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Improvement of environment statistics in the context of sustainable development and green economy policy in Asia and the Pacific

Note by the secretariat

Summary

The Committee on Statistics at its second session in December 2010 recognized the need for developing the statistical capacity of all countries in the region for providing a basic range of environment statistics. The present document introduces a list of concrete actions and highlights opportunities for Asia-Pacific countries towards achieving this goal. Reflecting the outcomes of the recently held United Nations Conference on Sustainable Development (Rio+20), the present document focuses on environment statistics in the context of sustainable development and green economy policies. Indicators for monitoring sustainable development and assessing green economy policies will require not only the production of environment statistics of good quality, but also the integration of these statistics with economic and social measures in a coherent and systematic way. The actions proposed herewith include: advocacy and technical assistance with the implementation of the United Nations System of Environmental-Economic Accounts (SEEA) and other internationally agreed standards and guidelines; establishment of a regional network of experts to encourage knowledge-sharing; and development of an online knowledge centre on green economy measurement at ESCAP.

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I. Purpose and background

- 1. Development of evidenced-based sustainable development strategies and policies relies on available and reliable indicators that cover the three development pillars: social, economic and environment. Decisions related to climate change mitigation and adaptation, management of natural capital and preservation of the life-sustaining capacity of the planet can be monitored and evaluated only with appropriate statistics. Consequently, there is a need to improve the measurement of environmental quality and integrate environment statistics with economic and social measures for evidence-based assessments of sustainable development and green economy policies.
- 2. In December 2010, the Committee on Statistics at its second session recognized the need for developing the statistical capacity of all countries in the region for providing a basic range of environment statistics by 2020 (E/ESCAP/CST(2)/9). Across Asia and the Pacific, however, a lack of availability of environment statistics persists, and many countries do not have sufficient indicators for monitoring their national resources, factors that affect the quality of their environments and impacts of changes to the environment on economic and social well-being.
- 3. At the global level, there are a number of recent initiatives related to international standards and guidelines for the compilation of environment statistics and the integration of environment statistics with economic and social statistics. As a result of these new developments, national statistical agencies have a significant collection of reference materials and a general framework for producing reliable and internationally comparable indicators. Nevertheless, achieving implementation of the available international standards and guidelines in many ESCAP member States will require addressing some

critical capacity constraints, including, among other things, limited resources and lack of technical expertise in managing and interpreting existing data on the environment. Thus, a cooperative regional effort could be an effective means to assist member States to raise the capacities of their statistical systems towards achievement of the Committee on Statistics 2020 goal for environment statistics. The purpose of the present document is to help facilitate a discussion by the Committee on Statistics on initiating new activities towards greater regional cooperation on integrated environment statistics.

II. Recent global developments

A. Outcome of 2012 United Nations Conference on Sustainable Development, "The future we want"

In July 2012, more than 120 political leaders and about 50,000 other participants, including government officials and members of civil society and the private sector, gathered at the United Nations Conference on Sustainable Development (Rio+20). The Rio+20 participants reaffirmed a global commitment towards sustainable development, including through green economy policies, and reaffirmed the importance of the natural environment as a critical input into well-being.1 The outcome of Rio+20 has resulted in increased urgency for improving statistical capacity for producing environment statistics, for integration of environment statistics with information on the other development pillars, and ultimately, for the production of internationally comparable indicators of sustainable development. Specifically, the Rio+20 participants committed to build on existing mechanisms to improve the availability of reliable, relevant and timely data. They recognized the need for broader measures of progress beyond gross domestic production (GDP) and improved environmental data, including space-technology-based data, in situ monitoring, and reliable geospatial information. Noting, in particular, the important role of the regional commissions, the Rio+20 outcome called on the United Nations system to address the need for broader measures of progress and to support developing countries to achieve sustainable development.

B. Framework for Development of Environment Statistics

- 5. In 2010, the Statistical Commission at its forty-first section endorsed a programme of work for the revision of the United Nations Framework for the Development of Environment Statistics (FDES).² An expert group representing countries from all regions and different stages of development was established and has since been working on an updated framework and a core set of environment statistics (CSES). FDES provides a foundation for production of basic statistics that underpin the environmental pillar of sustainable development. The main objective of FDES and the associated CSES is to help improve the quality, availability and comparability of environment statistics for multiple purposes, including compilation in environmental-economic accounts. The revised FDES organizes environment statistics according to six core components:
 - (a) Environmental conditions and quality;
 - (b) Environmental resources and their use;

See General Assembly resolution 66/288 of 27 July 2012.

² See *Official Records of the Economic and Social Council, 2010, Supplement No. 4* (E/2010/24-E/CN3/2010/34), chap. I, sect. B, decision 41/107, subpara. (c).

- (c) Emissions, residuals and waste;
- (d) Disasters and extreme events;
- (e) Human habitat and environmental health;
- (f) Environment protection, management and engagement.
- 6. CSES provides a reference to a target for policy-relevant environment statistics production, which, in turn, offers guidance for prioritizing data collection. It will be accompanied by methodological guidance for its compilation, thus improving international comparability. Both FDES and CSES have been reviewed through a pilot exercise carried out by more than 20 countries and through a global consultation process. The final, revised version of FDES and CSES, a plan for their implementation, will be presented for adoption by the Statistics Commission at its forty-fourth Session in 2013.

C. System of Environmental-Economic Accounting

- 7. The first version of the United Nations System of Environmental-Economic Accounting (SEEA) was produced in 1993 in response to a suggestion in Agenda 21, the plan of action set at the first United Nations Conference on Environment and Development, which was held in 1992.³ A multi-year consultative process of revision of SEEA was initiated by the Statistical Commission in 2006, with the aim to raise its status to an international standard. At its forty-third Session, the Statistical Commission agreed to adopt the 2010 SEEA central framework as the first version of the international standard for environmental-economic accounting,⁴ thus bringing the associated environment statistics, and its relationships to economies, clearly within the scope of official statistics. In addition to the central framework, SEEA includes part II on experimental ecosystem accounts and part III on extensions and applications (both are still under development).
- 8. SEEA is the response of the international statistical community to meet the policy demands for broader measures of economic growth, well-being and sustainable progress of societies. In particular, it addresses the ever increasing policy demand for more and better data on the interaction between the economy and environment and the stocks and changes in stocks of environmental assets. These integrated measures allow policymakers to evaluate such aspects of economic-environmental relationships as the productive and efficient use of natural inputs, sustainable patterns of production and consumption, environmentally related production and employment, and depletion and conservation of natural resources.
- 9. The Statistical Commission encouraged member States to implement SEEA.⁵ Approaches to its implementation will vary depending on national priorities, capabilities and resources. SEEA is organized by types of resources and other related topics, thus allowing for its application in a step-wise manner and according to the priority information needs of each country. For example,

³ See Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex II.

⁴ See Official Records of the Economic and Social Council, 2012, Supplement No. 4 (E/2012/24-E/CN3/2012/34), chap. I, sect. B, decision 43/105, subpara. (b).

⁵ See *Official Records of the Economic and Social Council, 2010, Supplement No. 4* (E/2010/24-E/CN3/2010/34), chap. I, sect. B, decision 41/105, subpara. (g).

many countries have thus far elected to first prioritize compilation of accounts for water or for energy. International and regional agencies and countries with more advanced statistical practices were encouraged to assist countries in establishing statistical and institutional capacity for SEEA implementation. As the body responsible for coordination across environmental-economic accounting programmes and for promoting implementation of the standard, the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA) is developing a global implementation strategy, which will be presented to the Statistical Commission on its forty-fourth session, which will be held in February 2013.

- 10. International support for the implementation of SEEA will need to target the multiple stages of the statistical production and compilation process, including the production of the basic environmental data and the creation of an institutional context that helps facilitate integration across data sources. Some reference materials to assist with the implementation are already available and catalogued in the Searchable Library of Publications on Environmental-Economic Accounting and are available on the website of United Nations Statistics Division. The secretariat, in collaboration with other partners, could further support the availability of relevant reference materials, such as through development of new training tools and further compilation of good practices in the region.
- 11. The Wealth Accounting and the Valuation of Ecosystem Services (WAVES) partnership, a global capacity-building programme that supports the implementation of SEEA, has been launched in selected countries. Led by the World Bank, WAVES is a partnership that involves multiple United Nations agencies, governments, non-governmental organizations, and international and academic institutions. Its key objectives are to promote the practice of environmental-economic accounting in countries and provide assistance in integrating this practice as a tool to inform national policy and development planning in selected pilot countries.

D. Organization for Economic Cooperation and Development Measurement of Progress and Well-being

12. In recent years, concerns have emerged about a gap between the scope of aggregate economic indicators commonly used to assess the state of economies, such as gross domestic product (GDP), and the actual priorities and conditions as experienced by the general public in terms of the economic and social well-being of individuals. This includes, for example, the fact that GDP does not accurately reflect the scale of depletion and degradation to natural capital. The Organization for Economic Cooperation and Development (OECD) has been working to address these concerns by developing a new conceptual framework for measuring progress and well-being that goes beyond the traditional and material conditions of prosperity and includes sustainability and quality of life factors, such as health, opportunities for education and social connections, and environmental quality. Besides contributing research and analysis on new conceptual frameworks and proposed statistical measures, OECD has been encouraging broad exchanges of ideas through regional conferences and through the World Forum on Statistics, Knowledge and

⁶ http://unstats.un.org/unsd/envaccounting/ceea/archive/.

The Government of the Philippines is an "implementing partner" of WAVES. The Governments of Australia and Japan are also involved in the partnership by way of sharing experiences of their existing environmental-economic accounting programmes.

Policy. The fourth such forum, which was held in New Delhi in October 2012, focused on measuring well-being for development and policymaking.

13. As a part of this initiative, OECD has also attempted to address the more specific challenge of measuring "green growth". In 2011, it launched Towards Green Growth: Monitoring Progress, a publication which presents a set of 25 indicators proposed to reflect the main aspects of green growth. SEEA is designated in this publication as the measurement framework required for the integration of data for producing the indicators. Thus, in line with growing demand to provide data for new indicator sets related to sustainable development and green economy policies, national statistical systems need to raise their capacities to create integrated information systems based on SEEA.

E. Ulaanbaatar City Group

The National Statistical Office of Mongolia has led a process to create a United Nations "city group", which will focus on statistics for economies based on natural resources. The Ulaanbaatar Group held its first meeting in August 2012. Representatives of 13 countries (including nine ESCAP member States) and three international organizations participated in the meeting, which set up a work programme towards achieving greater harmonization of methodologies across countries, particularly for the measurement of the economic, social and environmental impacts of the mining sector. A steering group for the Ulaanbaatar Group will be co-chaired by Mongolia and Australia. It is expected that the Ulaanbaatar Group will play a leadership role, both for Asia and the Pacific and globally, in identifying international best practices in statistical measurement for economies that rely heavily on the extraction of natural resources. Similar to other United Nations city groups, the Ulaanbaatar Group is expected to provide a platform for exchanging ideas and experiences on the state-of-the-art tools and comparable methodologies for official statistics.

F. Intergovernmental Panel on Biodiversity and Ecosystem Services

The Intergovernmental Panel on Biodiversity and Ecosystem Services 15. (IP-BES) was established in the Busan outcome⁹ of the third ad hoc intergovernmental and multi-stakeholder meeting on biodiversity and ecosystem services, which was held in Busan, Republic of Korea, from 7 to 11 June 2010. Inspired in part by the work of the International Panel on Climate Change (IPCC) on climate change mitigation and adaptation policies, IP-BES aims to serve as "an interface between the scientific community and policy makers in order to build capacity for and strengthen the use of science in policy making". 10 It was established as an independent intergovernmental body that focuses on government needs. The functions envisioned for IP-BES include: identifying and prioritizing key scientific information and relevant tools and methodologies for policymaking; performing regular and timely assessments of knowledge on biodiversity and ecosystem services and their interlinkages; and assisting in identifying and responding to priority capacity-building needs in countries for an effective science-policy interface. Based on their role as independent bodies that aim to support public policy development based on scientifically sound measures, official statistical agencies are important stakeholders of the work of IP-BES. The development by the international

⁸ OECD, Towards Green Growth: Monitoring Progress, 2011.

⁹ UNEP/IPB ES/3/3, annex.

www.ipbes.net/about-ipbes.html.

statistical community of SEEA Part II on experimental ecosystem accounting will also be closely relevant to IP-BES functions.

III. Indicators in Asia and the Pacific for Sustainable Development and Green Economy Policies

A. Green Economy Indicators in Asia and the Pacific

- 16. The use of the green growth concept as a strategy towards achieving environmentally sustainable economic growth was adopted at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, which was held in 2005, 11 and reaffirmed five and one-half years later at the sixth Ministerial Conference on Environment and Development in Asia and the Pacific (E/ESCAP/MCED(6)/11). Since 2005, several countries have started developing related policies and action plans. Among these initiatives, Cambodia has drafted a national green growth road map, Viet Nam has introduced an environmental tax targeting fossil fuels and the Republic of Korea has declared low carbon green growth as a national vision and strategy.
- 17. Indicators are essential to support these efforts with regard to monitoring progress, raising awareness, and supporting policy assessment and decision-making. Several countries and organizations have taken the initiative to meet this need. For example, China has developed a composite indicator, namely the Resource and Environmental Performance Index (REPI), and has adopted bold targets for energy, resource efficiency and air pollution reduction, and India has announced plans to incorporate ecological values into national accounts.
- 18. Green growth and green economy-related indicators identified to date can be grouped into three main categories. The first category relates to ecoefficiency and decoupling indicators. Eco-efficiency refers to the intensity of natural resource use and emissions in production processes. Decoupling denotes a process by which economic growth is achieved by lower levels of resource inputs and emissions. Such a framework includes indicators of greenhouse gas intensity of production and consumption, energy or material intensity, and water use intensity. The OECD framework on green growth also includes related measures of labour productivity and multifactor productivity. The United Nations Environment Programme has proposed a similar analysis per sector. The Republic of Korea has applied the OECD framework to present and analyse 23 indicators, mostly related to eco-efficiency. The sector of the content of the con
- 19. A second range of indicators assesses the dimensions of "green transformation" as well as economic opportunities and policy responses. These indicators may be used to consider not only the evolution of the share of green investment, jobs and output, but also, as discussed in a paper published in 2010 by the European Commission, "to identify the sources of 'green growth' and

Economic and Social Commission for Asia and the Pacific, *The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific*, 2005 (ST/ESCAP/2379) (United Nations publication, Sales No. E.05.II.F.31), annex I.

United Nations Environment Programme, Towards a Green Economy, 2011.
Available from www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf.

Jae Won Lee, Ho Seog Jung and Tae Jik Lee, Korea's Green Growth based on OECD Growth Indicators (Direct of Statistical research institute, 2012). Available from http://kostat.go.kr/portal/english/resources/2/1/9/index.static.

the relevant policy intervention to lift barriers to [it]". ¹⁴ This category includes enumerations of environmentally related activities of government, such as environmental taxes, subsidies and other policies.

- 20. The third category refers to indicators that help to monitor the progress towards overall societal objectives in relation to environmental quality. This range of indicators contains indicators on the relationships between environmental information and health, such as access to safe drinking water and exposure to air pollution. It also includes information for assessing exposure to risks from natural disasters.
- 21. These green growth indicators can be further improved through demonstrating the links to the functioning of the economy and, in particular, to the specific policymaking challenges faced by developing countries. ESCAP and the Australia Commonwealth, Scientific and Industrial Research Organisation (CSIRO) have initiated a joint project to identify appropriate green growth indicators in support of sustainable development for Asia-Pacific countries that can be analysed through macroeconomic modelling.
- 22. In the first phase of the collaboration between ESCAP and CSIRO, a conceptual framework for green growth indicators was developed through a pilot study. The results of the pilot study were discussed with policymakers and other stakeholders in November 2012. In subsequent phases, the partnership plans to expand its discussion to include natural resource flow accounts for materials and waste, energy and emissions, and water and for producing indicators of consumption and production patterns. This discussion aims to provide decision makers with information about the drivers of changes in natural resource use and resource efficiency, and allow for investigation of different kinds of policy interventions that may help steer Asia-Pacific economies towards green economic development.
- 23. This work benefits from prior collaborative efforts with UNEP and CSIRO. These efforts have produced a regional database on material flows and resource productivity. The database covers material inputs of economic processes, including biomass, fossil fuels, metals and minerals from the domestic environment and from imports. It has been used to examine the regional patterns of resource use and resource productivity. The online database, has helped government agencies, researchers and practitioners to monitor changes in the patterns and rates of resource use as economies grow. As awareness of the need for greater resource efficiency increases, these data will "help governments, policy researchers and all interested stakeholders to 1. develop a better understanding of how economic growth patterns influence resource use; 2. evaluate the impacts of policies that have been adopted in the past; and 3. develop effective strategies to minimize resource use through targeted sustainable consumption and production policies and actions".
- 24. Green growth indicators described under the project will be consistent with the System of National Accounts (SNA) and SEEA, and thus be based on internationally comparable methodology. The long-term benefits to national policymaking will depend on compliance to these standards at the national levels, and thus also enhanced capacity for the implementation of SEEA and the active use of the database and modelling platform developed.

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Joan Canton, Ariane Labat, and Anton Roodhuijzen, "European Economy", Economic Papers 401, (Brussels, European Commission, February 2010). Available from http://ec.europa.eu/economy_finance/publications/economic_paper/2010/pdf/ecp401_en.pdf.

www.cse.csiro.au/forms/form-mf-start.aspx.

B. Taking advantage of existing data sources and expertise in the region

- 25. The frameworks and initiatives described in the present document can be used in the development of new statistics or, in particular, as a means to increase the value and use of existing data. In addition to building capacity for making basic statistics available, particularly for least developed countries, there is also a strong need to more efficiently utilize existing data for producing policy-relevant indicators for sustainable development and green economy policies. For example, regularly produced remote-sensing images can be converted into statistics relevant for assessing sustainability, such as land cover statistics. Other types of environmental data, such as *in situ* monitoring of river systems, land use, climate, emissions and air quality, are also produced by different agencies across national statistical systems for specific studies but are often inaccessible for other potential applications or integration into multipurpose compilations, such as into environmental-economic accounts.
- 26. For many countries in Asia and the Pacific, improving the integration of environmental data into the national statistical system and increasing the use of geospatial information systems represent new areas of work with new technical challenges. The potential value of this to policymaking for sustainable development is difficult to overstate. In cases in which data exist but are inaccessible for effective use by official statisticians due to resource or other capacity constraints, international cooperation may provide the means for member States to take better advantage of their data for multiple policy-relevant purposes.
- 27. A substantial amount of technical expertise that could benefit national statistical systems is available in Asia and the Pacific, but exploiting it will require strong coordination across statistics producing agencies. The application of international standards and guidelines can often facilitate the coordination of statistical systems by providing a common baseline and internationally accepted concepts and definitions. Also, the recent establishment of the Ulaanbaatar Group is an example of a forum for exchanging expertise on measurement issues related to natural resources and their sustained use as inputs into economic and social well-being. The London Group on Environmental Accounting, a United Nations city group established in 1993, provides a regular forum for experts to exchange experiences with applying SEEA methods. Enhanced coordination and communication among experts in Asia and the Pacific through increased active involvement of ESCAP member States in the Ulaanbaatar Group and other relevant forums will contribute to the development and use of improved methodologies, the enhancement of skills in the use of new technologies and the advancement of overall national capacities for measurement in support of sustainable development and green economy policies.

IV. Initiating regional cooperation to improve environment statistics

28. Taking note of the opportunities and new developments cited above, particularly the adoption of SEEA as an international standard, a list that details possible actions for improving capacity and cooperation towards achieving improved quality and integration of environment statistics is presented below. These are actions that the Statistics Division may help lead, in close collaboration with other international partners, including, among others, the Environment and Development Division of ESCAP, the United

Nations Statistics Division (UNSD) and the other United Nations regional commissions. All of these activities would also require substantive contributions from member States, particularly in terms of sharing of experiences.

- (a) Assistance with advocating for access to resources for national statistical systems in the Asia-Pacific region for producing internationally comparable statistics on the environment and their relationships to sustainability and economic and social well-being: Implementation of new international standards and increased use of modern technologies and frameworks for statistics may require new commitments from government. Statistical offices often have an important responsibility to explain why applying the appropriate standards for producing indicators is needed for evidence-based policy. International assistance may support national statistical offices in efforts to organize or participate in relevant national and regional seminars and by providing reference materials that help explain the importance of integrated environment statistics to policymakers.
- Technical assistance, through contributing to the development of training materials and by organizing advisory missions, by request, with the aim to build long-term capacities for producing environment statistics and environmental-economic accounts following the internationally agreed standards and guidelines: Technical training pertaining to the implementation of environmental-economic accounting is expected to be in high demand given its multi-disciplinary nature. This type of training must be targeted to statisticians and other public officials beyond national statistical offices. Capacity-building activities for environment statistics and environmentaleconomic accounting in Asia and the Pacific should be integrated, when relevant, into the work programmes of the Statistical Institute for Asia and the Pacific (SIAP) and other training providers, as well as with existing regional capacity development programmes, such as the Regional Programme on Economics Statistics, the Regional Action Plan on Agricultural and Rural Statistics, and the ESCAP and CSIRO project on green growth indicators. Capacity development activities should also be aligned and coordinated with global strategies for implementing SEEA and for FDES, both of which will be reviewed at the forty-fourth session of the Statistical Commission, which will be held in 2013.
- (c) Establishment of an Asia-Pacific regional network of technical experts to facilitate regular knowledge-sharing and as a resource for identifying country-exchange opportunities and training priorities: The focus areas for the network should include: the development of basic environment statistics; the use of geographic information systems (GIS) and related space-based and mapping technologies for statistics; and the implementation of SEEA.
- (d) Development of a public online knowledge centre on green economy measurement, which contains statistics and related metadata information: The project should be pursued jointly by the Statistics Division of ESCAP and the Environment and Development Division of ESCAP in connection with the ESCAP-CSIRO project on green growth indicators. In addition to providing international users with a new source of information for measurement of green economy and sustainable development, the knowledge centre is expected to beneficial to the regional coordination of capacity development activities by identifying gaps in statistics and building technical capacity within the secretariat and among the data providers. This work will, in its later stages, support member States in monitoring the achievement of

sustainable development goals that will be developed pursuant to the Rio+20 outcomes.

(e) Support for member States to actively engage with key groups and forums on statistical methodologies related to sustainable development and green economy policies, including global and regional conferences on measuring progress and well-being and with city groups, such as the Ulaanbaatar Group and the London Group on Environmental Accounting.

V. Conclusions

29. Taking note of the new developments, opportunities and suggested activities cited above, the Committee on Statistics may wish to provide guidance and advice on priorities and approaches for improving environment statistics in the context of sustainable development and green economy policies in Asia and the Pacific, including on the roles of the Statistics Division and other national and international partners.

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