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**The use of a systems approach for the derivation of indicators in the
context of the Post-2015 Development Agenda: The role of the System of
Environmental-Economic Accounting**

Draft paper prepared by UNSD

(for discussion)

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Draft

Section 1: Introduction

The outcome document “The Future We Want” of the Rio+20 United Nations Conference on Sustainable Development called for the development of sustainable development goals (SDGs). In particular world leaders “recognize[d] that progress towards the achievement of the goals needs to be assessed and accompanied by targets and indicators, while taking into account different national circumstances, capacities and levels of development.”¹ The United Nations in close collaboration with member states and other relevant partners has commenced an inclusive process to develop and agree on the goals and targets that will drive the development agenda.

The ability of countries to effectively, efficiently and sustainably measure progress towards meeting the targets and goals through the use of relevant indicators is a key component of the sustainable development goals. In this context, the outcome document of the Rio+20 Conference “recognize[d] the need for broader measures of progress to complement gross domestic product in order to better inform policy decisions, and in this regard we request the United Nations Statistical Commission, in consultation with relevant United Nations system entities and other relevant organizations, to launch a programme of work in this area building on existing initiatives.”

One of the initiatives that is relevant to the discussions on the measurement of progress of sustainable development goals is the System of Environmental Economic Accounting 2012 (SEEA) which has been adopted by the UNSC as an international statistical standard. The SEEA is a system for organizing statistical data for the derivation of coherent indicators and descriptive statistics to monitor the interactions between the economy and the environment and the state of the environment to better inform decision-making. The UN Statistical Commission at its 45th Session in 2014 recognized the SEEA as an important statistical framework for the Post 2015 Development Agenda and the Sustainable Development Goals (SDGs) indicators.

The aim of this paper is to contribute to the ongoing discussion on the best approaches to meeting the data demands growing out of the SDG process. In particular, a set of principles are proposed that can serve as guidance towards the mainstreaming of the SEEA and implementation of a systems based approach to the compilation and dissemination of information by countries. This paper builds upon the recommendations of Eurostat and draft

¹ “The future we want”, outcome document of the Rio+20 United Nations Conference on Sustainable Development, para. 250.

report of the UN Sustainable Development Network. It contains a short summary of the current status of the process of developing the sustainable development targets and goals and how the SEEA provides the statistical framework for measuring relevant indicators. Section 2 discusses the demands for and the resulting advantages of having an accounting framework used as the measurement framework for the SDG indicators and the resulting integrated approach to data production. Section 3 discusses basic principles that should be followed when producing indicators on the SDGs in so far as they can be derived from the accounts of the SEEA. In section 4, the assessment of indicators in broad terms is discussed. Section 5 concludes by providing a list of recommendations and actions that the UNCEEA might wish to consider. Annex 1 is provided with an example of how proposed energy goals and targets can benefit from using an accounting framework in the measurement of baselines and progress towards goals and targets. Annex 2 lists SEEA relevant targets of the working document of OWG.

Section 2: Policy demands for the SEEA as a measurement framework for the SDGs and other initiatives

The need for an accounting approach to measuring progress toward sustainable development has been articulated in numerous international agreements. In Agenda 21, one of the outcome documents of the UN Conference on Environment and Development, it was noted that:

"A first step towards the integration of sustainability into economic management is the establishment of better measurement of the crucial role of the environment as a source of natural capital and as a sink for by-products generated during the production of man-made capital and other human activities....A program to develop national systems of integrated environmental and economic accounting in all countries is proposed."

More recently, the Rio+20 outcome document, called for holistic and integrated approaches to sustainable development and recognized the importance of integrated planning and decision making at national, sub-national and level. This call has been reinforced by the Secretary General Report and High-Level Panel Report on the Post-2015 Development Agenda in 2013 (HLP Report) and in the current discussions of the Open Working Group on the SDGs. In particular the proposed target (a) of goal 9 "Manage natural resource assets sustainably" in the HLP Report calls on all governments and major companies to publish and use economic, social and environmental accounts. Similarly the zero draft of the working document of the Open Working Group calls for countries to "explore the possibility of a broader system of capital accounting looking beyond GDP and incorporating social, human and environmental capital" and as a means of implementation includes the following: "by 2030 countries progressively introduce broader measures of progress beyond GDP into national accounting, with supportive statistical capacity building in developing countries".

The recognition of the need for integrated social, economic and environmental information in support of decision-making processes is widespread. In this context, the SEEA 2012, together with the System of National Accounts, provide an important framework for monitoring and accountability related to the post-2015 agenda considering its focus on integrated economic, environmental and to some extent social information.

At the regional level, in 2011, the European Statistical System Committee adopted a report on well-being and sustainable development which noted that in the context of environmental sustainability:

“A large number of indicators can be derived using the system of integrated environmental and economic accounts, which has the core advantage of being directly compatible with the system of national accounts, thus allowing for an integrated environmental-economic analysis to measure the impacts of the economy on the environment and vice versa.”²

The European Commission has:

“recognised the need to supplement existing indicators with data that incorporate environmental and social aspects in order to allow more coherent and comprehensive policy making. To that end, environmental economic accounts offer a means of monitoring the pressures exerted by the economy on the environment and of exploring how these might be abated. Environmental economic accounts show the interaction between economic, household and environmental factors and consequently are more informative than national accounts alone. They provide a significant source of data for environmental decisions...”³

Furthermore, the European commission has noted that the SEEA

“brings together economic and environmental information in a common framework to measure the contribution of the environment to the economy and the impact of the economy on the environment. It provides policymakers with indicators and descriptive statistics to monitor these interactions as well as a database for strategic planning and policy analysis to identify more sustainable paths of development.”

The need for a systems approach to the derivation of indicators has also been articulated in a number of other international initiatives and documents with SEEA being recognized as the main statistical framework for measuring natural capital in various policy initiatives. These include, but are not limited to, OECD’s Green Growth Strategy, the World Bank-led Wealth Accounting and the Valuation of Ecosystem Services (WAVES) partnership, the Valuation and Accounting of Natural Capital for Green Economy (VANTAGE) initiative launched by the United Nations Environment Programme (UNEP), the UNEP-led Green Economy programme, the Convention on Biodiversity (Aichi Biodiversity Target 2) and the UNEP-led initiative on the economics of ecosystems and biodiversity (TEEB). OECD’s Green Growth Strategy notes that:

“Measurement issues constrain the full and timely production of green growth indicators. While there is a substantive amount of economic and also environmental data, it is often difficult to combine them due to differences in classifications, terminology or timeliness. A first and crucial ingredient of the measurement agenda is thus to develop and populate a consistent environment-economy accounting framework. The System of Environmental and Economic Accounting (SEEA) will provide such a framework. Measurement efforts should be placed within this framework so as to maximise consistency and international comparability.”⁴

² European Statistical System, Sponsorship Group on Measuring Progress, Well-being and Sustainable Development, Final Report adopted in November 2011.

³ Regulation (EU) 691/2011 on European environmental economic accounts.

⁴ Towards Green Growth: Monitoring Progress, OECD Indicators. Available from <http://www.oecd.org/greengrowth/48224574.pdf>

Section 3: Meeting policy demands through a principled approach

Given the need articulated by policymakers for environmental economic accounts to support evidence based integrated policy making and measure progress towards meeting sustainable goals via indicators, there is a need for the statistical community to reach a common understanding on a set of principles on how to best meet this need. This section discusses principles that should inform the compilation of SDGs by using environmental economic accounts where relevant.⁵

Principle 1: *Indicators should be derived from a consistent and comprehensive statistical framework and be based to the greatest extent possible on international standards, recommendations, and best practices (e.g. national accounts, environmental economic accounts).*

Environmental economic accounts are consistent with the national accounts making it possible to link macro-economic data as well as employment information through labour accounts and socio-economic information through social accounting matrices with environmental information. This consistency allows for linkages to be made to supply and use tables and input-output tables of national accounts leading to a more complete understanding of the relationship between the environment and the economy. An added advantage of using an accounting framework to present environmental-economic information is the possibility of consumption based analysis and indicators which could be an important component of the SDGs.

Principle 2: *Environmental economic accounts should be the priority source to provide a range of important aggregates and indicators which can logically be defined and derived either within the SEEA's accounting structure or by combing the environmental economic accounts with other consistent sources such as the national accounts and other supplementary information.*

One of the major advantages of the accounts is their direct link and consistency with economic data and the SNA. This allows for the computation of ratio indicators such as resource efficiency and resource productivity. The accounts, in and of themselves also provide a number of important accounting aggregates such as net emission totals, and waste recycled by economic activity. Important indicators such as expected life length of natural resource assets can also be directly calculated from the accounts. While basic environmental data provide necessary inputs to the accounts and to the computation of some indicators, using a systems approach allows for the integration of the basic data with other sources of information. Such integration is key to better contextualize information on the environment.

Principle 3: *Basic statistics that are relevant for the compilation of the accounts should be collected in a manner that allows for their integration into environmental economic accounts.*

⁵ Based on the Report of the Task Force Environmental Sustainability of the Sponsoring Group on Measuring Progress, Well-being and Sustainable Development

Using an accounting framework has numerous other advantages including: reducing costs and increasing efficiencies in the production of indicators; allowing for the derivation of indicators in a data poor environment; and, allowing for the integration of already collected information to produce indicators. Often, it is the case that countries can use already available data to compile the environmental economic accounts.

Even in cases where countries do not have detailed environmental-economic information, the application of an accounting framework to already collected data makes it possible to use the information for multiple purposes and derive indicators. When an accounting framework is in place, it is also possible to identify data gaps and cross validate/quality check information. Resources can then be allocated in a more efficient and targeted manner to close the data gaps and/or improve the quality of the data. This is broadly aligned with Principle 9 of the Fundamental Principles of Official Statistics recognizing that “[t]he use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all official levels.” Furthermore, the zero draft of the OWG document calls for countries to “progressively introduce expanded measures of progress beyond GDP into national accounting, with supportive statistical capacity building in developing countries.” The implementation of the SEEA framework by countries would be the major component of meeting this target.

Principle 4: *Indicators should allow, where relevant, for disaggregation by economic activity and spatial disaggregation.*⁶

Disaggregated information is necessary to track progress towards achieving sustainable development since some goals and targets place particular emphasis on certain groups. Using a systems approach makes it possible to link different sources of information in a manner that would allow for disaggregation. Furthermore, using harmonized definitions and classifications when collecting data across themes allows for disaggregation of information in order to meet policy demands.

Principle 5: *Indicators need to be attainable, feasible and timely; they should be policy relevant, easy to communicate and interpret by users.*

This principle is echoed in the UNSDSN report which calls for “clear and straightforward” indicators that are “simple to compile and interpret”. Indicators need to be framed in a way that makes them attainable and feasible. This implies that the terms used in defining the indicators themselves should be clear; in particular, where relevant, terms used in formulating the indicators should be easily translatable into statistics (e.g. using terms that are defined in statistical standards and classifications).

The relevance of indicators hinges on, among others, timeliness, and ease of communication and interpretation. Indicators reported with a lag of more than one year risk being dismissed as irrelevant simply due to the delay in reporting. Reliable estimates and approximations

⁶ Within the SEEA, disaggregation by household and individual characteristics (e.g. gender, age etc.) is also possible.

using coefficients from an accounting framework may be used to provide more timely indicators. Similarly, ease of communication and interpretation are important for the uptake and success of indicators especially given that SDG indicators will not only be used to track progress but also raise awareness among the public at large and help define national priorities.

Closely linked with the principle above and with the work of statistical offices are also the notions embodied in having **SMART** indicators (**specific, measurable, achievable, relevant and time bound**) which was in part discussed above as well. Starting from the latter, indicators need to be relevant and time bound in order to inform policy and decision making. They should be specific and measurable, based on international standards and where relevant on systems based standards such as the SNA and SEEA.

Section 4: Indicators in the broader context

In the process of refining goals and targets, a number of criteria have been proposed to assess the goals and targets. These criteria consider the extent to which the proposed goals and targets are transformative, universal and integrated; they also include the notions that the targets should also be specific, measurable, achievable, relevant and time bound (SMART). Even though these criteria have been developed to assess goals and targets from a largely policy viewpoint, they are also useful in assessing indicators that will be used to set baselines and measure progress towards meeting the targets of the sustainable development goals from a statistical perspective.

The concept of **integration** is at the core of the environmental economic accounting, allowing for the combination of monetary and physical data on flows and stocks. Two levels of integration are relevant: one is the integration of the indicators among themselves to ensure proper interlinkages and that the economic, environmental and social components of sustainable development are properly reflected; and the other is using an integrated framework to derive the indicators. These two notions feed into each other. An integrated framework allows for the derivation of indicators across the three dimensions of sustainable development. Similarly the need for information to compute indicators that are themselves linked makes it necessary to have an accounting framework in place.

The **transformative and universality** criteria are key to ensuring the attainability and feasibility of indicators. Indicators should address systemic issues in a cross cutting manner in order to drive sustained progress toward SDG. They should promote equity and contribute towards sustained growth across all countries.

The implementation of systems based approach for the compilation of indicators can serve as a catalyst for **transforming** a country's statistical system at large to better meet the ever increasing demand for data and information. Using the SEEA as a starting point, traditional statistical processes can be redesigned to become more integrated and efficient and to yield more timely and disaggregated data. The use of administrative sources as well as non-traditional sources such as "big data" can be improved to provide more immediate, regular and consistent statistical information. The harmonization of procedures and methods

(including the use of standards where relevant) for collecting, compiling, disseminating and analysing information across the statistical system allows for efficiency gains and makes it possible to better link social, economic and environmental information. Furthermore it allows for closer collaboration and sharing of experiences among countries, in particular south-south collaboration.

Environmental issues are often global in nature and as such the comparability of indicators related to the environment is crucial. Therefore it is important that the indicators are **universal** in nature applying to developing and developed countries. When implementing a systems approach to statistical information, countries can also compile core tables and accounts, making it possible to compare progress among countries across time at a more detailed level. The core table and accounts should be supplemented by additional information that might be necessary in order to compile indicators. Such supplementary information however should be viewed in the context of a systems approach and be integrated with other sources of information.

Section 5: Conclusions

The advantages of using a systems based approach to the compilation of indicators are clear. The integration of information allows for linkages between environmental and economic data and provides unparalleled insights into the interactions between the economy and the environment. In this context the UNCEEA may wish to consider the proposed principles in section 2. It may also wish to consider how best to communicate these principles to the Open Working Group.

Annex 1: An example—Energy related targets, goals and indicators.

In this annex further details are provided on how a systems approach using the SNA/SEEA can be utilized to best meet the information needs for the goals, targets and indicators related to energy⁷. The proposed goals and targets from OWG build upon those of the HLP report. The table below shows the clear links between the two.

HLP Report	OWG zero draft-June 2014	SEEA
7a. Double the share of renewable energy in the global energy mix	7.2 double the share of renewable energy in the global energy mix by 2030 7.3 double the global rate of improvement in energy efficiency by 2030 7.4 by 2030 increase by x% globally the share of clean energy technologies, including sustainable biomass and advanced cookstoves	Physical flow accounts contain information on energy flows by energy product Physical flow accounts can be easily linked to SNA data since the classifications used are the same Linked to OWG zero draft 7.2. Environmental activity accounts provide information on energy technologies which can be augmented with supplementary data
7b. Ensure universal access to modern energy services	7.1 by 2030 ensure universal access to sustainable modern energy services	Supplementary data on access to energy
7c. Double the global rate of improvement in energy efficiency in buildings, industry, agriculture and transport		Data on value added by ISIC and data on energy use as presented in the SEEA physical flow accounts; note that buildings is not a standalone category of ISIC; it would be helpful from a measurement perspective if targets and goals were formulated in a way that allows for linking of categories to statistical classifications (e.g. the term buildings as

⁷ While a number of goals are related to energy in the broader sense, our focus here is on those goals directly related to the energy sector.

		used here does not correspond to a clearly defined group within ISIC)
7d. Phase out inefficient fossil fuel subsidies that encourage wasteful consumption	7.5 by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest	Data on taxes and subsidies linked with physical flow data from can be used to trace the relationship between subsidies and use of different energy products
	7.6 by 2030 expand and upgrade as appropriate infrastructure for supply, transmission and distribution of modern and renewable energy services in rural and urban areas, including with a view to doubling primary energy supply per capita for LDCs	Supplementary SNA data on investments in energy infrastructure; physical flow data to determine supply of primary energy per capita

Using the environmental economic accounts provides relevant information for tracking progress towards meeting all of the goals and targets listed in the preceding table. Supply and use of energy by type of resource is tracked over time in the accounts; this information is also disaggregated by supplying and using industries which is necessary for the computation of energy efficiency measures. As part of the accounts information is collected in a coherent manner on taxes and subsidies for the energy sector and energy products, making it possible to track the relationship between fuel subsidies and fuel consumption. SEEA can inform a number of important elements that are necessary to properly understand the policy implications of indicators on access. For example energy accounts contain a wealth of information on the efficiency of production and consumption of energy, capital investments by industry (in particular the energy sector) and stocks, flows and depletion of mineral and energy resources such as coal and gas.

All these pieces of information once combined can provide unparalleled, powerful and coherent insights into not only the current state of energy access but also into how to best structure policy for present and future generations. The advantage of using the details in the SEEA accounts is that users not only get a better understanding of the current state but also the necessary information as to how and why a given aggregate or indicator is at a particular level.

Annex 2: SEEA relevant targets of the working document of OWG

A 30-member Open Working Group of the General Assembly was mandated by the Rio+20 Outcome document to prepare a proposal on SDGs for consideration by the Assembly at its 68th session (Sept. 2013 – Sept. 2014). The Open Working Group was established on 22 of January 2013 by decision of the General Assembly. It meets on a regular basis to discuss a working document which contains inputs from countries and other relevant groups on focus areas and targets for the SDGs. The statistical community has contributed to the work of the OWG by providing statistical notes on measurement aspects of the issues discussed by the OWG.

The list below summarized the SEEA relevant targets as of the June 2014 zero draft of the working document. For one target in each goal details are provided on how the SEEA can inform the proposed target.

Proposed goal 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture

2.3 by 2030, substantially increase small-scale food producers' incomes and productivity, including small family farmers, pastoralists and fishers, with a particular focus on women

2.5 by 2030, develop food systems that are more productive, sustainable, resilient and efficient, and minimize adverse human and environmental impacts without compromising food and nutrition security

2.9 achieve by 2030 protection and sustainable use of agricultural biodiversity, including through enhanced use and application of indigenous practices and local and traditional knowledge, and through agricultural research and development related to agro-biodiversity and diversity of food

Using the SEEA to inform 2.3: As part of the SEEA accounts, information is provided on resources used by different sectors of the economy, including agriculture. This can be linked with information from the national accounts on value of agriculture production as well as other supplementary information on physical quantities of production. Information can also be disaggregated by small and large scale food producers.

Proposed goal 6. Secure water and sanitation for all for a sustainable world

6.1 by 2030, provide universal access to safe and affordable drinking water, adequate sanitation and hygiene for all

6.2 by 2030 provide universal access to safe and affordable sanitation and hygiene including at home, schools, health centers and refugee camps, paying special attention to the needs of women and girls

6.3 by 2030, improve water quality by significantly reducing pollution, eliminating dumping of toxic materials, and improving wastewater management by x%, recycling and reuse by y%

6.4 by 2030, improve water-use efficiency by x% across all sectors

6.5 implement integrated water resources management, including appropriate trans-boundary co-operation

6.6 ensure sustainable extraction and supply of fresh water, and by 2020 protect and restore ecosystems and aquifers that provide water-related services

6.7 by 2030 decrease by x% mortality, and decrease by y% economic losses caused by natural and human-induced water-related disasters

6.8 provide adequate facilities and infrastructure, both built and natural, for safe drinking water and sanitation systems, for productive uses of water resources and for mitigating the impacts of water-related disasters

Using the SEEA to inform 6.4: The water accounts provide the necessary information to measure progress towards achieving water use efficiency. In particular, the accounts contain water use data for each sector of the economy (by ISIC) and data on value added by sector.

Proposed goal 7. Ensure access to affordable, sustainable, and reliable modern energy services for all

7.1 by 2030 ensure universal access to sustainable modern energy services for all

7.2 double the share of renewable energy in the global energy mix by 2030

7.3 double the global rate of improvement in energy efficiency by 2030

7.4 by 2030 increase by x% globally the share of clean energy technologies, including sustainable biomass and advanced cookstoves

7.5 by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest

7.6 by 2030 expand and upgrade as appropriate infrastructure for supply, transmission and distribution of modern and renewable energy services in rural and urban areas, including with a view to doubling primary energy supply per capita for LDCs

Using the SEEA to inform 7.3: From the energy accounts, energy efficiency indicators can be calculated by industry.

Proposed goal 8. Promote strong, inclusive and sustainable economic growth and decent work for all

8.10 promote greater resource efficiency of economic activities, including through sustainable supply chains, according to national circumstances and capacities

8.11 support the development of quality, reliable, sustainable and resilient infrastructure for transport, energy, water and communications, in particular in developing countries with a focus on access for the rural and urban poor

8.16 explore the possibility of a broader system of capital accounting looking beyond GDP and incorporating social, human and environmental capital

Using the SEEA to inform 8.16: The SEEA contains is the standard for producing internationally comparable statistics on the environment and its relationship with the economy.

Proposed goal 9. Promote sustainable industrialization

9.9 upgrade the technological capabilities of industrial sectors in developing countries, including in middle income countries, and improve industrial resource efficiency by accelerating the development, transfer and adoption of environmentally sound technologies and processes

9.11 by 2030 retrofit x% of existing industries with clean technologies and environmentally sound industrial processes to achieve y% energy and z% resource-efficiency improvement, with all countries taking action, developed countries taking the lead and developing countries following a similar pattern taking into account their development needs and capabilities.

Using the SEEA to inform 9.9: Calculation of resource efficiency indicators by industry can be done through the SEEA accounts. Furthermore, environmental activity accounts provide information on the use of environmentally friendly technologies

Proposed goal 10. Reduce inequality within and among countries

Reduce inequality among social groups within countries:

10.7 ensure the availability of high-quality, timely and disaggregated data to ensure monitoring of progress for marginalized groups and people in vulnerable situations

Using the SEEA to inform 10.7: Through the use of supplementary information collected based on a systems approach, SEEA data can be disaggregated, among others, by gender, age and income

Proposed goal 11. Build inclusive, safe and sustainable cities and human settlements

11.5 by 2030, reduce the environmental impacts of cities and improve the quality of environment in cities

Using the SEEA to inform 11.5: Changes in land cover/land use over time can be used to see land is converted from one form to another

Proposed goal 12. Promote sustainable consumption and production patterns

12.2 by 2030 achieve sustainable management and efficient use of natural resources to enhance human welfare within the carrying capacity of ecosystems

12.3 significantly improve the resource efficiency of economic activities and decouple economic growth from environmental degradation, with all countries taking action, developed countries taking the lead, and developing countries following a similar pattern taking into account their development needs and capabilities

12.4 promote sound management of chemicals and hazardous waste in accordance with agreed international frameworks, and by 2030 significantly reduce the releases of chemicals and hazardous wastes to air, water and soil

12.5 by 2030 reduce by x% per capita waste through prevention, reduction, recycling and reuse

12.6 by 2030 at least halve per capita food waste at retail and consumer level, particularly in developed countries and countries with high per capita food waste

12.7 by 2030 redouble efforts to create a culture of sustainable lifestyles, including through education, awareness raising, sustainability information on products and services, policies and incentives

12.8 by 2020 create economic incentives and scientific and technological capacities that enable and promote sustainable consumption and a circular economy

12.9 by 2030 increase by x% the number of companies, especially publicly listed and large companies, reporting on corporate social and environmental responsibility, including integrated reporting

12.10 by 2030, increase the share of private sector actors incorporating sustainable development principles in their business practices, including sustainable supply chains, with due regard to the circumstances and capacity needs of micro- and SMEs

12.11 by 2030 increase the share of sustainable products and services in public procurement, including through competitive and transparent procurement processes

Using the SEEA to inform 12.3: One of the strength of the SEEA framework is the ability to measure decoupling indicators. For example, decoupling indicators for various environmental flows such as water, energy, carbon dioxide emissions, nutrient balances, and solid waste can be derived using the information in the SEEA accounts

Proposed goal 13. Promote actions at all levels to address climate change / Build a climate change goal based on the outcome of COP21 of the UNFCCC

13.4 by 20xx introduce instruments and incentives for investments in low-carbon solutions in all relevant sectors

Using the SEEA to inform 13.4: The environmental activity accounts contain information on emission permits and taxes and subsidies.

Proposed goal 14. Attain conservation and sustainable use of marine resources, oceans and seas

14.1 by 2030, reduce by x% marine pollution of all kinds, including from land-based activities

14.2 by 2020, sustainably manage, restore and protect marine ecosystems from destruction, including by strengthening their resilience, and support relevant scientific research

14.4 by 2020, effectively regulate harvesting and end overfishing to restore by 2030 fish stocks to ecologically safe levels that can produce maximum sustainable yield

14.5 support sustainable small-scale fisheries and aquaculture, including by providing equitable access of small-scale and artisanal fishers to fisheries and markets

14.8 By 2020, conserve at least 10% of coastal and marine areas, including through establishing effectively managed marine protected areas, consistent with international law and based on best available scientific information

14.9 by 2020, eliminate subsidies which contribute to overcapacity and overfishing, and refrain from introducing new such subsidies, taking into account the need of developing countries, notably least developed countries and SIDS

14.11 implement integrated and participatory coastal management to increase resilience of coastal ecosystems

Using the SEEA to inform 14.4: The asset accounts for aquatic resources provide information on changes in stocks of aquatic resources. Depletion measures can also be calculated from the accounts.

Proposed goal 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss

15.1 by 2020 halt the loss of all biodiversity, and protect and prevent the extinction of threatened species

15.2 by 2020 ensure conservation and sustainable use of ecosystems, with particular attention to wetlands, including through restoration of at least 15 per cent of degraded ecosystems

15.3 maintain genetic diversity of both cultivated plants, farmed and domesticated animals and their wild relatives including through effective cooperation of national institutions

15.4 by 2030, ensure the implementation of sustainable management of all types of forests and of mountain ecosystems

15.5 by 2030 reverse the loss of and enhance forest cover worldwide, increase reforestation by x%, including by providing adequate incentives for developing countries

15.6 by 2030, halt and prevent land degradation, reclaim land affected by desertification and drought, and improve land productivity and soil quality

15.8 end poaching and trafficking of endangered species, and end demand and supply of illegal wildlife products

15.9 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and by 2020 control or eliminate the priority invasive species

15.11 integrate natural resources and biodiversity values into national and local planning, development processes, and accounts

Using the SEEA to inform 15.6: Land cover/land use accounts can be used to track changes over time on land degradation.