

April 15 – 17, 2016: Environmental and Economic Accounting

Kampala, Uganda

Economic activities depend on the environment and its resources and in turn also have an impact on it. The development of a System of Environmental-Economic Accounting Central Framework (SEEA CF) – a UN statistical standard (adopted in 2012 by the UNSC) – aims at organizing relevant statistical information within an integrated framework, coherent with the System of National Accounts (SNA2008), to facilitate analysis of key processes and their evaluation. FAO and the UN Statistical Division have further developed a satellite application of the SEEA Central Framework (SEEA CF), the SEEA for Agriculture, Forestry and Fisheries (SEEA Agriculture).

An important outcome of economic activities with global planetary consequences is the emissions of greenhouse gases (GHG) into the atmosphere. Countries have committed to long term emissions reductions and adaptation to climate change within the UN Framework Convention on Climate Change (UNFCCC), notably with the most recent agreements of the Paris UNFCCC Conference of the Parties. FAO supports its member countries assess the linkages between agriculture, forestry and other land use activities, including through the provision of reference GHG emission data by country via the FAOSTAT Emissions database.

This training will provide essential background information on the SEEA, with a focus on SEEA Agriculture, as well as a detailed overview of the FAOSTAT Emissions database, and their applications in countries. The structure and scope of the SEEA-Agriculture will be investigated, exploring opportunities to support, from the point of view of national statistics, key international processes such as monitoring and reporting for Sustainable Development Goals indicators and greenhouse gas emissions according to UNFCCC. Data sources available internationally and in Uganda will be explored, applied and tested with practical exercises. Interest to move towards an implementation phase with closer collaboration with participating countries will be assessed.

Participants are from the following Ministries and Governmental Offices:

Ministry of Agriculture, Animal Industry and Fisheries (**MAAIF**);

Ministry of Water and Environment (**MWE**);

National Environment Management Authority (**NEMA**);

National Forestry Authority (**NFA**);

Uganda Bureau of Statistics (**UBOS**).

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1st Day – April 15: Institutional Processes for National Statistical Systems

The general objective of the first day is to present main concepts of the Environmental-Economic Accounting, highlighting their linkages with the main international statistical processes and their implications at country level, such as the UNFCCC communication mechanisms and the emerging Sustainable Development Goals (SDGs) indicator processes. We will highlight current activities of FAO in support of national statistical processes and future synergies towards the development of a common statistical framework.

9:00 – 9:30 Opening session – Welcome

General objectives of the training and expected results for each training day;
Introduction of trainers and of participants and their expectations from the training;

9:30 – 10:30 Main international statistical processes and related activities within countries and on the role of FAO. This includes 30 minutes for discussion with participants on specific institutional arrangements in Uganda.

Presentation: **Institutional_Processes.pdf**

Morning **10:30 – 11: 00 SDGs process, targets, indicators** (Part 1)

Presentation: **SDGs.pdf**

Coffee break 11:00 – 11:30

11:30 – 12:00 SDGs process, targets, indicators (Part 2 and discussion)

Presentation: **SDGs.pdf**

12:00 – 13:00 System of Environmental and Economic accounting. (Part 1)

Presentation: **SEEA.pdf**

13:00 – 14:30 Lunch break

14:30 – 15:30 System of Environmental and Economic accounting. (Part 2 and discussion)

Presentation: **SEEA.pdf**

Coffee break 15:30 – 16:00

Afternoon **16:00 – 16:30 UNFCCC and National GHG Inventories** – Relevant reporting mechanisms, tiered approach, statistical processes and related FAO support

Presentation: **UNFCCC_Stats.pdf**

16:30 – 17:00 Statistical processes in FAO for data collection, dissemination and capacity development

Presentation: **FAO_STATS.pdf**

17:00 – 17:30 Wrap-up of the day, discussion, pending questions



2nd Day – April 16: SEEA agriculture: theory and applications

Purpose of the second day is to present the SEEA Agriculture as an application of the SEEA CF to Agriculture, Forestry and Fishery activities. Both theoretical presentations and practical exercises based on the use of FAO data platforms and national datasets will be made. Participants will be actively involved in the practical exercises and engaged in discussion on availability of country specific data, definitions and classifications in use. Linkages with international, national statistical, as well as policy making processes of the SEEA Agriculture will be explored with participants. Participants are invited to propose ahead of the training topics and issues to be further explored in the practical demonstrations, including bringing or pointing to specific country datasets.

9:00 – 11:00 SEEA Agriculture: Development process, architecture and structure of the SEEA Agriculture; specific accounting rules and data domains; accounting tables and approach to implementation.

Presentation: **SEEA-Agriculture_Uganda_Theory_DAY2.pdf**

Morning *Coffee break 11:00 – 11:30*

11:30 – 13:00 SEEA Agriculture Accounting tools: Reference Combined Presentation: description and Example. In particular description of variables that will be used in the exercise. Detailed examples of Combined presentation economic and environmental variables compilation. Analytical uses and possible extensions.

Presentation: **SEEA-Agriculture_Uganda_Exercises_DAY2.pdf**

13:00 – 14:30 Lunch break

Afternoon **14:30 – 16:00 SEEA Agriculture Accounting tools:** Physical Supply and Use table: Definition and example; Asset Account tables: definition and Example. In particular description of variables that will be used in the exercise. Tiered approach for SEEA Agriculture; Detailed examples of compiled accounting tables and exercises. Analytical uses and possible extensions.

Presentation: **SEEA-Agriculture_Uganda_Exercises_day2.pdf**

Coffee break 16:00 – 16:30

16:30 – 17:00 Wrap-up of the day, pending questions and the possible way forward, role of FAO.



3rd Day – April 17: FAOSTAT emissions database for AFOLU

Objective of the day is to present and make the participants familiar with the FAOSTAT emissions database, its application as global reference, source for trends analysis and instrument for identify data gaps. We will give a detailed overview of the available Tier 1 methodology applied in the database. We will also present our latest developments towards a Tier 2 approach for manure statistics.

This is also the last day of the training, we will highlight the main messages and lessons, distribute the training material with USB keys and discuss with participants the way forward particularly concerning their interest in becoming a pilot country for the implementation of the SEEA Agriculture.

9:00 – 10:30 The FAOSTAT emissions database Part I. FAO emissions database in support of national statistical processes associated with the UNFCCC: a detailed overview and examples of data availability and tools for global, regional and national analyses.

Presentation: **FAO_Emissions_database_I.pdf**

Morning *Coffee break 10:30 – 11:00*

11:00 – 12:30 The FAOSTAT emissions database Part II. Exercises with country values and trends; Emission levels; Emission Factors; Applications with Geospatial data; Tier 2 Example for GHG: work on Manure.

Presentation: **FAO_Emissions_database_II.pdf**

12:30 – 13:30 Lunch break

Afternoon

13:30 – 15:00 Wrap-up of the training (main messages), pending questions and the possible way forward, role of FAO. Closure and salutations



Course Description by Presentation

Institutional Statistical Processes

This is the introductory presentation to the overall course. It focuses on highlighting the importance of statistics for informed national decision-making and planning, and thus on the need to develop strong methodological and institutional capacity for countries to meet existing challenges in collecting, analysing, storing and reporting credible, reliable, accurate data that can be transparently communicated nationally and internationally. The presentation underlines the need for better coordination at institutional and methodological level, with the need to integrate environmental and socio-economic statistics as a basis for improved relevance of statistics evidence-based decision making. The Rio Sustainable development process with its three conventions on climate change, desertification and biodiversity are identified as an ideal platform for integration, considering the many national agencies participating as focal points in many of these processes, in particular in production of relevant statistics and their reporting internationally.

The 2030 Agenda for Sustainable development: Goals, Targets and Indicators

The presentation describes the sustainable development process that has led to the adoption of the 2030 Agenda for Sustainable Development, and focuses on selected goals, targets and indicators.

The role of NSOs and Countries in the national, regional, thematic and global indicators process is pointed out as well as the role of UN agencies in support of country processes for global indicators reporting and monitoring.

The presentation includes a description of a sub-set of twenty indicators under custodianship of FAO, linking them to ongoing and planned FAO capacity development activities on the SDG process, including the co-development of statistical frameworks for economic environmental accounting.

System of Environmental-Economic Accounting

The general objective of this presentation is to introduce the main concepts of the Environmental-Economic Accounting (EEA), starting from placing it into context.

EEA was born at the crossroads of two interrelated intellectual and political development processes. The first mainly belongs to the discipline of Economics, confronted with long-standing criticism to GDP as a measure of overall well-being, including the need to take environmental degradation into account. The second is linked to the need to better link economic considerations to overall sustainable development processes, as a key to support integrated policy-making. The response to this has led to the development, in countries' own economic accounting systems (System of National Accounts, SNA), of satellite systems of accounts describing Economy-Environment relationships.

The System of Environmental-Economic Accounting (SEEA) is currently a large and growing family of documents, published by the most important international statistical agencies and endorsed by the United Nations Statistical Commission, providing the necessary methodological specifications – frameworks, concepts, definitions, classifications, essential elements of accounting tables, for the compilation of environmentally-relevant data that are systematically connected and comparable with more traditional economic data in National Accounts. Such data allow for analytical uses that would otherwise not be possible or not be based on coherent data.

The presentation introduces basic SNA concepts that are common to the SEEA-Central Framework (CF) and SEEA Agriculture frameworks, concerning among others the definition of the national

economy, the production boundary, the economic units and their functions in the economic system, the different institutional sectors' characteristics and the classification of economic activities into industries.

Two perspectives on Nature's Assets taken in Environmental Accounting are then presented– the individual resources focus of the CF and the more systemic view taken in the Experimental Ecosystem Accounts (linked to monetary and non-monetary evaluation of Ecosystem services).

Finally the presentation gives some detail of the structure of the SEEA-CF as for the sequence and the kind of accounts present in it, laying the basis for the further in-depth discussion of these concepts and their application to Agriculture, Forestry and Fisheries.



The UNFCCC process and National GHG inventories

This presentation provides basic concepts on the international processes linked to the United Nations Framework Convention on Climate Change (UNFCCC). It provides some historical background for the Convention; highlights its primary goals and the statistical mechanisms associated to its implementation: namely the processes of monitoring, reporting and verification. Following the principle of common but different responsibilities and capacities all Parties to the Convention have obligations to measure and report their level of greenhouse gas emissions (GHG). Likewise, although within different processes these inventories are submitted to and assessed internationally through specific Convention mechanisms. The presentation discusses different requirements for developed, Annex I, and developing, non-Annex I, parties to the convention, within the context of existing IPCC guidelines. It then links the various reporting mechanisms to the need to develop robust underlying statistics, with a focus on the agriculture, forestry and land use sectors. Mechanisms discussed are National Communications, Biennial Update Reports, and the most recent reporting requirements established at COP21 in Paris, the Nationally Determined Contributions. Methodological and institutional challenges and opportunities associated with the required statistical processes towards are identified, with examples of FAO activities, data and tools in support of member countries.

Agri-Environmental Statistics Supporting Evidence-Based Decision Making

Statistics are a core function and pillar to informed decision-making and national planning. This presentation focuses on the statistical corporate repositories developed and maintained by FAO in coordination with member countries in the area of agriculture, forestry and fisheries. Data collection and data quality processes as well as the dissemination of reliable and timely information are essential components of FAO mandate and fundamental in support of evidence-based decision making. The presentation covers the development of standards and methodologies for data and metadata collection, data harmonization and overall data quality mechanisms across the broad spectrum of thematic data related to food security, agriculture and sustainable agricultural development. This includes the development of statistics for monitoring and reporting the process towards national and international goals and targets.

The presentation provides a detailed overview of FAO activities for collection and dissemination of agri-environmental statistics, including production, trade, inputs of productions including fertilizers, land use and emissions. It provides notable examples of FAO corporate datasets and tools developed in support of and in collaboration with relevant institutions in member countries, detailing the process of collecting official national data, as well as contributing to strengthening the national statistical process at the source of those data. The presentation concludes with a focus on the role of agri-environmental statistics and related statistical work as crucial aspect of FAO activities for capacity development and in support of relevant international reporting process, including the 2030 Sustainable Development Agenda and the Climate Convention.

System of Environmental-Economic Accounting for Agriculture, Forestry and Fisheries (SEEA-Agriculture)

This presentation focuses the SEEA for Agriculture, Forestry and Fisheries (SEEA-Agriculture), a satellite application of the SEEA Central Framework (SEEA CF). The System of Environmental-Economic Accounting Central Framework (SEEA CF) is a UN statistical standard, adopted in 2012 by the UNSC, aiming at organizing relevant statistical information within an integrated and coherent environmental and economic accounting framework, to facilitate analysis of key processes and their evaluation.

The presentation provides essential theoretical background information on the SEEA CF and on the SEEA-Agriculture, highlighting how it applies the SEEA-CF perspective on economic activities and environmental assets, in the specific agricultural context. The SEEA-CF accounts will be further clarified, considering specifically Flow accounts (Supply and Use Tables), Asset accounts (Balance sheets) and Activity accounts (Economic transactions and variables related to environment and resources).

The presentation then introduces the architecture, structure and scope of the SEEA-Agriculture, and key accounting issues, specific data domains covered and the accounting tables are described. Cross-cutting view on activities is highlighted, taking forestry/forest products as a notable example. The presentation concludes with a highlight of the current development process within UNSC, its research agenda and a discussion of country implementation plans of the SEEA-Agriculture, characterized by a tiered approach of progressive data complexity, aimed at developing national capacity.

SEEA Agriculture Forestry and Fisheries Accounting Tools: Exercises on Combined Presentation, Physical Flow Accounts and Asset Accounts, Part I and II

This is a hands-on exercise section for course participant, divided into two parts:

Part I. Explanation and exercises on the SEEA-Agriculture Reference Combined Presentation, its scope and the economic and environmental variables included in it. The first part of the presentation describes in details the Reference Combined Presentation compilation method, using as example existing national data from FAOSTAT and exploring availability of more detailed national data from participants. Analytical uses and possible extensions are explored.

Part II Explanation and exercises on the two main SEEA-Agriculture Accounting tools: the *Physical Supply and Use Table* and the *Asset Accounts Table*. Definitions and examples are provided to guide participants in the compilation of these fundamental tables at national level. Availability of more detailed national data is explored, and analytical uses and possible extensions are discussed.

The FAO emissions database, Part I and II

This presentation is composed of two parts. Part I briefly recapitulates the statistical processes associated with the UN Framework Convention on Climate Change (UNFCCC) and the associated reporting mechanisms for greenhouse gas inventories (GHG). It then elaborates more in detail on the development and applications of the FAO emissions database. The FAO emissions database is accessible through FAOSTAT and provides estimates of GHG for all countries worldwide and from 1990 to date for agriculture, forestry and other land use (AFOLU). Examples of relevant analyses

(global, regional, sectoral and trends) are given and statistical and analytical tools based on the database are presented. These include the projections of emissions from agriculture in 2030 and 2050 and an instrument to compare GHG levels as reported in national communications to related emissions estimates in FAO database.

Part II presents a suite of exercises with the FAO emissions database for key sources of GHG emissions in the AFOLU of Uganda, namely: the computation of emissions from a) forest; b) from enteric fermentation, manure management systems, manure left on pastures and applied to soils; c) from cultivation of organic soils.

