ESA/STAT/AC.301
UNCEEA/10/7a

DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

Tenth Meeting of the UN Committee of Experts on
Environmental-Economic Accounting
New York, 24-26 June 2015

Implementation strategy for the System of Environmental Economic Accounting (SEEA)

Draft paper prepared by UNSD

(for discussion)

I. Introduction

1. The United Nations Statistical Commission (UNSC) at its forty-third session in February 2012 adopted the SEEA Central Framework as an international statistical standard. In 2013, the Commission at its forty-forth session recognized the SEEA Experimental Ecosystem Accounting as an important framework for the measurement of ecosystems condition and services to the economy and human activities and encouraged countries to start experimenting with the new framework. During the same session the Commission adopted the implementation strategy of the SEEA Central Framework which was prepared by a Task Force led by Statistics Netherlands under the auspices of the United Nations Committee of Experts on Environmental Economic Accounting (UNCEEA). The UNSC also requested the UNCEEA to develop a testing strategy for the SEEA Experimental Ecosystem Accounting.

2. This SEEA implementation strategy should be seen as an update of the strategy of 2012 for the SEEA Central Framework in the broader context of the statistical agenda. In particular, the Post 2015 Development agenda and the associated monitoring and reporting on SDG has been further clarified and will be a central component of the work of the statistical community in the next 15 years. The Post 2015 development agenda call for integrated policies on the economy, the environment, society and governance. It needs to be supported by an integrated information system which allows the analysis of trade-offs and broad impacts of such policies.

3. The demand for high quality and timely data will increase. In order to face these demands, the statistical system needs to change is current operations, including the institutional arrangements and the statistical production process through the adoption of a standards-based modernization process. The discussions leading to the Post 2015 Development agenda introduced the concept of data revolution, which was first used in the 2013 report of the High Level Panel of Eminent Persons on the Post 2015 Development agenda, calling for a new initiative to improve the quality of statistics and information available to citizens. The reported 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, in future at least by 2013 all large businesses should be reporting on their environmental and social impacts and government should adopt the SEEA.

4. In 2013 the guidelines on Integrated Economic Statistics were endorsed by the Statistical Commission highlighting the need to move away from the silo approach to a more integrated approach to the production of statistics matched by the reform of the institutional environment.

5. In 2013 and 2014, the Statistical Commission recognized the increased importance of using big data to complement and improve official statistics as well as the importance of linking statistical information to geospatial information, considering the increasing demand of spatially disaggregated statistics with the work of GGIM focusing on promoting the use of geospatial information and developing best practices for legal instruments and technical standards.

6. The SEEA, both the Central Framework and the SEEA Experimental Ecosystem Accounting, has been recognized by the Statistical Commission in 2013 and 2014 as an important framework for informing the SDG. Furthermore, experience in countries has highlighted the important role of the SEEA as a catalyst in bringing together various stakeholders and developing partnerships as well as in the modernization of the statistical production process.

7. In view of the above considerations, the strategy presented in this paper covers both the implementation of the SEEA Central Framework as well as the testing of the SEEA Experimental Ecosystem Accounting. Section II presents the different initiatives closely related with the SEEA. Section III presents the objectives and targets for the SEEA implementation. Sections IV and V discuss

the national and global strategy for implementation and Section VI presents the funding strategy and Session VIII suggests a roadmap until 2020. Session IX presents questions for the Committee.

II. Assessment of existing initiatives and demand for environmental-economic information

Current situation in countries

8. The Global Assessment on the SEEA implementation undertaken by UNSD in 2014, indicated, that 54 countries have established a programme on environmental-economic accounting as part of their national statistical programme and 15 are planning do so in the short term. This represents a 31 percent increase since the global assessment undertaken in 2006. Topics covered differed between developed and developing countries. In developed countries, the choice of accounts to compile, as well as future plans to expand/begin compilation of accounts is shaped largely by EU legislation, covering in the first phase air emissions, environmental taxes and material flows, and in the second phase environmental protection expenditure, environmental goods and services sector, physical energy flow accounts. In developing countries, existing activities and future plans are largely linked to accounts related to water and energy.

9. The assessments clearly indicated that whereas in the EU the focus has been to a large extent physical flow accounts (material flow, energy, air emission accounts) and monetary accounts (environmental expenditures, environmental taxes and subsidies and EGSS), outside the EU the focus has been on natural resources (asset) accounting. This difference in compilation practices may be due to differences in environment related policies. The policy demand in developing countries may be understood from the need for resource management of their endowments of natural resources and specific security issues related to water and energy.

Existing initiatives demanding environmental-economic information

10. In addition to the SDG framework, some relevant policy frameworks that the SEEA can inform are summarized below.

Natural capital accounting (NCA)

11. NCA considers natural capital as an important element in decision making for national development and growth. GDP needs to be complemented by stocks measures in particular of natural resources and ecosystem assets. The Wealth Accounting and Valuation of Ecosystem Services (WAVES) Partnership led by the World Bank and involving many UN agencies, national governments, academia and NGOs has the objective of promoting sustainable development by ensuring that natural resources are mainstreamed into development planning and national accounts. WAVES has formally adopted the SEEA as the underlying statistical framework to inform NCA policies. The pilot countries in which WAVES is engaged, namely Botswana, Colombia, Indonesia, Madagascar, the Philippines and Rwanda are all in the process of implementing selected modules of the SEEA depending on the countries national priorities. The WAVES partnership is also starting to develop regional community of practice to facilitate sharing of experiences.

Green growth/green economy initiatives

12. The green growth strategy is an initiative of OECD to support national and international efforts to achieve green growth. The strategy aims to help countries foster economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which

human well-being relies. It develops a flexible policy framework that can be tailored to national circumstances and stages of development. An important component of the green growth strategy is a measurement framework which provides a set of indicators from green growth.

13. Following the delivery of the strategy in May 2011, green growth has been integrated into OECD analytical work to provide concrete, targeted advice as members and partner countries advance with the design and implementation of green growth strategies. The OECD is building green growth consideration into national policy surveillance, such as Economic Surveys, Environmental Performance Reviews, Investment Policy Reviews and Innovation Reviews.

14. The OECD advocates that indicators for green growth should come from the SEEA, where applicable. OECD has established a Task Force on the SEEA implementation to develop a set of tables and accounts to be used for data collection. Subsoil asset accounts and air emission accounts are currently being collected by OECD from its member countries.

15. The Partnership for Action on Green Economy (PAGE) is a joint initiative of UNEP, ILO, UNDP, UNIDO and UNITAR as a set of services, which will enable countries to transform their national economic structures by shifting investment and policies towards the creation of a new generation of assets, such as clean technologies, resource efficient infrastructure, well-functioning ecosystems, green skilled labour and good governance. PAGE aims to support 20 countries over seven years in building national green economy strategies.

European strategy for Environmental Accounts

16. The European strategy for Environmental Accounts was adopted in 2014. It aims at ensuring that the environmental accounts data from all European countries are harmonized, timely and of adequate quality. The strategy is deeply rooted in the EU policy context, which increasingly demands integrated information on the economy and environment. The relevant policy frameworks that the accounts can inform are the Europe 2020 strategy and in particular the resource efficiency flagship initiative, which the shift towards a resource-efficient, low-carbon economy to achieve sustainable growth, and the 7th Environment Action Programme to 2020. Clearly the SEEA can contribute significantly to analysis and policy formulation in many of these areas. The role of environmental accounting is expected in increase substantially in the future, both directly as provider of data as well as an organizing framework (see the European Strategy for Environmental Accounts)

17. The strategy covers the implementation of the set of accounts covered by regulation. The first set of accounts that countries are required to report on are the air emission, environmental taxes and material flow accounts. The second set of mandatory accounts includes environmental protection expenditures, environmental goods and services sector and physical energy accounts. The strategy also addresses the issue of investing in statistical infrastructure to improve the availability, quality and usefulness of environmental accounts. Additional voluntary modules mentioned that are mentioned in the strategy include water and forest accounts, environmental subsidies and similar transfers and resource management expenditures.

Sustainable Consumption and Production

18. SCP policies and programmes summarized in the Ten Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) are formulated to secure the resource base through resource efficiency. Higher resource efficiency contributes to minimizing directly harmful effects on humans and to reducing pressure on ecosystems and their ability to provide essential goods and services. SCP thus is a critical element in establishing the fundamentals for increasing quality of life for

all (UNEP 2012). Again, the SEEA represents a useful framework to measure SCP and UNEP is taking steps to align the proposed thematic SCP indicators in the context of the SDG process with the SEEA.

Aichi biodiversity targets and National Biodiversity Strategy and Action Plans

19. Aichi biodiversity targets consist of a set of 20 targets organized in 5 strategic goals:

- Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
- Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
- Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

20. Target 2 under strategic goal A refers to integrating biodiversity values into national accounting, as appropriate, and reporting system. The SEEA has been accepted as the statistical framework of reference for this target, but can inform a number of other Aichi targets.

BIOFIN

21. Related to the Aichi biodiversity targets is the Biodiversity Financing Initiatives (BIOFIN) which aims at seeking to address the biodiversity finance challenge in a comprehensive manner – building a sound business case for increased investment in the management of ecosystems and biodiversity. BIOFIN provide a framework for undertaking 'bottom-up' analyses of the biodiversity finance gap and resource mobilization strategies. The SEEA can provide a useful statistical framework to inform the level of expenditures in countries.

Inter-governmental Platform on Biodiversity and Ecosystem Services (IPBES)

22. IPBES provides a mechanism recognized by both the scientific and policy communities to synthesize, review, assess and critically evaluate relevant information and knowledge generated worldwide by governments, academia, scientific organizations, non-governmental organizations and indigenous communities on biodiversity and ecosystem services. A group of experts in conducting assessments of such information and knowledge in a transparent way has been established. IPBES will aim to strengthen capacity for the effective use of science in decision-making at all levels. IPBES will also aim to address the needs of Multilateral Environmental Agreements that are related to biodiversity and ecosystem services, and build on existing processes ensuring synergy and complementarities in each other's work. The SEEA Experimental Ecosystem Accounting is an important framework to inform IPBES and should be considered by the Platform. In addition, advances made in the context of the IPBES expert community will serve as an important contribution to advance the research agenda.

Global Reporting Initiative (GRI) and other sustainability reporting by businesses

23. The Post 2015 development agenda call for businesses to report on their impact on the environment and society. GRI has developed standards for sustainability reporting to help businesses, government and other organizations understand and communicate the impact of business on critical sustainability issues. A large number of large companies reports to GRI and the number is expected to increase. In addition to GRI, there has been an increasing amount of work in the corporate sector to develop accounting approaches for improved corporate risk and financial management. Initiatives

include work by the Natural Capital Coalition, the B Team and financial institutions within the UNEP-Finance Initiative.

24. Alignment of corporate accounting with the SEEA concepts will provide useful to ensure the generation of high quality data at the business level which will translate into high quality data to populate the accounts. Steps are being made to engage the various stakeholders in this area and a technical workshop is planned for the fall this year.

Other initiatives

25. The above constitute a small selection of the thematic policy frameworks that the SEEA can inform. Another set of frameworks that the SEEA can inform include sectoral resources framework such as integrated water resource management, integrated forest resource management, SE4ALL, food security, sustainable tourism, etc.. Through thematic SEEAs such as the SEEA Water, SEEA Energy, SEEA Agriculture, Forestry and Fishery efforts bridges between monitoring frameworks of the thematic initiatives are related to the SEEA.

Analysis of current situation

26. Until present, the global and national policy landscapes have been characterized by individual policy frameworks, often addressing specific thematic areas of concerns with little or no relation with other policy frameworks. This has resulted in a plethora of uncoordinated policies without any consideration of possible tradeoffs. The monitoring frameworks that have emerged to monitor progress for the specific policies have developed independently and often outside the national statistical systems, with specific sets of indicators generated by specific data collection processes. The mandate to carry out such policies as well as monitoring frameworks often resides with different international agencies that have line ministries as entry points at national level. This situation has resulted in isolated policy frameworks related information systems at the global as well as national level.

27. The Post-2015 Development Agenda and the associated sustainable development goals, targets and indicators, marks a shift towards integrated policies to be informed by integrated nationally owned information. This represents a unique opportunity to modernize the national statistical system, moving away from silo policies and data towards an integrated approach. Such modernization is not only desirable to obtain relevant information to inform integrated policies, it is also needed to allow the national system to streamline the data production processes achieving efficiencies in the national statistical system.

28. The rationale for the SEEA implementation is to rationalize the data being collected as a result of different initiatives and organize it in a common framework. While initially this could be done modifying existing data to fit the concepts definitions and classifications and accounting rules, in the medium term a process of harmonization basic data and rationalization and streamlining of the data production process. This process would have to be undertaken in conjunction with the establishment of an institutional environment which allows for data sharing and exchange and close collaboration and cooperation among the partners. In conjunction, this will require the modernization of the IT environment to allow for the exchange of data as well as for accessing, storing, manipulating and modelling data sets. The latter is particular relevant for the compilation of land and ecosystem accounting and requires different capacities that need to be developed in countries.

29. The SEEA, together with the SNA, represents the much needed statistical framework to move towards a system approach for the collection and integration of basic data resulting in high quality statistics and indicators that have been generated using the accounting structure and rules to a set of

standard definitions, classifications and methodologies. This has been recognized by the Statistical Commission as well as in the Declaration adopted by the 63rd plenary session of the Conference of European Statisticians "The role of official statistics in measuring and monitoring the SDGs".

III. Objectives, targets and scope of the implementation strategy

30. The proposed global implementation strategy has the following objectives:

- Adoption of the SEEA as an important measurement framework in support of the information system for sustainable development and for the derivation of Sustainable Development Goals (SDGs) indicators from nationally owned databases
- Mainstreaming the SEEA implementation in countries as part of the modernization of the institutional arrangements and the regular statistical production process
- Establishing technical capacity for regular reporting on core sets of environmental accounting

31. The proposed targets for the strategy for 2020 are outlined below:

- At least 100 countries with on-going, well-resourced programs in SEEA Central Framework and at least 50 countries with on-going, well-resourced programs in ecosystem accounting, to support national decision making.
- Comparable global baseline data and indicators are available to support assessment and monitoring of the relevant UN Sustainable Development Goals.
- International programs and materials are in place to build capability and support ongoing learning.
- Active international research and education mechanisms are established to advance and exchange best practices.
- An updated SEEA on ecosystem accounting is released to establish international standards and best practice.

32. The value proposition of the SEEA is the use of a system approach to information and the provision of an umbrella framework in support of providing a coherent and consistent metadata structure of the thematic and cross-sectoral data. The SEEA thus would serve as the overarching framework embracing the various monitoring frameworks and specific databases to develop an integrated statistical information system for sustainable development. Where relevant and appropriate, existing metadata structures of thematic monitoring frameworks should be aligned with SEEA, although other metadata structures may co-exist for policy and analytical needs.

33. The national statistical offices and the national statistical systems more broadly have a role to play. However considering the broad thematic scope of the implementation strategy, other stakeholders need to be involved ranging from government agencies, NGOs and think tanks as well as the private sector producing and using such data. New partnerships need to be forged in order to ensure a common vision and approach to the implementation of the SEEA in countries.

Scope

34. The SEEA implementation strategy aims at the development of an information system for sustainable development that is multipurpose and serves as a common framework to inform multiple policy frameworks including the Post 2015 Development Agenda and the derivation of SDG indicators.

Therefore, the scope of the SEEA implementation strategy covers both the SEEA Central Framework as well as the SEEA Experimental Ecosystem Accounting.

35. The first implementation strategy adopted by the UN Statistical Commission in February 2013 covered exclusively the SEEA Central Framework. The strategy of the implementation of the SEEA and the testing of the SEEA Experimental Ecosystem Accounting were deliberately left separate given the nature of the different documents with the SEEA Central Framework being a statistical standard and the SEEA Experimental Ecosystem Accounting being not mature yet for standardization or best practices.

36. The Post 2015 Development Agenda calls for an integrated policy framework supported by integrated information. The SDG indicators cover a broad spectrum of policies, ranging from water and energy efficiency, which are the domain of the SEEA Central Framework, to reduction of ecosystem degradation and maintenance of ecosystems, which are the domain of the SEEA Experimental Ecosystem Accounting. An integrated approach to the measurement of the environment call for an holistic implementation strategy covering the measurement of the relationship between the economy and the environment and the contribution of the environment to national wealth as well as the condition of the ecosystems and the supply of ecosystem services, beyond the generation of goods used by the economy, to economic and human activities.

37. Several countries are starting programmes to put in place an information system in support of sustainable development which takes a broad perspective. This is the approach that has been taken by the project "Advancing Natural Capital Accounting" being implemented by UNSD in collaboration with UNEP and CBD and funded by the government of Norway.

38. As a result of the widespread interest in the measurement of ecosystems and the increasing number of initiatives with experimentation, the statistical community is leveraging the scientific community to learn from their experience and to reach in the short to medium term consensus on a small number of methodologies and approaches with the objective of reaching standardization.

39. Initial discussions have started with those scientific agencies and NSOs responsible for the monitoring of ecosystems and biodiversity to assess how the SEEA can serve as the statistical framework for reporting on relevant goals and targets (e.g. Goal 13, 14 and 15) as well as more broadly on the reporting to the three Rio conventions, that is on climate change, biological diversity and desertification.

IV. National implementation strategy implementation of the SEEA

General consideration of the SEEA implementation

40. The International Conference on the Global Implementation of the SEEA, which took place in New York in June 2013[1] agreed on a number of recommendations. These recommendations are summarized below for ease of reference.

41. **Flexible and modular approach –** Countries differ in terms of their specific environmental-economic policy issues, their level of statistical development as well as institutional organization. Accordingly countries may prioritize the accounts they would like to implement over the short to medium term based on policy demands. Countries do not need to implement all accounts at once but should develop a programme for staged implementation of the accounts that fits within the broader national plan.

[1] http://unstats.un.org/unsd/envaccounting/workshops/SEEA_Conf_2013/main.htm

42. **Strategic planning –** Strategic planning is an important tool to guide the development of national statistical programmes closely linked to policy priorities, increase the financial support for investment in statistics and ensure countries will be able to produce the data needed for monitoring their sustainable development plan. Strategic planning calls for the development of strategic implementation plans at the regional/sub-regional level and national plans. At the national level, these plans should be part of the National Statistical Development Plan and closely linked to the policy demands presented in the National Development Plan, the National Sustainable Development Plans, the National Strategy for Biodiversity and Action Plan (NBSAPS), strategies for green economy/green growth, sustainable consumption and production etc. The strategic approach will ensure the sustainability of the exercise as it implies the buy in at the highest level of the government to adopt the SEEA as the statistical framework for sustainable development and possibly resource allocation.

43. **Linking the implementation to policy demands –** The SEEA represents a multipurpose statistical system which supports the derivation of high quality, consistent and coherent indicators as well as analytical applications. It represents the statistical infrastructure in response to policy demands, with the objective of organizing existing information and complementing it with additional information to support policy and decision-making. Priority accounts to be compiled at the national level should be compiled taking into consideration policy demands.

44. **National ownership –** Countries should develop their own implementation strategies and plans which are agreed at the highest level. A coordination mechanism involving the main stakeholders producers and users of information should be established at the country level supported by technical groups working on specific sectoral accounts.

45. **Capacity building** – Countries need to develop capacity to mainstream the SEEA in the national statistical system as well as its application in policy and decision-making. Training programmes appropriate to various audiences and at different levels of difficulties need to be developed to develop a critical mass of experts in the national statistical office as well as in line ministries.

46. **Communication strategy –** The SEEA is a relatively junior statistical system. A proper communication strategy and campaign needs to be developed to raise awareness of the benefits of adopting the system approach as the information system for sustainable development and as the measurement framework for the SDG indicators. Different messages should be developed for different stakeholders, in order to ensure that each community can recognize the benefits of integrating their information in a common information system based on the SEEA.

Approach to implementation in countries

47. The implementation strategy calls for a flexible and modular approach to the SEEA implementation depending on countries policy priorities, data availability, technical capacity and institutional framework. Nevertheless a common approach to the implementation consisting of four phases can be delineated to guide the institutionalization of the SEEA, its compilation on a sustainable basis and its use to inform policies.

Phase I – National Assessment and National Plan

48. The national assessment consists of an in-depth report of the policy situation of the country, the institutional arrangements and legal framework for statistics, and data situation. The report also identifies the on-going initiatives in the countries (e.g. green economy/green growth, WAVES, Redd Plus, NBSAPs, etc.). It also highlights opportunities and risks associated with an SEEA implementation programme. On the basis of the above information and through extended consultation with the various

stakeholders a national plan is drawn outlining the plan to develop an information system in support of sustainable development. The national plan outlines the country policy priorities, develops an institutional framework for the SEEA implementation, consisting of senior representatives of key policy and data producing institutions, identifies the priority accounts to be developed and key stakeholders to involve in the development of each account. The national plan is to be endorsed at the highest level to obtain the go-ahead at the political level with the SEEA implementation.

Phase II – Programmes of work for priority accounts

49. A detailed programme of work needs to be developed for each account. The programme of work will specify the governance of the project, including an interagency steering and technical committee, the role and responsibility of each agency involved, the deliverables of the project and schedule of delivery of the final and intermediate outputs (e.g. type of accounts compiled, release of final results, etc.)

Phase III – Pilot compilation of the accounts

50. The pilot compilation of the accounts involves the production of core accounts on the basis of existing information. The compilation will involve integrating data from various data sources such as environment statistics, energy statistics, and economic statistics into the accounting framework. The basic data serving as input into the accounts often follows definitions and classification that are not consistent with those used in the SEEA or SNA. Moreover the data may not be of high quality.

51. The pilot compilation serves many purposes, including learning how to compile the accounts, understanding issues with data sources, showing results even in a short period of time and lastly developing a proof of concept.

Phase IV – Data quality assessment and plan for sustainable production of the SEEA

52. The pilot compilation serves as the basis for analyzing gaps and overlaps, identifying areas where data need to be strengthened, setting priorities on which data to develop first and to develop a plan for improving the data. A data quality assessment framework may be used to evaluate the quality of the data, namely their integrity, methodological soundness, accuracy and reliability, serviceability and accessibility.

53. The plan would involve harmonization of basic data, review of the business register and suggestion to improve it and design and implementation of new data collection, compilation and dissemination processes. The plan would also cover cost estimates of human and financial resources needed to continue the compilation of the statistics and accounts on a sustainable basis. The plan should fit within the broader scheme of modernizing the statistical system. In that sense the SEEA can be considered as a catalyst for the modernization of the statistical system.

Training and Capacity building

54. A training and capacity building programme should be put in place from the beginning of the project providing a basic understanding of the SEEA and the benefits in adopting it. Moreover, the human resources development program should render a more in-depth understanding of the specific priority modules to be compiled including definitions and classifications, data sources, possible issues to be encountered when integrating the data from different sources, issues of coordination and finally dissemination of the results.

Communication and advocacy

55. Communication and advocacy of the SEEA are an integral part of the implementation strategy in that they are key to support an ongoing dialogue among statistical producers, the various levels of government, the business sector, the academic community and the general public about user needs for official statistics and the progress in meeting those needs. This recurrent communication can be established through targeted workshops, conferences, press releases and promotional material that highlight the benefits of good quality official statistics in general and environmental-economic accounts in particular. These regular engagements between producers of statistical outputs and providers of basic data on one hand and users of environmental economic accounts on the other will reinforce the demand for environmental-economic accounts and its use in decision making leading to a better funded programme mainstreamed as part of official statistics.

V. Global implementation strategy

56. The principle of coordination, monitoring and reporting ensures that the roles of international and regional organizations, other donors and recipient countries are clear and their actions are complementary, effective and efficient. Coordination entails that all stakeholders work towards a common objective within their mandate and an agreed programme of work. Monitoring comprises assessing the efficiency of technical assistance programmes, evaluating lessons learns, and using resources efficiently. Reporting comprises the dissemination of progress made with the implementation and should be target to different stakeholders. Better coordination, monitoring and reporting collectively help meet national and regional goals as well as provide a means to evaluate and to assess the progress of the implementation of the SEEA. Monitoring, reporting and evaluating should also be used to identify risks to the implementation process so that timely interventions can be made to keep plans on track.

57. The number of stakeholders working in the sphere of environmental-economic accounting at the international level is increasing and will likely increase in the coming years. They include agencies whose mandate is development and strengthening of the statistical system, agencies or consortium of agencies whose mandate is thematic and covers the development of monitoring frameworks (e.g. FAO, CBD, UNFCCC, UNCCD, UNWater, UNEnergy, IPBES, etc.), agencies that have a regional or sub-regional mandate (e.g. UN regional commissions, sub-regional bodies such as CARICOM, SPC, Asean, SADC, etc.), agencies that focus more on the use of the accounts in policy and decision-making (e.g. World Bank, UNEP, UNDP, etc.). Although each agency has its own entry point at the country level, strength, mandate and serves different communities, there is often no clear cut delineation of each agency role. This implies that there are many players that are active with different objectives, mandates and at times monitoring frameworks that operate in the space of official statistics.

58. In order to avoid significant overlap and duplication of efforts and to maximize efficiencies in the production of outputs, it is necessary that general architecture for the development for the integrated statistical system is developed whereby each agency has its role and responsibility to collect and compile data according to agreed standards definitions and classifications. The Generic Statistical Business Process Model (GSBPM) provides a standard framework and harmonized terminology to help statistical organizations to modernize the statistical production process, as well as to share methods and components. The GSBPM and related standards based statistical models can also be used to integrate data and metadata standards, as template for process documentation, for harmonizing statistical computing infrastructures and to provide the framework for process quality assessment and improvement.

59. A mechanism is needed to coordinate, monitor and report progress at the sub-regional, regional and international level. The purpose of this mechanism would be to share information on the

development and execution of the SEEA implementation strategy and move towards a common approach to implementation.

60. The UNCEEA proposes to establish a Partnership Group consisting of partners active in the field, including not only international agencies working in the field of statistics, but also, the geospatial community, think tanks, such as Conservation International and IUCN that are active in the field, the business community and donors. This partnership will be responsible for facilitating and stimulating the implementation of the SEEA, ensuring alignment of methodologies and the use of common tools and a common approach to the SEEA implementation in countries. Formal agreements with each partner should be developed, outlining the areas of cooperation. The UNCEEA will be the overall global coordinating body. A proposal for a formal coordination mechanism will need to be developed if this is agreed. Steps are in progress in developing a formal coordination mechanism with some of the UN regional commissions that have adopted the common approach proposed in this paper. Also, work is underway on aligning the indicators proposed to monitor sustainable consumption and production with the SEEA as well as the development of a capacity building programme on SCP to build bridges between the policy and the statistical community and to reach a better understanding of the benefits of adopting a system approach to monitoring SCP. A common template for establishing such collaborations should be developed. A suggested example that is being used with collaboration with the SCP community is presented in the annex.

Tools in support of the SEEA implementation

61. A key element of the implementation strategy is the development of common tools to support countries in the SEEA implementation. Several tools are already available for use by countries and partners.

Technical notes

62. Technical notes are designed to provide countries wanting to start the SEEA implementation initial guidance on the steps to be undertaken to start the implementation. They provide core sets of accounts and tables which would serve as templates for data collection and reporting. The notes also elaborate on data sources and possible issues in compilation as well as the use of the tables for the derivation of indicators, including the SDG indicators. Technical notes on water, energy, EGSS and land are available and additional notes on air emissions and environmental protection expenditures are being prepared. In the next phase additional notes will be prepared. The notes also provide reference information for additional publications that will support the full development of the accounts and provide information on extensions and linkages that can be exploited once the accounts and tables are in place. Furthermore, the notes discuss how the core tables can be used to report on sustainable development goals (SDG) indicators.

Blended learning

63. SEEA CF e-learning training course has developed by the United Nations Statistics Division and GIZ. The purpose of the training programme is to enable participants to acquire knowledge and skills to deepen understanding of the accounting principles and basic data needs for compiling environmental-economic accounts in accordance with the SEEA Central Framework; facilitate experience-sharing among countries; and support countries in setting up a strategy and workplan for SEEA implementation. The e-learning course is followed up by a 4 day in person training which provides a unique opportunity for participants who had already acquired an understanding of basic SEEA concepts to improve their knowledge through practical exercises and discussions on issues regarding implementation. Participants

in this training of trainers programme are then expected to share their knowledge with others in their countries as a follow up to the training received.

Guidelines

64. The SEEA Implementation Guide provides an overview of steps likely to be required to introduce a national programme of work on environmental-economic accounting. It does not provide detailed advice since there are a wide variety of situations and starting points, taking into account national policy priorities, institutional arrangements and statistical development that will impact on the most appropriate implementation strategy. The guide includes a diagnostic tool which is intended to be used to lead relevant parties within a country through a discussion of the implementation process and required steps, including determining priority accounts, and identifying relevant constraints and opportunities.

65. Guidelines for the compilation of water statistics and accounts have been developed to provide country experts and trainers with a comprehensive and reliable set of practical materials to assist staff of National Statistics Offices, Water Ministries and Agencies and other stakeholders in countries, in the compilation of water accounts and statistics in order to develop a monitoring system for water policies. The methodologies presented are part of the System of Environmental-Economic Accounting for Water (SEEA-Water), adopted in 2007 by the United Nations Statistical Commission, and the SEEA Central Framework.

66. Technical guidance document on the SEEA Experimental Ecosystem Accounting has been developed as part of the project Advancing Natural Capital Accounting. It elaborates on the concepts presented in the SEEA Experimental Ecosystem Accounting, in particular concerning the units and linking ecological principles with accounting concepts and methods and provides tables and accounts for the measurements of ecosystem extent, condition and services.

Knowledge platform

67. To support the dissemination of the tools and materials being developed in support of the SEEA implementation and sharing of country experiences, a new knowledge platform for the SEEA is scheduled to be launched in the 2nd half of 2015. The new website will be a more modern platform set up in a way to better meet the needs of its user. One of the major additions to the website will be the creation of forums and message boards to allow for online interactions between those working in environmental economic accounts. Registered participants will have opportunities to pose questions and share experience with colleagues throughout the world. The use of the new platform will allow for further networking between colleagues. It is also expected that this platform will also include a training platform to host the E-learning materials that have been and will be developed in the near future.

Communication and Advocacy

68. The Partnership Group will have an important role to play in promoting the SEEA implementation. Given the strengths and mandates of the various players, it can reach different communities ranging from the statistical, scientific, economic and policy communities as well as sectoral experts in various ministries, academia and think tanks.

69. A number of projects on the SEEA implementation are already under way. These include the following:

- Advancing Natural Capital Accounting, led by UNSD in collaboration with UNEP and CBD (March 2014-October 2015). The project has multiple objectives including:

    - The development national plans for the SEEA implementation, based on national assessments, in 7 pilot countries Bhutan, Chile, Indonesia, Mauritius, Mexico, South Africa and Vietnam;
    - The delivery of training and technology transfer through national and regional training workshops and e-learning courses;
    - Advancing the research agenda on ecosystem accounting and building partnerships with the scientific, academic and think tank communities;
    - Development of guidance document on SEEA Experimental Ecosystem Accounting;
    - Building collaboration with the business community and organization of a seminar.
- Development Accounts project, led by UNSD (2015-2017). Objectives of the project include:
    - Development of national plans for the SEEA implementation in 4 countries: 2 in Africa (Kenya and Uganda) and 2 in Asia (Malaysia and a country to be determined)
    - Compilation of priority accounts on a pilot basis
    - Development of common tools for the compilation
- Development Account projects (2015-2017) , led by UNECLAC and UNESCAP and UNESCAP Pacific respectively
    - Development of national plans for the SEEA implementation and implementation of selected accounts in the following 13 countries: Ecuador, Colombia, Jamaica, Paraguay, Uruguay, Fiji, FMR, Maldives, Palau, Samoa, Seychelles, Tonga and Vanuatu

70. Considering that the projects have similar objectives, it has been agreed that a strong coordination between ECLAC, ESCAP and UNSD will be implemented with monthly teleconferences, sharing of common tools, using common consultants, sharing of results, and joint missions to the pilot countries. To support this project training of trainers programmes are being rolled out in both regions.

VI. Strategy for funding

71. The strategy for funding the SEEA implementation should be based on a cooperative and partnership model. It should largely build on comparative advantages of all stakeholders and partners. An active funding strategy complementing the implementation strategy should be developed in particular taking advantage of the renewed recognition of the central role of data and information in the Post 2015 Development Agenda and the importance of the SEEA as statistical framework for the SDG indicators.

72. Various sources of funding are viable:

- National sources of funding should be sought by countries to support the implementation of the new standard, the SEEA Central Framework as well as the SEEA Experimental Ecosystem Accounting. The national plan should serve as important document to make the case for additional funding (a template of a national plan used for the ANCA project is attached in the annex).
- International agencies providing technical assistance and financial support and other donors are requested to make resources available for technical assistance for the SEEA implementation and the development of basic economic and environmental statistics in countries. International agencies may develop joint fundraising to support the SEEA implementation.
- National statistical offices with experience on SEEA compilation should provide technical support to the implementation of the SEEA with funding being raised directly from national development agencies. Examples of terms of references are attached in the annex.

- All agencies involved should create synergies with other similar training and capacity building programme to avoid duplication of efforts.

73. The limited resources should be focused on assistance of countries that have shown commitment for the SEEA activities through their own initial funding to assist them in mainstreaming the SEEA, rather than ad-hoc activities with little perspective of continuing on a sustainable basis.

VII. Roadmap for the SEEA implementation

74. This section outlines proposed steps towards achieving the objectives and targets. It is proposed that the work towards 2020 follows three streams: Implementation and testing at country level; Use and application; and Advancing towards common standards. Work under Stream 1 should be led at the country level using the SEEA Central Framework, the SEEA Experimental Ecosystem Accounting and supporting guidelines and materials as a base for implementation and testing. While this work would be led at country level, support for countries taking on the challenge of testing and implementation should be supported by relevant international efforts, especially in terms of specialized training and in the use of global datasets at national level.

75. Work under Streams 2 and 3 will require leadership at the international level, especially in terms of collaboration and engagement across different initiatives. The work under these two streams is likely to benefit from targeted collaborations across relevant agencies and experts – for example in the areas of land cover classification, harmonization of basic data with the accounting concepts and terminology and work on ecosystem accounting such as classification of ecosystem types and services and measuring biodiversity.

76. An important connection may be drawn between the three streams of work such that findings from country level applications can be drawn into the development of solutions to broader measurement and vice versa. The development of appropriate mechanisms to co-ordinate these knowledge exchanges will be an important aspect in advancing the Global Strategy.

Stream 1 - Implementation and testing at national level

77. This stream requires a focus on national level work to establish the SEEA program. The ambition within this stream is to support the development of national plans and coordination mechanisms depending on the circumstances within each country. The development of these plans should build on the lessons from country examples and be closely linked to national development plans.

78. According to the priorities set, countries will focus their efforts in implementing the core tables and accounts using existing data and modeled data as appropriate to take advantage of big data and global data bases.

79. In the medium term a strategy to develop databases within an integrated statistics programme should be developed.

Stream 2 – Applications and indicators

80. This stream requires the dissemination of the results of the accounts, in particular relevant indicators such as those informing the relevant SDGs. In the medium term, it is hoped that the SDG indicators will be aligned with the SEEA concepts and methods, thus making the compilation of the SEEA part of the reporting framework on SDGs.

81. In addition to indicators it is important to also promote other applications and modelling based on input-output/supply and use tables.

Stream 3 – Advancing towards common standards

82. This stream requires a focus on continual learning by combining skills and experience across disciplines. The power of environmental accounting lies in its integration of thinking from multiple disciplines. These connections need to be strengthened and advocated using language that resonates to the different communities. In addition, outstanding questions need to be addressed in close collaboration with the specific expert communities.

83. In the case of the SEEA Experimental Ecosystem Accounting, one of the objectives is to move towards the elevation of some of the accounts (e.g. carbon) to the level of a standard and developing best practices for other accounts.

VIII. Questions to the Committee

1. *Does the UNCEEA agree with the assessment of the current situation as presented in the strategy [Sections I and II]?*
2. *Does the UNCEEA agree with the objectives, targets and scope of the implementation strategy [Section III]?*
3. *Does the UNCEEA agree with the approach to national implementation[Section IV]?*
4. *Does the UNCEEA agree with the approach to global implementation[Section V] and in particular with the suggested proposal for establishing partnerships and draft TOR presented in Annex I and II?*
5. *Does the UNCEEA agree to the strategy for funding [Section VI]?*
6. *Does the UNCEEA agree with the proposed roadmap until 2020 [Section VII]?*

Annex I

Example of Terms of Reference
for Aligning Theme XXX Indicators with the SEEA

1. In the context of the post-2015 Development Agenda, the Open Working Group (OWG) on the Sustainable Development Goals (SDGs) put forward in July 2014 a proposal comprising 17 goals and 169 targets. The proposal includes THEME XXX as an integral component of the SDGs. Achieving the SDGs, and in particular the THEME XXX component of the SDGs, will require a set of indicators to monitor the interface between the economy, environment and society. In this regard the UNEP discussion paper on [TITLE OF PAPER PRESENTING THE THEMATIC INDICATORS IN SUPPORT OF THE SDG AND BEYOND] aimed to identify a set of SDG indicators for THEME XXX.

2. Moving forward, it is important that these indicators are fully consistent with the System of Environmental-Economic Accounting (SEEA). The SEEA Central Framework was adopted an international statistical standard by the United Nations Statistical Commission at its 43rd session in March 2012. The SEEA represents the first statistical standard for measuring the environment and its relationship with the economy, including the measurement of flows between the environment and the economy. In addition, the SEEA Experimental Ecosystem Accounting has been recognized as an important framework for measuring ecosystems condition, ecosystem services and ecosystem degradation with countries being encouraged to experiment with the framework. The medium term objective is to develop best practices on SEEA Experimental Ecosystem Accounting with selected modules being elevated to statistical standard (e.g. carbon accounting).

3. Basing THEME XXX indicators on the SEEA will both ensure that: a) the statistical underpinnings of the THEME XXX indicators are based on an integrated accounting approach to ensure methodological soundness, and b) the THEME XXX indicators are in line with international standards of best practice to promote quality and comparability.

4. The objective of the work is to develop an implementation strategy for THEME XXX indicators based on a system approach. The implementation strategy will present in a language familiar with the thematic community the need for developing an information system on THEME X which fits within the broader context of the development of integrated statistical systems in countries. It will discuss the policy needs for integrated information and the institutional environment. It will also highlight the need for capacity building on the relevant policy applications of the SEEA as well as on the thematic data development. It will then define suggested indicators according to the SEEA standard. To assist countries to compile and report on SEEA compliant indicators, the paper will develop a short term strategy to compile SEEA compliant indicators using existing data, models and estimation and a medium term strategy to develop the relevant data on a sustainable basis and mainstream it as part of official statistics.

5. The work will also include the development of training materials to be transformed into E-learning on the basic concepts of the SEEA and how it relates to the thematic areas should also be developed. This training will focus the basic concepts to ensure that the thematic community has some basic understanding of the SEEA so as to be able to follow the existing training modules on the SEEA in general and various themes.

6. The work will be undertaken under the auspices of the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA) and the body responsible for the thematic issue, and will serve as input to the work of the Inter-Agency and Expert Group on SDG indicators (IAEG SDG).

7. The services of consultant(s) are required to prepare the implementation strategy as well as to undertake the technical work on indicators definitions and data sources.

Annex II

Example of Terms of Reference
With NSOs to support the SEEA implementation

Background

1. With the adoption of the SEEA Central Framework as the international statistical standard for measuring the environment and its relationship with the economy, the United Nations Statistics Division (UNSD) has initiated a programme to help countries implement environmental-economic accounts and supporting statistics. The SEEA has been recognized as an important framework for monitoring progress in the context of the post-2015 development agenda and as a catalyst for countries to move towards integrated statistical systems and adapt to changing data landscapes including the use of non-conventional sources such as geo-spatial data. The United Nations Statistical Commission (UNSC) at its 46th session recognized the SEEA as an important statistical framework for monitoring sustainable development goals indicators related to the environment and its relationship with the economy.

2. The post-2015 development agenda focuses on a multidimensional set of goals, encompassing the economy, the environment, society and governance issues. The increasing demand for policy to be grounded in evidence and based on a more integrated approach underlines the need for an improved system of information that can support policy decisions by adequately representing all facets of sustainability and their interconnections in an integrated way. The UNSC recognized that SEEA contributes significantly to advancing a multidimensional information system for the post 2015 development agenda. It can provide an internationally recognized and standardized approach to integrating measures of the environment into a system of information fully consistent with the System of National Accounts (SNA) that is used to measure the economy. The integration of economic and environmental information allows for the derivation of coherent indicators and the use of environmental-economic modelling to develop footprint-type indicators (consumption based) and evaluate the trade-offs and impacts of policies on the economy and the environment.

3. A preliminary analysis undertaken by the United Nations Statistics Division shows that indicators derived from SEEA would be of relevance to the measurement of progress made against 13 of the 17 sustainable development goals proposed by the Open Working Group of the General Assembly on Sustainable Development Goals. It should be stressed that, in its report entitled "A new global partnership: eradicate poverty and transform economies through sustainable development", the High-level Panel of Eminent Persons on the Post-2015 Development Agenda also recognized the relevance of SEEA and the use of accounts. It also recognized the indicator framework developed by the Sustainable Development Solutions Network, as described in its report entitled "Indicators and a monitoring framework for sustainable development goals: launching a data revolution for the sustainable development goals".

Proposed areas of collaboration

4. The programme of work of implementing the SEEA includes, among others, regional and national training workshops to build capacity and missions to countries to help in initiating a programme of work on environmental-economic accounts and supporting statistics. There are a number of constraints that countries face when embarking on programme of work to implement the SEEA, the most important of which are the lack of human and financial resources and cooperation among the various stakeholders. There is a clear need to build regional and national technical capacity through development of practical manuals, development and delivery of training using e-learning tools, in person training workshops, in country technical assistance. In addition, considering that environmental-economic accounting is a new area of statistics, a number of issues are on the research agenda. The contribution of experts from national statistical offices from countries who have experience in the implementation of the SEEA is a vital component of the programme. In this regard, a number of areas of potential collaboration between UNSD, other international organizations and national institutions are listed in the following section.

5. Development of materials in support of the SEEA implementation in countries (training materials and exercises and compilation guidelines)—as part of the implementation of the SEEA there is a need to develop training materials such as presentations, guidelines and exercises as either stand-alone documents or to be used during training workshops. Experts are needed to draft and review training material.

6. Serving as resource person in regional and national training workshops—the aim of the workshops is to raise awareness and increase technical capacity in countries to implement the SEEA. Resource persons would deliver technical presentations. It is expected that multiple training workshops per year would take place in the next coming years at different level of difficulty. With the increase use of distance learning tools, there is also a need for experts to facilitate online discussions and virtual seminars on different accounting concepts.

7. Assisting in missions to countries implementing the accounts—providing direct assistance to countries is key to ensuring agreement on a national plan of work for the accounts and the implementation of such plan. Countries often require assistance in setting up the national mechanism for implementation, drafting a national plan and carrying out an assessment, the compilation of the accounts on a pilot basis and move towards integrated statistical production process. Experts from national statistics offices are in a position to contribute to all the facets of in-country work including conducting and drafting of the assessment report, sharing insights on the institutional mechanisms, national work plan and assist with developing an integrated data production process.

8. Assisting countries during implementation—there is a need to follow up (via email/phone) on a regular basis with implementing countries' NSO to ensure that technical questions that arise during compilation of accounts are answered by technical experts. In this regard and following up on country missions, staff from statistical offices with accounting experience would serve as a resource for some implementing countries to assist with technical questions.

Advancing the research agendas of the SEEA Central Framework and the SEEA Experimental Ecosystem Accounting – Both the SEEA Central Framework and the SEEA Experimental Ecosystem Accounting have research agenda comprising in particular work on classifications and compilation issues. In

particular the SEEA Experimental Ecosystem Accounting is still at an initial stage of development and would need to be revised when best practices on selected accounts and module will emerge as a result of experimentation. Technical experts can help in advancing the research agendas of the SEEA Central Framework and SEEA Experimental Ecosystem Accounting.

Annex III

Template of National Plan
(used for the 7 pilot countries of the ANCA project)

Contents

Acknowledgements:
This work was funded by the Norwegian Agency for Development Cooperation, with technical input provided by United Nations Statistical Division, United Nations Environment Programme through its The Economics of Ecosystems and Biodiversity Office, and Secretariat of the Convention on Biological Diversity.

1 Executive Summary

.....

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), Rockstrom (2009), TEEB (2010), Cardinale 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 (Rio +20, post-2015 development agenda).

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 sustain future human wellbeing. We have much integrated information concerning national and global economic activity where, via the standard economic accounts and 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.

Both the SEEA Central Framework and SEEA Experimental Ecosystem Accounting use the accounting concepts, structures, rules and principles of the System of National Accounts. The SEEA Central Framework 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 Experimental Ecosystem Accounting 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 Experimental Ecosystem Accounting 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 Experimental Ecosystem Accounting 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, firstly 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. Secondly, a brief overview of the building blocks and methods needed to implement the NP-AEEA is presented. The aim of this section is to provide generic guidance on a standardised approach based on current frameworks, system, methods and guidance and training material. Thirdly, the details of a national program of work are outlined 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. This section is specifically tailored to the needs of country using the building blocks and methods outlined in part two. 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 three 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 which 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 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 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 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 future – at latest by 2030 – all large businesses should be reporting on their environmental and social impacts, and governments should adopt the UN's System of Environmental-Economic Accounting with help provided to those who need help to do this.

In 2013 the Guidelines on Integrated Economic Statistics was published 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 recognised the significance of an integrated approach for increasing the consistency and coherence of economic statistics in order to enhance the quality and analytical value of the information the statistics contain for short-term, annual and benchmark economic statistics 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 are a set of economic statistics that 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 pose challenges to statistical offices to produce integrated economic, environmental and socio-demographic statistics.

In 2014 the report 'A world that counts – mobilising the data revolution for sustainable development[2]' published by the IEAG [3] calls for a better coordination of statistical programmes developed by international organisations. 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".*

3.2 Country Perspective

...

3.3 Environmental-Economic accounting needs assessment

...

4 NP-AEEA – High Level Outcomes

.....

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 is presented. 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 integrated approach to environmental-economic statistics is supported by three main building blocks: the SEEA CF and SEEA EEA as the conceptual frameworks, supporting institutional arrangements and an integrated statistical production process[4]. The building blocks are interlinked and mutually reinforcing structures for setting up integrated statistical systems.

An important aspect of the building blocks is their link to needs assessment and high level outcomes sections above. The building blocks with be combined the NP-AEEA – Investment Logic Framework section below. The building blocks include:

1) Mainstream the environmental-economic accounting

[2] http://www.undatarevolution.org/
[3] Independent Expert Advisory Group on a Data Revolution for Sustainable Development.
[4] 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).

2) Rationalise and integrate institutional arrangements
3) Integrate the data, tools and statistical production process
4) Ecosystem Accounting Experimentation[5]

Blocks 1-3 are the core and required to achieve the overall aim and block 4 captures the aim of continuous improvement including research and development, testing and experimentation to build on SEEA EEA. The building blocks are combined with the Generic Statistical Business Process Model (GSBPM[6]) shown in Figure 1 below. The GSBPM describes and defines the set of business processes needed to produce official statistics. It provides a standard framework and harmonised terminology to help statistical organisations to modernise 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).

Institutional Framework

Quality Management / Metadata Management

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Specify Needs	Design	Build	Collect	Process	Analyse	Disseminate	Evaluate

Sub-processes to support the delivery of each phase

Institutional Framework

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. Also, some sub processes will be revisited a number of times forming iterative loops, particularly within the Process and Analyse phases.

GSBPM should therefore be seen more as 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.

[5] Experimentation has been added as an additional building block in support of SEEA EEA and the experimental nature of work needed.
[6] http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5.0

5.1 Mainstream the environmental-economic accounting

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 structure it in stages of advancements, 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 familiarisation across government agencies and academia. It is an umbrella block of work that both 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 ecosystem values (as services and assets).

These processes combine available knowledge from many disciplines and agencies including national statistics and accounting, management of 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 mainstreaming, adaptation and application of the available knowledge can occur.

5.2 Rationalise 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 impacts so many agencies to be adopted by government requires very careful assessment of current institutional arrangements and possible impacts on those arrangements. The GSBPM recognises 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 the landscape for economic reasons. 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. Further, the movement towards a more integrated and streamlined processes for the collection and publication of data provides opportunities for lowering the overall cost and increasing its use and efficacy.

This does not imply having fewer agencies, but it does require a rationalising of the standards used for data collection and greater formal integration of the systems to share data in real time where appropriate. It is important to recognise 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 national statistic offices.

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 ecological data collection and collation. There is a need to harmonise concepts and rationalise the principles of both disciplines in order to maintain the integrity of both areas. In many instances there is going to be a need to extend or modify current paradigms in order 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 timeliness and resources. In the medium to long term the aim 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 following by the development of a strategic investment plant. Further, it is also possible to achieve change through further research and experimentation.

5.4 Ecosystem Accounting Experimentation

There is much 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.

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 (achieves) the building blocks and the longer term aim of country.

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

6.1 Conceptual frameworks for environmental-economic accounting

If agencies outside the national statistical institutes are involved in the compilation and dissemination of official statistics, then for the creation of integrated system of statistics, it is necessary to create partnerships. The first step is to engage all agencies in the discussion of the necessity and the mutual gains of such a system. 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 experience of the pilot. Initial design and testing will require attention to:

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

6.2 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 programme, 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 the outputs satisfy the needs of the stakeholders.

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

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

6.3 Environmental-Economic accounts production process

A part of the GSBPM design phases 3-4 is to understand the mechanics on delivering on a new system. This includes (but is not limited to):
“Build” and “collect” phases:

- Data collection (or generation – through sampling, inventories/surveys, detailed process-modelling, remote-sensing applications, course-process modelling);
- data harmonization (processing, quality control, imputation);
- accounting inputs estimation;
- 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 will work in practice. The SEEA-EEA provides a core 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:

Ecosystem accounting methodological issues:

- Accounting classifications[7], with standardised item definitions and measurement methods.
- Country specific classification of ecosystem assets
- Units for ecosystem accounting
- Environmental indicators and aggregates
- Upscaling and downscaling
- Valuation
- Validation data and specific quality criteria need to be developed to formally track progress

These methodological issues will be addressed in collaboration with an international community of practice on 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.

Accounting architecture

It is very important to check the timely availability of the micro-data form the primary and secondary sources and the time available for the processing. A part of the experimentation should be a check of the design with the business architecture and the software architecture to get an expert view on the consequences for the IT-environment (running time, storage etc.). If the experimentation shows bottlenecks, one must make sure that they can be solved (for acceptable costs) 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 programme is feasible and acceptable for all involved partners.

Information and decision support tools and architecture

Outside of traditional statistical systems there are many systems in place for the collection and collation of data for decision making. These include geographical information systems, biophysical models, agency data based, 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 work or adaptation. This area of experimentation is very important because there are significant opportunities to leverage of current system and save resources.

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

- The specification of ecosystem assets and services used in payments for ecosystem services programs[8]
- Land offset programs for environmental purposes[9]
- Land use change programs for carbon sequestration[10]

[7] Accounting classification enables the translations between existing classifications

[8] http://www.depi.vic.gov.au/environment-and-wildlife/environmental-action/innovative-market-approaches/ecomarkets

[9] http://www.trustfornature.org.au/

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

Moving from experimentation to (national) production

In some instances there has been informal experimentation in data collection, analysis and dissemination to meet some policy need. Under the GSBPM it can be assumed that Phases 1 and 7 are being undertaken but are not linked to Quality Management / Metadata Management – for instance many countries currently produce environmental reports on an ad hoc basis. Adopting the GSBPM approach requires formalising the other phases

At the national level there are many agencies with national data coverage. However it is often incomplete or inconsistent in its application due to a lack of resources and a clear medium to long term program of work. Often these are opportunities that can be described as the "low hanging fruit" (low cost and easy to take forward in the current national policy context). These include very well established local applications of data collection; collation and reporting that can be easily rolled out at the national level. Alternatively, they may be existing national approaches that need strategic investment to bring them up to an acceptable and consistent standard. It is important that the experimentation in ecosystem accounting is informed by national needs and vice versa. Often experiments can save money and time if conducted appropriately to inform the needs for a national approach.

7 NP-AEEA – Investment Logic Framework (ILF)[11]

The ILF provides a structured approach to analysing the suite of optional activities that may be undertaken to achieve the desired outcomes (See Figure 2 below). 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.

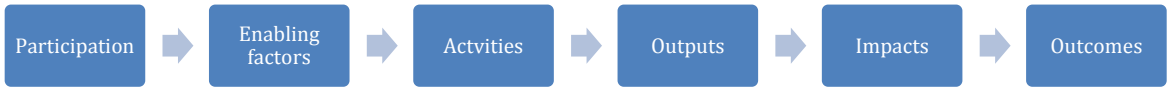

Figure 2. Investment Logic Framework

Participation & Enabling Factors – it is important to identify those that need to participate and 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 generally require some type of change which participants have to undertake and or adopt before statistical development activities commence. It may also require the allocation of resources in order to achieve an enabling factor so it is important for participants to be very clear from the outset what their involvement may mean.

Activities & 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. In order for one output to be achieved may require several activities. It is important to ensure that each activity can be linked to an output to ensure the relevance and timing of activities and finally outputs can then be linked to impacts and outcomes.

Impacts & Outcomes - Impact evaluation measures the difference between what happened with the programme and what would have happened without it. It answers the question, "How much (if any) of

[10] http://www.un-redd.org/aboutredd/tabid/102614/default.aspx
[11] Appendix XXX provides further detail on how to take elements of the ILF

the change observed occurred because of the programme or activities?" Outcome evaluation measures the programme results or outcomes. These can be both short and long-term outcomes.

7.1 Participation & enabling factors

....

Coordination with development partners

....

7.2 Enabling factors

.....

7.2.1 Planning and coordination

.....

7.3 Activities and Outputs

.....

7.3.1 Building priority accounts based on policy needs

.....

7.3.2 Capacity building

.....

7.3.3 Human resource capacity

.....

7.3.4 Infrastructure

.....

7.3.5 Development of key aggregates

.....

7.4 Impacts & Final outcomes

.....

Investment Logic Framework