



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

SEEA-AGRICULTURE

21st Meeting of the London Group for Environmental Accounting
2-4 November 2015, The Hague, The Netherlands



Silvia Cerilli and Francesco N. Tubiello
Environment-team
Statistic Division



Food and Agriculture Organization
of the United Nations

Summary

SEEA Agriculture:

- Progress and steps towards UNSC 2016
- Country Implementation: Tiered Approach and Reference Combined Presentation



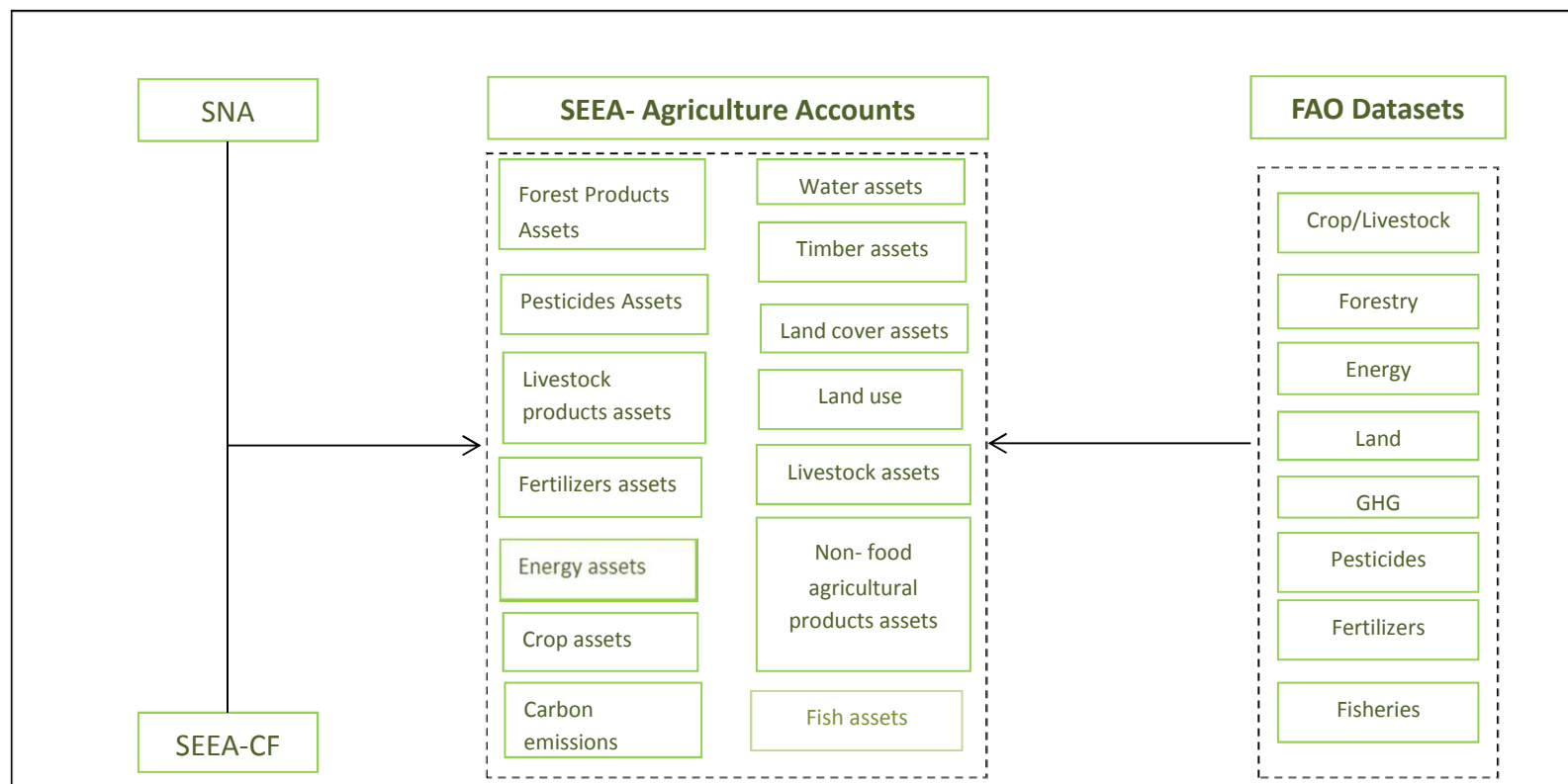
SEEA Agriculture progress to date

- The development of a **System of Environmental-Economic Accounting for Agriculture (SEEA Agriculture)** was proposed by the FAO in 2010 and endorsed by the **UN Committee of Experts on Environmental-Economic Accounting (UNCEEA)** in June 2011.
- UNCEEA also welcomed the involvement of the **London Group**, possibly through the establishment of sub-groups engaging additional experts on key agricultural statistics issues.
- The scope of SEEA Agriculture covers **agricultural, forestry and fishing** activities, and the design of the relevant accounts reflects an application of the tables and accounts of the **SEEA Central Framework** to the organization of data on these activities.
- Direct work on the design of the components of the **SEEA Agriculture** commenced in **June 2013** and has continued steadily since that time.



SEEA Agriculture progress to date

- A central aspect of the work has been the use of many separate FAO statistical datasets (e.g. agricultural production, fertilizer production and use, land use, water statistics, energy and emissions statistics, and others) within SEEA and SNA accounting framework.



SEEA Agriculture progress to date

- Design of the SEEA Agriculture framework advanced to cover 10 broad data domains:

| | |
|----|--|
| 1 | Agricultural products and related environmental assets |
| 2 | Forestry products and related environmental assets |
| 3 | Fisheries products and related environmental assets |
| 4 | Water resources |
| 5 | Energy |
| 6 | Greenhouse Gas (GHG) emissions |
| 7 | Fertilizers, nutrient flows and pesticides |
| 8 | Land |
| 9 | Soil resources |
| 10 | Other economic data |



SEEA Agriculture progress to date

- Feasibility and usefulness of SEEA Agriculture tested in four countries (Australia, Canada, Guatemala, Indonesia)
- Expert Group Meeting October 2014, discussion at UNCEEA and London Group, side event at UNSC March 2015
- First global consultation on draft SEEA Agriculture completed by March 2015; country implementation approach with Tiers presented at 10th UNCEEA Meeting (New York, Jun 2015); working draft published by the Global Strategy in August 2015
- Additional informal expert consultations within and outside FAO leading to a Final Revised Draft for a 2nd Global Consultation



SEEA Agriculture next steps

- **Second Global Consultation planned Nov 15 - Dec 15 2015, including close coordination with UNSD and UNCEEA for finalization process**
- **Finalised revised SEEA-Agriculture draft as background document for UNSC discussion by January 2016, aiming for UNSC adoption in March 2016**



SEEA Agriculture Country Implementation:

A Tiered Approach

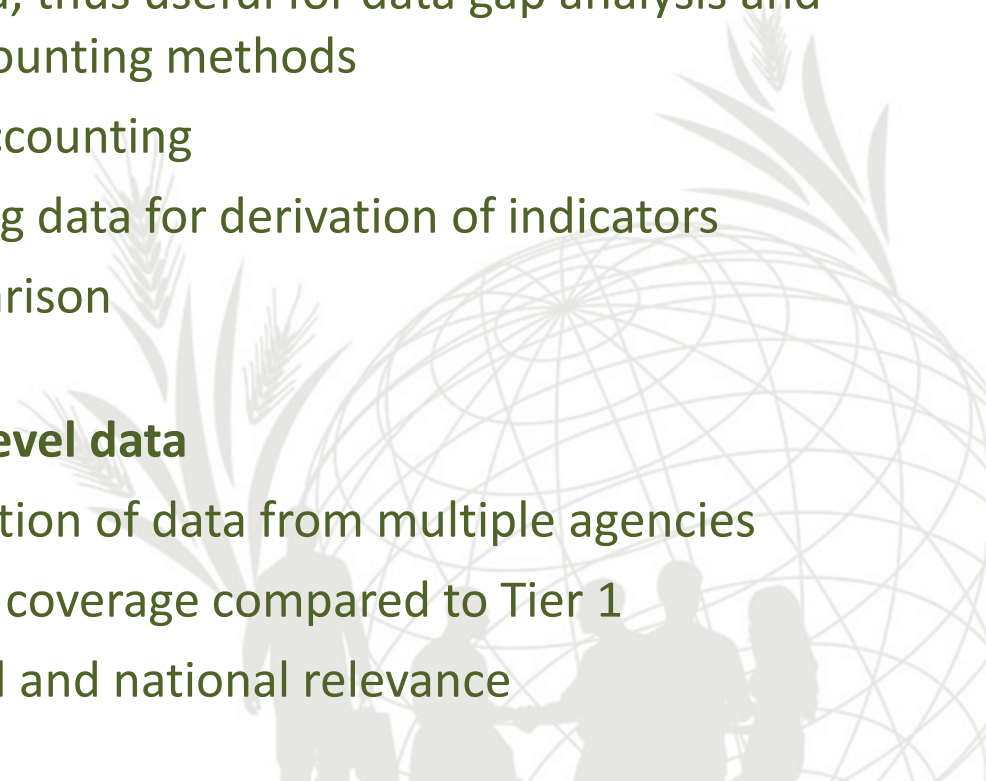
- As presented at the 10th Meeting of the UNCEAA, SEEA-Agriculture will be implemented using a tiered approach, including use of combined presentations:

Tier 1: Compilation of accounts using global datasets of official country data, such as those communicate to FAO and disseminated via FAOSTAT

- Based on official national data, thus useful for data gap analysis and QA QC of more advanced accounting methods
- Designed as entry point for accounting
- Less detail, focus on organising data for derivation of indicators
- Basis for cross-country comparison

Tier 2: Use of available national level data

- Provide a platform for integration of data from multiple agencies
- Additional detail and broader coverage compared to Tier 1
- Additional analytical potential and national relevance



SEEA Agriculture Tiered Approach

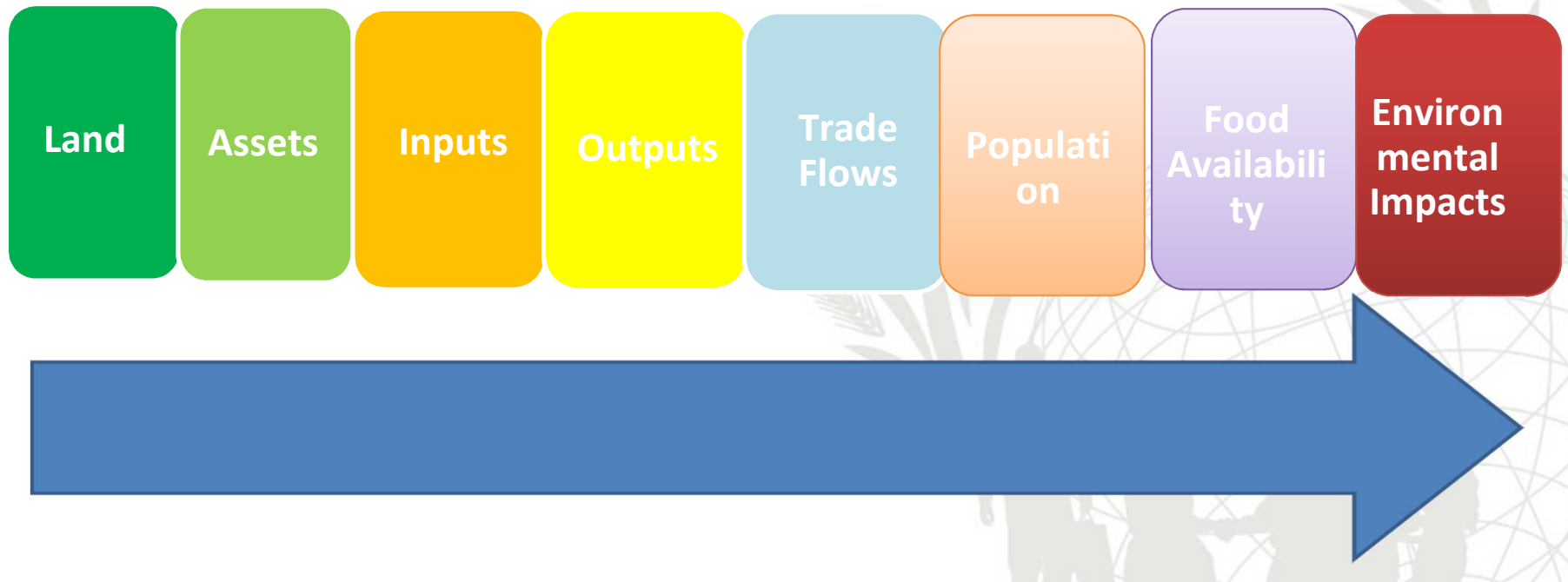
Tier 3: Full implementation

- Likely to require additional data collection
- Extend to sub-national, geo-spatial data
- Build progressively, perhaps develop Tier 3 accounts as benchmarks



SEEA Agriculture Tier 1 Approach: Reference Combined Presentation

- The SEEA-Agriculture Reference Combined Presentation is a cross cutting perspective on a critical set of environmental and economic variables, based on the following structure: Land, Assets, Inputs, Outputs, Trade Flows, Population, Food availability and Environmental Impacts.



SEEA Agriculture Reference Combined Presentation

SEEA-AGRICULTURE COMBINED PRESENTATION

| | Assets | | | | | Inputs | | | | | | | | |
|--------------------------------------|-----------------------|----------------------------|-----------------------------------|--|----------------------------------|------------------|--------------|----------------------|--|-------------------------------|--------------------|--|-------------------------------|--------------|
| | Land Area (000 ha) | Harvested Area (000 ha) | Biomass stock (million tonnes) | Number of Heads (Stock) (000 heads) | Producing Animals (000 heads) | Water Withdrawal | Energy Use | Synthetic Fertilizer | | | Organic Fertilizer | | | Pesticides |
| | | | | | | (m3) | (terajoules) | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | (000 tonnes) |
| TOTAL | | | | *See note 1 | *See note 1 | | | | | | | | | |
| Agriculture | | | | *See note 1 | *See note 1 | | | | | | | | | |
| Arable Land | | | | | | | | | | | | | | |
| Permanent Crop | | | | | | | | | | | | | | |
| Permanent Meadows and Pastures | | | | | | | | | | | | | | |
| Crops Primary | | | | | | | | | | | | | | |
| Cereals | | | | | | | | | | | | | | |
| Roots and tubers | | | | | | | | | | | | | | |
| Pulses | | | | | | | | | | | | | | |
| Nuts | | | | | | | | | | | | | | |
| Oil-bearing crops | | | | | | | | | | | | | | |
| Vegetables | | | | | | | | | | | | | | |
| Fruits | | | | | | | | | | | | | | |
| Fibres | | | | | | | | | | | | | | |
| Fodder Crops | | | | | | | | | | | | | | |
| Other crops | | | | | | | | | | | | | | |
| Cattle and Buffaloes | | | | | | | | | | | | | | |
| Beef and buffaloes meat | | | | | | | | | | | | | | |
| Milk | | | | | | | | | | | | | | |
| Sheep and Goats | | | | | | | | | | | | | | |
| Sheep and Goats meat | | | | | | | | | | | | | | |
| Milk | | | | | | | | | | | | | | |
| Pigs | | | | | | | | | | | | | | |
| Meat, pigs | | | | | | | | | | | | | | |
| Poultry Birds | | | | | | | | | | | | | | |
| Eggs primary | | | | | | | | | | | | | | |
| Meat, poultry | | | | | | | | | | | | | | |
| Other livestock | | | | | | | | | | | | | | |
| Meat, other livestock | | | | | | | | | | | | | | |
| Forest | | | | | | | | | | | | | | |
| Planted forest | | | | | | | | | | | | | | |
| Primary forest | | | | | | | | | | | | | | |
| Other naturally generated forests | | | | | | | | | | | | | | |
| Game meat and edible forest products | | | | | | | | | | | | | | |
| Wood Fuel | | | | | | | | | | | | | | |
| Industrial Roundwood | | | | | | | | | | | | | | |
| Sawlogs and Veneer Logs | | | | | | | | | | | | | | |
| Pulpwood, Round and Split | | | | | | | | | | | | | | |
| Other Industrial Roundwood | | | | | | | | | | | | | | |
| Other forest products | | | | | | | | | | | | | | |
| Water | | | | | | | | | | | | | | |
| Inland water | | | | | | | | | | | | | | |
| Coastal water (EEZ) | | | | | | | | | | | | | | |
| Aquaculture products | | | | | | | | | | | | | | |
| Fisheries products | | | | | | | | | | | | | | |



SEEA Agriculture Reference Combined Presentation

SEEA AGRICULTURE COMBINED PRESENTATION

| | Assets | | | | | Inputs | | | | | | | | |
|---------------|-------------------------|----------------------------|-----------------------------------|--|----------------------------------|---------------------------|--|-------------------------------|--------------------|--|-------------------------------|--------------|--|--|
| | Land Area (000 ha) | Harvested Area (000 ha) | Biomass stock (million tonnes) | Number of Heads (Stock) (000 heads) | Producing Animals (000 heads) | Synthetic Fertilizer | | | Organic Fertilizer | | | Pesticides | | |
| | | | | | | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | (000 tonnes) | | |
| Assets | | | | | | | | | | | | | | |
| Inputs | | | | | | | | | | | | | | |
| | Water Withdrawal | Energy Use | Synthetic Fertilizer | | | Organic Fertilizer | | | Pesticides | | | | | |
| | (m3) | (terajoules) | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | N (000 tonnes) | P ₂ O ₅ (000 tonnes) | K ₂ O (000 tonnes) | (000 tonnes) | | | | | |



SEEA Agriculture Reference Combined Presentation

| | Outputs | | | | | Trade flows | | | | | | | Population | Food availability | | Environmental Impacts | | |
|--------------------------------------|-------------------|------|-------------------------------|-------------------------------|-------------------------------|-------------|-------------|--------------|-------------------------------|------|-------------|--------------|-------------------------------|-------------------|-------------|---------------------------------|--|-----------|
| | Actual Production | | Gross Production Value | Value added | Total GDP | Exports | | | Imports | | | | | (000) | Food tonnes | Food supply (Kcal/capita / day) | GHG Emission (CO2 eq) from Agriculture | |
| | (000 tonnes) | (m3) | USD million dollars (current) | USD million dollars (current) | USD million dollars (current) | (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | | (000) | (000 tonnes) | (Kcal/capita / day) | (bigrams) |
| | | | | | | | | | | | | | | | | | | |
| TOTAL | *See note 1 | | | | | | | | | | | | | | | | | |
| Agriculture | *See note 1 | | | | | | | | | | | | | | | | | |
| Arable Land | | | | | | | | | | | | | | | | | | |
| Permanent Crop | | | | | | | | | | | | | | | | | | |
| Permanent Meadows and Pastures | | | | | | | | | | | | | | | | | | |
| Crops Primary | | | | | | | | | | | | | | | | | | |
| Cereals | | | | | | | | | | | | | | | | | | |
| Roots and tubers | | | | | | | | | | | | | | | | | | |
| Pulses | | | | | | | | | | | | | | | | | | |
| Nuts | | | | | | | | | | | | | | | | | | |
| Oil-bearing crops | | | | | | | | | | | | | | | | | | |
| Vegetables | | | | | | | | | | | | | | | | | | |
| Fruits | | | | | | | | | | | | | | | | | | |
| Fibres | | | | | | | | | | | | | | | | | | |
| Fodder Crops | | | | | | | | | | | | | | | | | | |
| Other crops | | | | | | | | | | | | | | | | | | |
| Cattle and Buffaloes | | | | | | | | | | | | | | | | | | |
| Beef and buffaloes meat | | | | | | | | | | | | | | | | | | |
| Milk | | | | | | | | | | | | | | | | | | |
| Sheep and Goats | | | | | | | | | | | | | | | | | | |
| Sheep and Goats meat | | | | | | | | | | | | | | | | | | |
| Milk | | | | | | | | | | | | | | | | | | |
| Pigs | | | | | | | | | | | | | | | | | | |
| Meat, pigs | | | | | | | | | | | | | | | | | | |
| Poultry birds | | | | | | | | | | | | | | | | | | |
| Eggs primary | | | | | | | | | | | | | | | | | | |
| Meat, poultry | | | | | | | | | | | | | | | | | | |
| Other livestock | | | | | | | | | | | | | | | | | | |
| Meat, other livestock | | | | | | | | | | | | | | | | | | |
| Forest | | | | | | | | | | | | | | | | | | |
| Planted forest | | | | | | | | | | | | | | | | | | |
| Primary forest | | | | | | | | | | | | | | | | | | |
| Other naturally generated forests | | | | | | | | | | | | | | | | | | |
| Game meat and edible forest products | | | | | | | | | | | | | | | | | | |
| Wood Fuel | | | | | | | | | | | | | | | | | | |
| Industrial Roundwood | | | | | | | | | | | | | | | | | | |
| Sawlogs and Veneer Logs | | | | | | | | | | | | | | | | | | |
| Pulpwood, Round and Split | | | | | | | | | | | | | | | | | | |
| Other Industrial Roundwood | | | | | | | | | | | | | | | | | | |
| Other forest products | | | | | | | | | | | | | | | | | | |
| Water | | | | | | | | | | | | | | | | | | |
| Inland water | | | | | | | | | | | | | | | | | | |
| Coastal water (EEZ) | | | | | | | | | | | | | | | | | | |
| Aquaculture products | | | | | | | | | | | | | | | | | | |
| Fisheries products | | | | | | | | | | | | | | | | | | |



SEEA Agriculture Reference Combined Presentation

| Outputs | | | | | Urban forms | | Imports | | Population | Food availability | | Environmental impacts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|-------------------------------|-------------------------------|-------------------------------|-------------|--------------|-------------------------------|--|------------|-------------------|--|--|-------------|--|--|--|--|--|--|--|---------|--|--|--|---------|--|--|--|------|-------------|--------------|-------------------------------|------|-------------|--------------|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Actual Production | | Gross Production Value | Value added | Total GDP | | | | | | | | GHG Emission (CO2 eq) from Agriculture | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (000 tonnes) | (m3) | USD million dollars (current) | USD million dollars (current) | USD million dollars (current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="8">Trade flows</th> </tr> <tr> <th colspan="4">Exports</th> <th colspan="4">Imports</th> </tr> <tr> <th>(m3)</th> <th>(000 heads)</th> <th>(000 tonnes)</th> <th>USD million dollars (current)</th> <th>(m3)</th> <th>(000 heads)</th> <th>(000 tonnes)</th> <th>USD million dollars (current)</th> </tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> | | | | | | | | | | | | | Trade flows | | | | | | | | Exports | | | | Imports | | | | (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | | | | | | | | | | | | | |
| Trade flows | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Exports | | | | Imports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | (m3) | (000 heads) | (000 tonnes) | USD million dollars (current) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Population | Food availability | | Environmental Impacts |
|------------|-------------------|---------------------------------|--|
| | Food (000 tonnes) | Food supply (Kcal/capita / day) | GHG Emission (CO2 eq) from Agriculture |
| (000) | | | (gigagrams) |

SEEA Agriculture Reference Combined Presentation

- The SEEA-Agriculture Reference Combined Presentation (CP) provides national experts with an entry point for compilation of SEEA variables at Tier 1 level, using FAOSTAT data to provide synthetic information in a robust, transparent and internationally comparable manner.
- The SEEA-Agriculture Reference CP provides a common basis to highlight data gaps and further data development needed for addressing more detailed national analysis.



Thank you!

[Silvia Cerilli@fao.org](mailto:Silvia.Cerilli@fao.org)

Francesco.Tubiello@fao.org

<http://www.fao.org/economic/ess/environment/en>

