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

Development and implementation activities

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IICA, Panama City, September 2-4 2015

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Background (1)

- Work on the development of a System of Environmental-Economic Accounting for Agriculture, Forestry and Fisheries (SEEA-Agriculture), proposed by the FAO and endorsed by UNSD, commenced in June 2013

- The System of Integrated Environmental and Economic Accounting (SEEA) Central Framework, of which SEEA-Agriculture is a satellite account, is a statistical framework adopted by the UN Statistical Commission (UNSC) in 2012

    - international standards for environmental-economic accounting and integration of information on economic activity and the environment to better study sustainability of different production and consumption patterns

- SEEA facilitates integrated analysis of environment and economic variables. It can be used to develop indicators that are internationally consistent and transparent, including for monitoring of SDG targets

Background (2)

- SEEA CF organized to demonstrate how national accounting principles and techniques described in the System of National Accounts can be used to organize economic and environmental information.
  - coverage includes accounting for different types of physical flows (such as energy, water, waste and air emissions) and different types of environmental assets and natural resources (such as minerals, soil, timber, fish and water).
  - does not, however, focus on specific activities, such as agriculture

- SEEA Agriculture (SEEA-Agri) takes SEEA CF as a starting point, extends and applies relevant accounting treatments to integrate economic and environmental information pertaining to agricultural activities (including fishing and forestry)
  - Data organized using the SEEA-Agri framework can serve as basis to measure meaningful and comparable agro-environmental indicators.

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Background (3) – benefits from SEEA-Agriculture

- more detailed environmental analysis of agriculture, fishing and forestry activities, such as natural resource extraction and use relative to production and income for use of timber, fish and soil resources, etc., and sustainability of production from these assets.
- better understanding of use of inputs such as water, energy, fertilizer and pesticides, and associated generation of emissions and waste
- Enabling of comparison of natural resource use and environmental impact and sustainability across different activities, products and processes.
- consideration of links between various activities and the associated land use and changes in environmental condition (or quality)
- complementarity with (monetary) economic accounts for agriculture, which focus on market activities and impacts
- Support in the development of new environmental indicators

The richness and the analytical potential of the combined presentation will depend on the richness of data that can be gathered and organized in the base accounts.

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Background (4) – benefits from SEEA-Agriculture

- The three divisions - (01) Crop and animal production, hunting and related service activities; (02) Forestry and logging; and (03) Fishing and aquaculture (UNSD, 2008) under ISIC revision 4, Section A - represent activities that are major users of one or more environmental assets, in particular soil, water, biological resources, land and ecosystems.
    - These activities as a whole might occupy a significant portion of the economically available (exploitable) land in developing countries.
- Invaluable benefits of evaluating and monitoring rational and sustainable use of the environment vis-à-vis these activities in an integrated accounting framework for medium to long-term policy formulation for agricultural, land use and related environmental and ecosystem issues.
- The three Divisions strongly related to basic population needs (food, energy, shelter and other raw materials), needed to inform important issues related to food security
- Can highlights intra-generational and inter-generational policy concerns.

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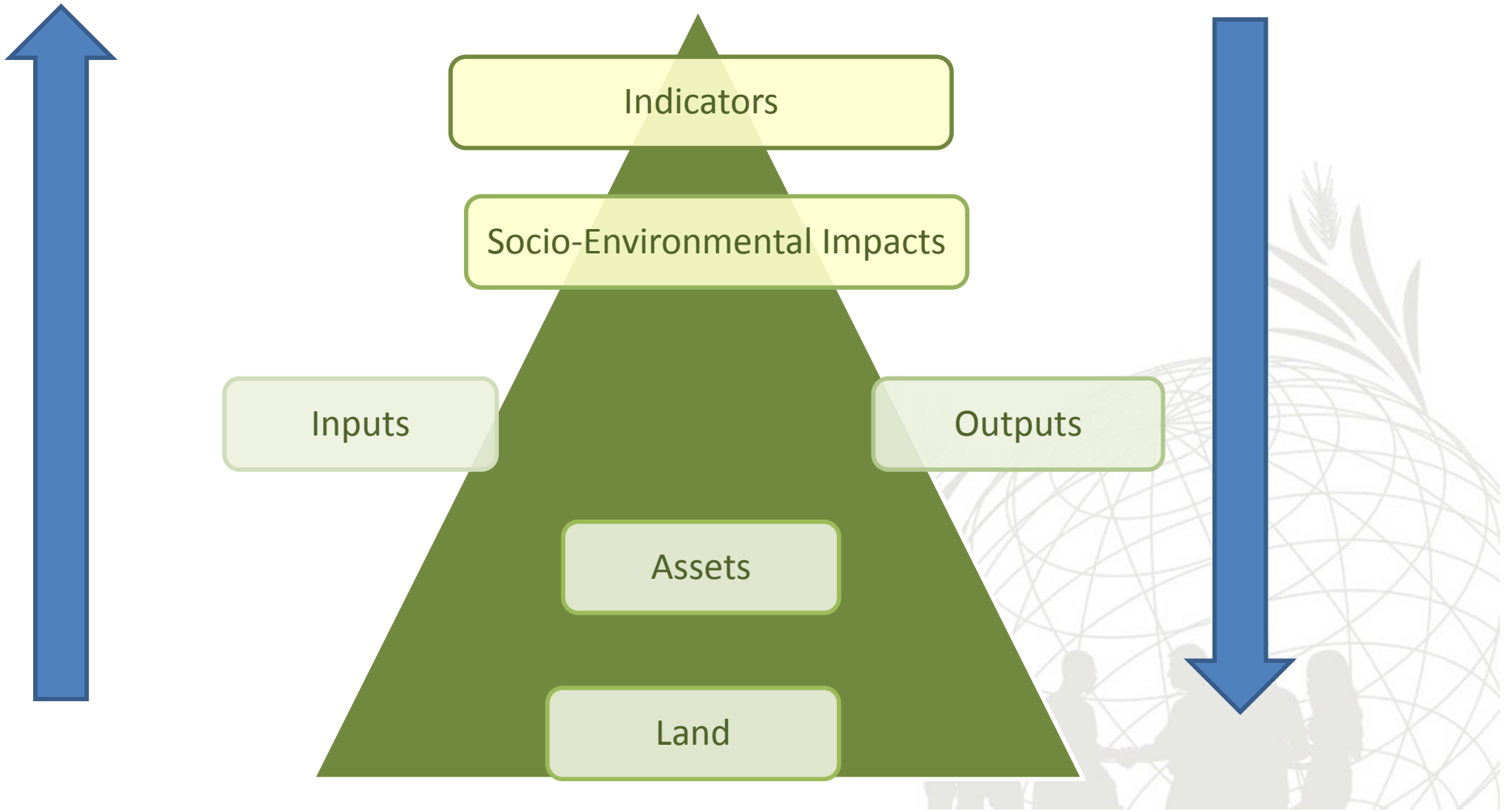
SEEA-Agriculture: Combined Presentation

- SEEA Domains can be linked via Combined Presentations, at global (regional, country) level, to facilitate synthetic statistical analysis.



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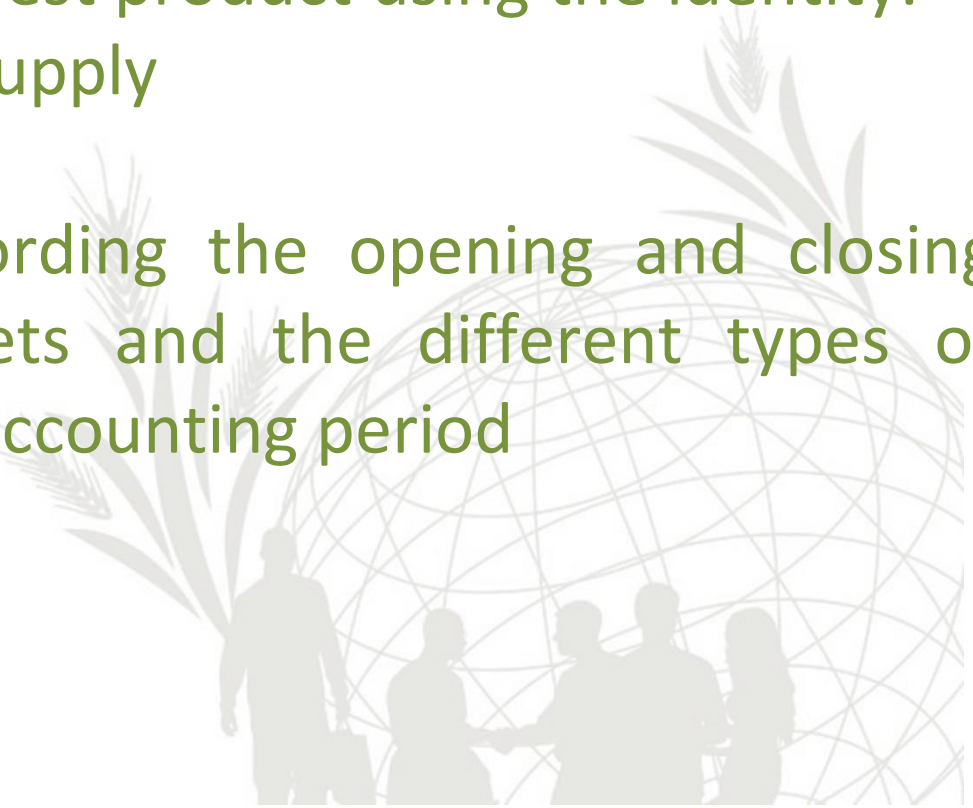
SEEA-Agriculture: Accounting Tables

- Two main types of SEEA-Agriculture Accounting Tables:

- **Physical Supply and Use Table**s, describing the supply and use of agricultural production, forest product using the identity:

  Total Use = Total Supply

- **Asset Accounts Tables,** recording the opening and closing stock of environmental assets and the different types of changes in the stock over an accounting period



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Four main SEEA-Agriculture Base Accounts

Supply Use Tables:

1. Physical flow supply and use tables (PSUT)
    - Each PSUT compiled using a measurement unit appropriate to the specific output, input or residual. For example, a PSUT for wheat might be in terms of tonnes or calories to provide information for the analysis of nutrition.
    - Examples of PSUT progress to date:
        - Crops and Livestock; Non Food Items; Fertilizers; Forest products
2. Monetary supply and use tables
    - based on the structures described in the 2008 SNA; information on production, trade, and associated flows of income and final demand.

Asset Accounts:

1. Environmental asset accounts
2. Land use and land cover accounts

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SEEA-Agriculture: Accounting Tables Domains

- SEEA Agriculture Accounting tables include 10 Domains:

N	SEEA-Agriculture Domain
1	Crops and Livestock
2	Forestry
3	Fisheries
4	Water resources
5	Energy
6	Greenhouse Gas emissions
7	Fertilizers and pesticides
8	Land use and land cover
9	Soil resources
10	Economics

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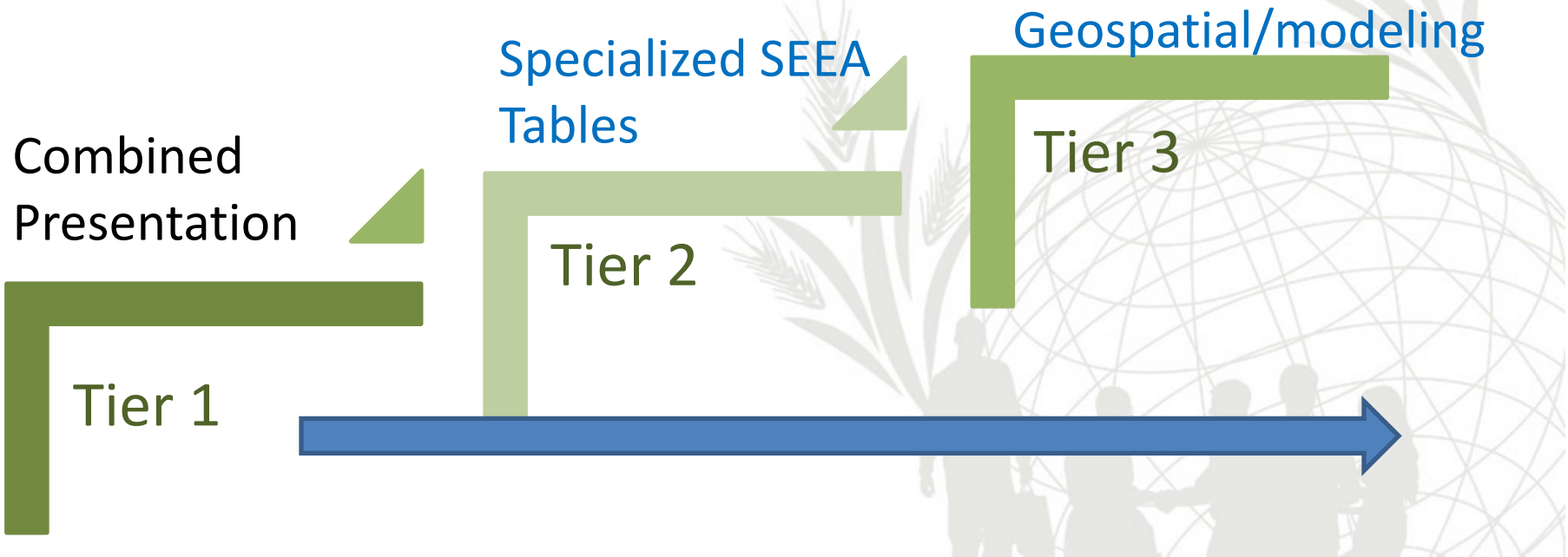
SEEA-Agriculture: Phased Tiered Approach

- SEEA combined presentations can be easily filled with international data, providing reference country analyses (Tier 1), to be improved with available national and sub-national data (Tiers 2-3).

- Three dimensions of application: i) assessment of data gaps; ii) use as international reference, for QA/QC; iii) Generator of Indicators



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Progress, development, testing to date

- The feasibility of compiling SEEA accounts for Agriculture, including data availability within FAO databases, was tested in four pilot countries in 2014: Australia, Canada, Guatemala, Indonesia

- The work led to a draft SEEA Agriculture, with contribution by national and international experts, submitted to UNSD for a first global consultation process, Dec 2014-Jan 2015

- Positive feedback was received from experts in more than 30 NSOs and from international agencies

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SEEA-Agriculture: Reference Combined Presentation

- **Assets Variables:** entities that provide environmental "functions" or services. Environmental assets cover both physical and socio-economic variables available in FAOSTAT

SEEA-AGRI COMBINED PRESENTATION Global Level	Assets							
	Land Area (000 ha)	Harvested Area (000 ha)	Biomass stock (million metric tonnes)			Number of Heads (000)	Producing Animals/Slaughtered (000)	Employment in Agriculture (1000)
			Above-ground biomass	Below-ground biomass	Dead wood			
Agriculture								
Arable Land and Permanent Crop								
Crops Primary								
Permanent Meadows and Pastures								
Live Animals and Livestock Primary								
Forest								
Fisheries								
Inland water								
Other Land								

SOURCE: FAOSTAT Database

	Data available
	Data not available

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SEEA-Agriculture: Reference Combined Presentation

- **Inputs and Outputs:** Inputs are environmental and economic resources and factors of production used to produce agricultural products, with economic values also reported. Outputs are finished goods are expressed both in physical and economical terms, based on FAOSTAT data.

SEEA-AGRI COMBINED PRESENTATION Global Level	Inputs						
	Irrigation Water	Energy Use	Synthentic Fertilizer			Manure (N content)	Pesticides
	(10^9 m3/yr)	(Terajoule)	N (000 T)	P (000 T)	K (000 T)	(000 T)	(000 T)
Agriculture							
Arable Land and Permanent Crop							
Crops Primary							
Permanent Meadows and Pastures							
Live Animals and Livestock Primary							
Forest							
Fisheries							
Inland water							
Other Land							

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SEEA-Agriculture: Reference Combined Presentation

- **Environmental Impacts** are computed from inputs and assets, involving e.g., use of synthetic and organic fertilizers, land use and land use change, water data, collected in FAOSTAT. Derived indicators provided as example are GHG emissions per commodity.

Outputs															Environmental Impacts
Domestic production			Value added	GDP	Exports				Imports				Food Consumption/Nutrition		GHG Emission (CO2 eq) from Agriculture
Production (000 T)		Gross Production Value (current million US$)	Prices in constant 2005 million USD $	USD million dollars (current)	M3	000 (Head)	(000 T)	Currency (1000 $)	M3	000 (Head)	(000 T)	Currency (1000 $)	Food (000 T)	Kcal/per capita/per day	(Gigagrams)
000T	M3														

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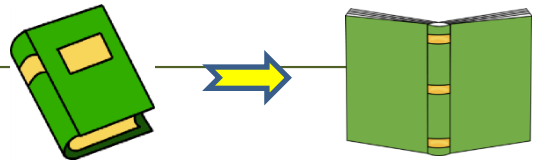
SEEA-Agriculture: finalization activities



- A revised draft guidelines being prepared for a second global consultation (Oct-Nov 2015), with the final document to be submitted for adoption by the UNSC in Mar 2016

- Sponsored by the Global Strategy, which will publish an intermediate draft in Sep 2015 to document work carried out to date

- Finalized SEEA Agriculture to include a Reference Combined presentation using FAOSTAT data, and a tiered approach for easy implementation in developing countries

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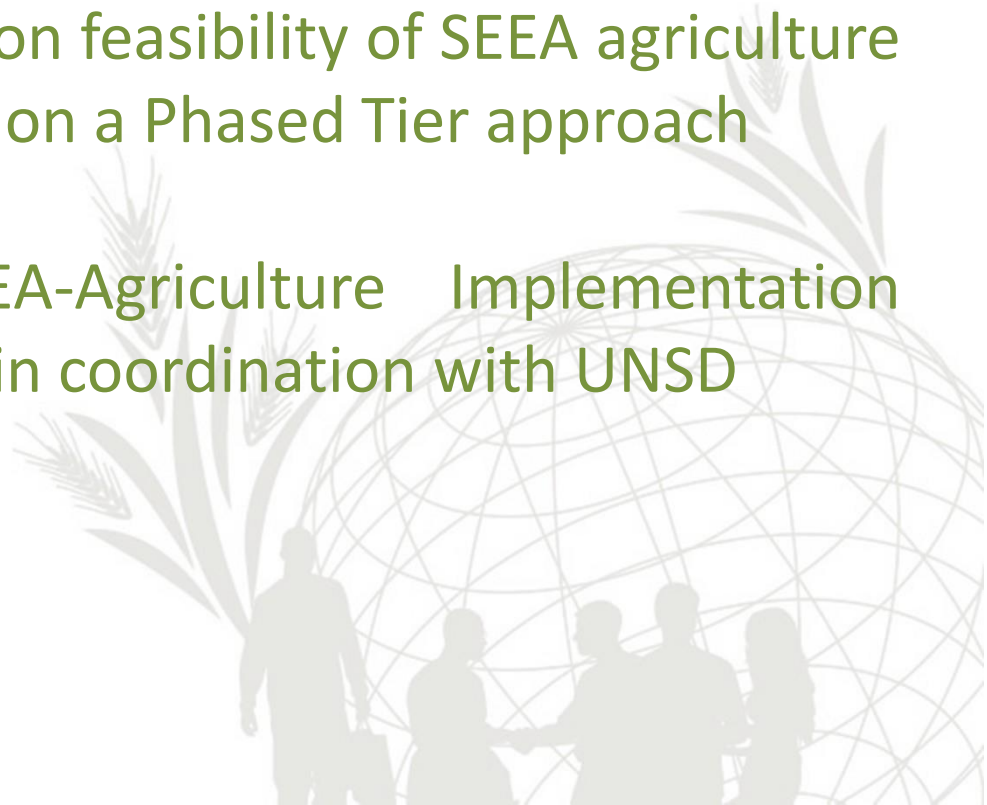
SEEA-Agriculture: Planned Implementation, 2016

- Additional piloting with practical implementations of SEEA-Agriculture activities, focusing on deriving indicators for SDG target monitoring, based on country priorities
- Synthesis of lessons learned on feasibility of SEEA agriculture capacity development based on a Phased Tier approach
- Develop and publish SEEA-Agriculture Implementation guidelines for country work, in coordination with UNSD



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Conclusions

- Ongoing progress on finalizing draft of SEEA Agriculture, with clear timelines and milestones towards submission to UNSC for adaption in Mar 2016

- Inclusion of additional global combined presentation facilitating a phased approach to development of SEEA tables and computation of initial indicators

- Planning of follow-up capacity development activities with countries building on FAO expertise in coordination with UNSD

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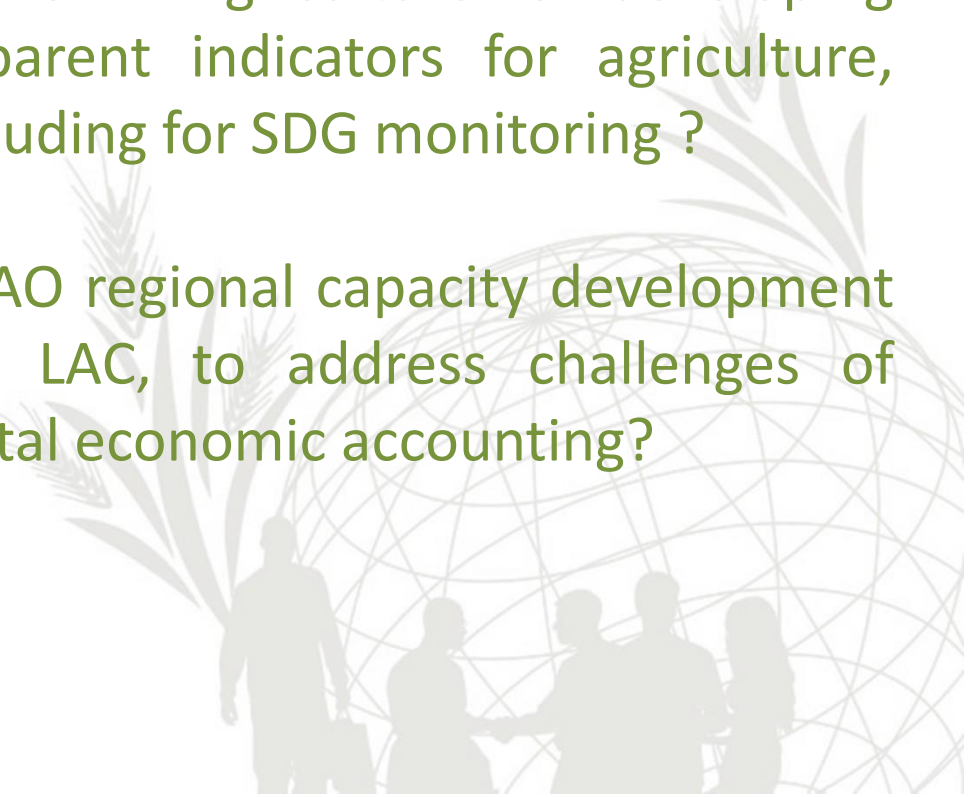
Discussion/Recommendations sought from IICA

- Does IICA welcome the SEEA-Agriculture as a novel statistical framework for achieving coherency in national reporting in joint environmental and economic accounts of relevance to agriculture, forestry and fisheries ?

- Does IICA endorse the role of SEEA-Agriculture for developing internationally sound and transparent indicators for agriculture, forestry and fisheries statistics, including for SDG monitoring ?

- Does IICA wish to encourage FAO regional capacity development activities on SEEA-Agriculture in LAC, to address challenges of Member Countries on environmental economic accounting?



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Further Comments and Requests:

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Thank You!