparation, assessment, data collection, analysis, report production, review and evaluation) and to allocate sufficient time to each step. The timelines are also important to coordinate the participation of stakeholders.

Deliverables

Generally, TORs and RFPs require a very clear specification of the deliverables that are expected. They could be very specific such as "an assessment of…", "a report on…", "a database of…", "training on…". Or, they could be less specific such as "improving decision making on…", "integrating…with…".

In either case, the success of the project will be judged on these deliverables. It is important to be very clear on what deliverables the sponsor is expecting.

Sponsors may wish to review progress during stages of the project. Sometimes payments are linked to progress at each stage. In this case, it is important to prepare documents that can be easily reviewed and show progress at each stage. For example, sponsors may wish to review a Table of Contents of a report, then an annotated outline and then a draft.

Sponsors may also require structured progress reports as the project progresses. Resources for this planning, evaluation and reporting should be built into the proposal.

Budget

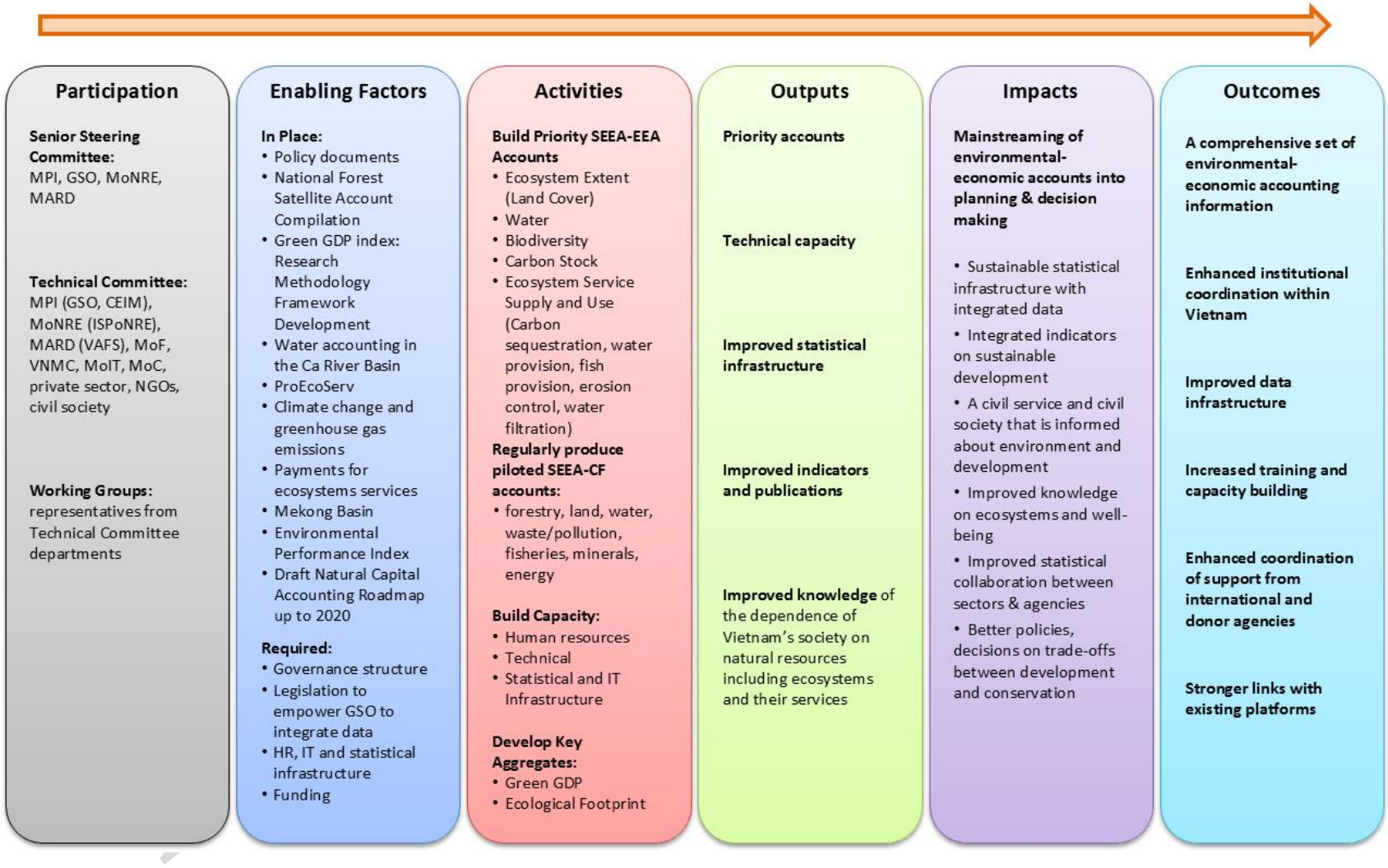
	Year																							
	2015				2016				2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Stage	Prep		Short-term								Medium-term													
Work Package	head count																							
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
FTE																								
Salary ($K)																								
Operations ($K)																								
Total ($K)																								
Annual ($K)					-				-				-				-				-			
Outputs																								

Within the funding limits of the project, it is important to estimate how much work can actually be accomplished. Costs that need to be taken into account are not only the salaries of core participants, but also the "overhead" of administration, capital equipment, data, translation (if necessary), travel, meeting venues, etc.

If this is to be a multi-year project, then a simple project plan (shown below) would help determine who is required at which stage and where other costed inputs are required. This is an opportunity to balance the year-to-year requirements. For example, an activity could be moved from one year to another if the project is expected to have the same cost for each year.

9 VIETNAM - NP-AEEA – INVESTMENT LOGIC FRAMEWORK

Figure 3 Provisional logic model for programme of work



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11. PROPOSALS

1. Technical assistance

National Environment-Economic Accounting is currently a new topic in Viet Nam, especially for policy-making institutes and statisticians. In order to make Environment-Economic Accounting Policy become truth, it is proposed to have UNSD support technical assistance in term of the following basic contents:

a) Develop General Accounting Framework of Environment Accounts for Viet Nam;

b) Provide financial assistance and international consultants for Ministries, Agencies and General Statistics Office in order to collect, aggregate data on natural resources and environment; compile accounts and write analysis reports;

c) Provide supports on IT equipments and soft-ware to develop environment data infrastructure to serve for the development of general information system of Environment – Economic Accounting.

2. Staff training

a) Hold training workshops to provide general knowledge on Environment – Economic Accounting;

b) Provide in-depth training on compiling each Ecosystem account, Carbon account and Land account;

c) Provide training on development of database of Environment – Economic Accounting;

d) Provide training on environment statistical work and Environment – Economic Accounting;