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System of Environmental Economic Accounting for Agriculture (SEEA-AGRI)

A measurement framework for agri-environmental Indicators and analysis

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1. Introduction

Agriculture, fishing and forestry activities are the very core of our relationship with the environment. Together with the need for water, these activities provide much of the nutrition, fibre, fuel and shelter that are basic human needs. In many economies, the connection between the production of agricultural products and the ultimate consumer has been significantly stretched through technological advances and the resulting urbanization of populations. Nonetheless, in many parts of the world economies remain directly dependent on agricultural activities both in terms of production (which may account for upwards of 20% of GDP in many countries) and in terms of a country's human and social fabric since often more than 80% of people live in rural areas and are directly involved in agricultural activities.

As human populations grow there have been corresponding increases in demand for agricultural outputs (in this paper covering, for ease of exposition, agricultural, fishing and forestry activities) and, as a consequence, increasing pressures on the environmental assets that form a base for their production. It is the role of agri-environmental indicators to reflect the trends in the relationships between population growth, agricultural outputs and environmental pressures.

Of course, these relationships are complex and variable because the way in which the agricultural outputs are produced varies with the environmental surroundings and the available technology. Consequently, making comparisons over time and across countries (and even within countries) is fraught with challenges. Indeed, the variations may be sufficient motivation to avoid the issue of comparison altogether and simply target the collection of information for specific outputs produced in specific locations (e.g. rice produced in Bali).

However, such a choice leaves the cupboard quite bare in terms of obtaining a broad understanding of the economy-wide and society-wide challenges of providing food, fibre, fuel and other basic needs. Ultimately, without an ability to compare between alternatives, in terms of either location or over time, the question of choice of policy response becomes far less meaningful.

To fill the cupboard and to provide information to compare, in broad terms at least, the different demands for agricultural outputs and related environmental pressures, the FAO has, for many years, been engaged in the collection and development of a wide range of data and more recently associated agri-environmental indicators. Traditionally, however, the data and indicators have not reflected in a direct way the links between particular agricultural outputs and the associated environmental pressures. The challenge here has been that the information on agricultural outputs (e.g. crops (wheat etc), livestock, fish, timber) is not usually aligned and classified in the same way as information on the related environmental assets (e.g. water, energy, soil, land, etc). In effect the "economic" production data are not meshed with the "environmental" information.

To help cross this gap and thus integrate economic and environmental information, the United Nations Statistical Commission, commenced a process in 2007, to elevate a long history of work on environmental-economic accounting, to the level of an international statistical standard. In 2012, the UNSC adopted the System of Environmental-Economic Accounting 2012 – Central Framework (SEEA CF) as the international statistical standard in this area. SEEA CF, a joint publication by UN, European Commission, FAO, OECD, IMF and World Bank, provides internationally agreed measurement boundaries and treatments for the integration of economic and environmental information in both monetary and physical terms.

The SEEA CF does not focus on specific activities, such as agriculture, but rather is 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. The coverage includes accounting for different types of physical flows (such as energy, water, waste

and air emissions) and for different types of environmental assets and natural resources (such as minerals, soil, timber, fish and water).

Taking the SEEA CF as a starting point, SEEA Agriculture (SEEA Agri) extends and applies relevant accounting treatments such that economic and environmental information pertaining to agricultural activities (including fishing and forestry) can be integrated. Data organized using the SEEA Agri framework can thus serve as a basis for the measurement of meaningful and comparable agri-environmental indicators.

This paper describes the broad objectives of the SEEA Agri project (Section 2), the conceptual approach to the application and extension of the SEEA CF (Section 3) and the analytical possibilities that emerge (Section 4). Section 5 outlines the progress made so far and the proposed next steps in the project.

The paper does not address the many measurement challenges that will be confronted where SEEA Agri is applied in practice, but some of the issues faced so far in developing the base asset and flow accounts are described in Section 5. While these challenges are recognized, it is considered necessary, in the first instance, to specify appropriate and comparable measurement concepts such that the measurement challenges are confronted with an integrated end goal in sight.

2. Objectives of SEEA Agri project

Within the broad idea of integrating environmental and economic information the SEEA Agri project has a range of particular objectives. As indicated in the introduction one of these objectives is the provision of an integrated database of comparably defined economic and environmental information such that improved agri-environmental indicators might be produced.

Linked to this objective is that more detailed analysis of agriculture, fishing and forestry activities might be able to be undertaken. A first angle of inquiry lies in understanding natural resource extraction and use relative to production and income – for example use of timber, fish and soil resources and the sustainability of production from these assets.

Secondly, there may be interest in better understanding, for various agricultural activities, the use of inputs such as water, energy, fertilizer and pesticides, and the associated generation of emissions and waste. Significantly, by using comparable measurement boundaries and classifications, the use of inputs and the generation of emissions and waste can be compared across different activities, products and processes.

A third angle of investigation is to consider the links between various activities and the associated land use and changes in environmental condition (or quality). This line of investigation leads to consideration of sub-national level information and making the connection between sub-national socio-economic data and data on changes in land use and land cover (and other indicators) at the same scale.

Finally, an objective of the SEEA Agri project is to examine connections between agricultural activities and associated food security, employment and population. This may be considered from a few perspectives, for example in terms of the number of people employed in particular activities, the proportion of population in rural areas dependent on agricultural activities, and the degree of access to water, energy and nutrition by the population. Section 4 provides some additional discussion on the analytical possibilities of the SEEA Agri project.

In addition to these analytical objectives, the SEEA Agri project has the potential to provide a broad framework for the improved organization and connectivity of information from across the FAO. Such an objective may also be relevant at a national level in terms of improving the

coordination of information on agricultural activities from multiple sources. The FAO has recently adopted new Strategic Objectives, with Strategic Objective 2, "Increase and improve provision of goods and services from agriculture, fisheries and forests in a sustainable manner" directly related to the types of outputs/ indicators that the SEEA Agri will be able to generate.

SEEA Agri does not represent a replacement for the long established conceptual framework of Economic Accounts for Agriculture. These accounts reflect a view of agricultural activities from the perspective of the sequence of national accounts described in the SNA. They thus consider the monetary accounts of the SNA but do not extend to consideration of the link to natural resources and environmental assets (indeed they explicitly exclude this aspect of accounting) nor do they provide links to flows of emissions and waste. SEEA Agri is therefore a much broader application of accounting principles and techniques to agricultural data reflecting the potential for integrating economic and environmental information as presented in the SEEA Central Framework. In this context, economic accounts for agriculture can be considered complementary to the SEEA Agri and data for any overlapping areas should be integrated.

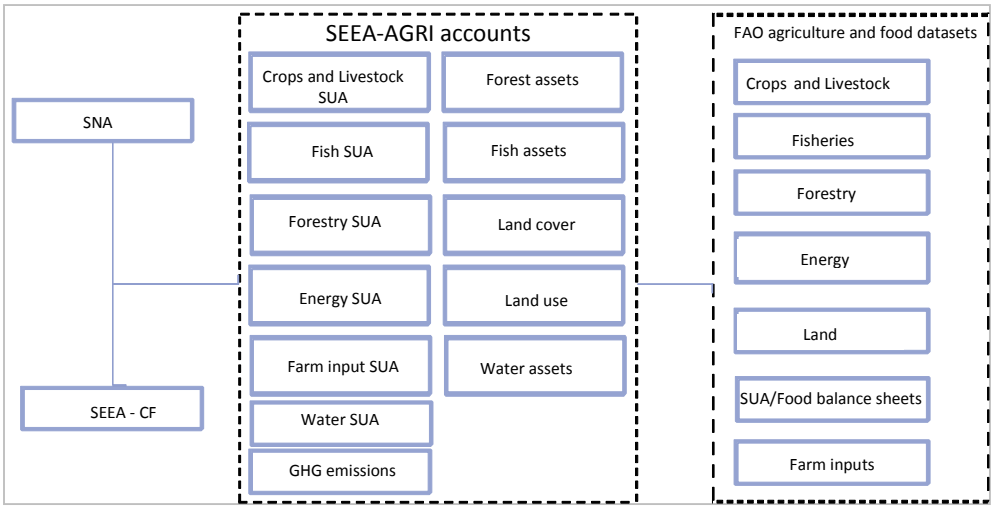
3. Conceptual approach: Base accounts

The approach used in SEEA Agri is a two step process of first developing **base accounts** (see figure 1.) on various topics and areas and then integrating the relevant information in what is referred to in the SEEA CF as a **combined presentation**. 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. This section describes the base accounts and Section 4 describes the combined presentation.

Four main types of base account are envisaged:

- Physical flow supply and use tables (PSUT)
- Monetary supply and use tables
- Environmental asset accounts
- Land use and land cover accounts

Figure 1: ***The SEEA-AGRI using SNA/SEEA and FAO datasets***



Physical flow supply and use tables are described in the SEEA CF chapter 3. In the context of SEEA Agri the proposed approach is to develop individual PSUT for (i) each relevant

agricultural output (e.g. crops (e.g.wheat), fish, timber); (ii) each relevant input (e.g. water, energy, fertilizer); and (iii) each relevant residual flow (e.g. greenhouse gas emissions).
Each PSUT is compiled using a measurement unit appropriate to the specific output, input or residual and hence the different PSUT cannot be aggregated. Using appropriate factors or additional information, a PSUT for a specific output, input or residual can be presented using a variety of measurement units depending on analytical requirements. For example, a PSUT for wheat might be compiled in terms of tonnes or in terms of calories to provide information for the analysis of nutrition.

The precise form of the PSUT will vary depending on the context and will vary from the standard PSUT shown in the SEEA CF. However, the fundamental supply use identity (SEEA CF 3.35) and the classifications used in the SEEA CF are applied. Templates for selected SEEA Agri PSUT are shown in Annex 1.

A key feature of the PSUT in SEEA Agri is the level of detail targeted in terms of economic activity. To maximize the analytical potential of the combined dataset it is necessary to organize data below the broad groupings of agriculture, forestry and fishing and instead aim to integrate information by type of product (e.g. wheat, fish, timber) and/or by type of process (e.g. irrigated crops, feedlots, aquaculture, plantation).

It is undoubtedly the case that compilation of all possible PSUT will be difficult to achieve. However, the intention is to provide a broad, comprehensive, and perhaps idealistic, framework in the first instance such that all relevant data can be place in context. Subsequent analysis of data gaps should facilitate a discussion on whether additional data should be collected, modeled or estimated in other ways. The benefit of a comprehensive framework is that all new and existing data can be confronted and thus micro and macro trends should be able to be better related and understood.

Monetary supply and use tables are based on the structures described in the 2008 SNA. These tables organize all of the information concerning the production and imports of goods and services and the associated flows of income and final demand. For each country these tables should provide a basis for the detailed assessment of industries and products aligned with measures of GDP.

As for the SEEA Agri PSUT, the monetary supply and use tables used in SEEA Agri should be compiled at a greater degree of detail than would be present in standard monetary supply and use tables compiled by national accounts departments. The expectation here is that, over time, research into relevant production costs and incomes for specific products will build a set of information that can be brought together with the aggregated information that is reflected in standard monetary supply and use tables. It is noted that information on detailed production costs and incomes may be more readily available than expected although it may require significant reworking to align with relevant measurement boundaries.

In the case of both the monetary and physical supply and use tables envisaged for the SEEA Agri it is not intended that they encompass the full life cycle of supply and use flows that will be linked to agricultural activities. Thus, for example, it is not intended to include in the supply and use tables information on furniture making in relation to timber production, or details of food manufacture and distribution in relation to crop production. Rather the aim is to provide greater detail on the primary activities themselves and allow analysis on these other aspects of the value-added chain to be captured in standard supply and use tables. The result of this focus means that all of the industry and product detail proposed in SEEA Agri centres on the primary activities of agriculture, fishing and forestry while retaining supply use identities and links to standard economy-wide supply and use tables.

Environmental asset accounts are described in the SEEA CF chapter 5. A basic asset account records the opening and closing stocks of assets (at the beginning and end of the accounting year) and also the additions and reductions in stock that occur through the year. Additions and reductions may be due to economic activity (e.g. replanting of forests, harvest of wild fish) or due to natural causes (e.g. natural growth of timber resources or losses of forests due to storms). Asset accounts may be compiled in physical and monetary terms, noting that generally there are few transactions in environmental assets and hence the compilation of monetary accounts will usually depend on physical accounts being in place.

For the activities of fishing and forestry the connection between the products and the environmental assets will be quite direct, with the production recorded in PSUT directly related to the extraction or harvest from the stock (recorded in the asset account). However, for agricultural activities, in particular crop production, the connection to environmental assets is real but less direct. For example, changes in the stock of soil resources and water resources (two key inputs for crop production) will not have linear or direct relationships with the production of crops. Nonetheless, it is relevant to aim to record changes in these environmental assets as an important part of analyzing production.
Land use and land cover accounts are types of environmental asset accounts also described in the SEEA CF chapter 5. They vary from the environmental asset accounts described just above in that there is little focus on the overall change in stock since at a national level the total area of land generally stays the same over time (or changes marginally). Rather the focus in land accounting is on changes in composition of the use or cover of the land (and inland waters) within a country – and changes in use of open waters within a country's exclusive economic zone (EEZ) as appropriate.

For the purpose of SEEA Agri, interest lies in understanding the total allocation of land and changes in land use and land cover for (i) areas of forest and wooded land, (ii) areas related to fishing and aquaculture – including open waters, and (iii) areas related to agricultural production.

A possible extension to the land accounts is to integrate information on the condition or quality of particular areas and on the broad range of services that may be generated from a given area. This extension is covered in SEEA Experimental Ecosystem Accounting where the measurement of ecosystem condition and ecosystem services within a national accounting context is described.

With information from these various base accounts, the second step of developing a combined presentation or database is undertaken. It is reasonable to ask whether it would be more efficient to collect only the data used in the combined presentation. While this approach is possible (and indeed commonly applied), the problem is that these individually sourced data are not confronted with other related data within an accounting framework and hence their accuracy and consistency with other information can be questioned.

For example, it may seem reasonable to use a directly collected estimate from farmers of water used in agriculture to derive an indicator of the efficiency of water use. However, it is not until one has a complete recording of water flows into and out of the economy that it is possible to test whether the directly collected estimate is reasonable in an overall context. It is the ability to place individual estimates in context and hence relay comprehensive and internally consistent descriptions of trends that is the essence of accounting and the reason it is such an important and enduring technique.

4. Combined presentations and analytical possibilities

The main "face" of SEEA Agri is reflected in its combined presentation. The SEEA Agri combined presentation organizes selected pieces of information in a consistent manner by applying the structures and classifications used in the base accounts. The organization of the combined presentation reflects a generalized production function containing information on outputs, intermediate inputs, residuals and assets. This organization highlights the potential to derive indicators of efficiency, productivity and resource use for individual products and also comparisons between similar types of flows for different products (for example, trade-offs between the use of water and energy in the production of certain crops).

TABLE 1: SEEA Agri – Sample combined presentation

				Industry	**Industry: ISIC 01 Agriculture**					Total agriculture	**ISIC 02: Forestry**	**ISIC 03: Fishing**	**Non-standard outputs**	**TOTAL AGRICULTURE, FORESTRY and FISHING**	Total Other industries	**ECONOMY WIDE TOTAL**
				Product	Wheat	Rice		Other cereals	Other products							
				Process		Irrigated	non-irrigated									
			Unit of measure													
Monetary values																
	Output		currency													
	Intermediate consumption		currency													
	Gross value added		currency													
	Compensation of employees		currency													
	Gross operating surplus		currency													
	Subsidies		currency													
	Capital formation	by asset type	currency													
	Capital stock	by asset type	currency													
Physical measures and prices																
Output																
	Gross production		tonnes													
	Losses	by type of loss	tonnes													
	Net production/sales		tonnes													
	Farm gate prices		$ / tonne													
Intermediate inputs																
	Energy	total	joules													
		by fuel type	joules													
	Water	by source	m3													
	Fertilisers	N	tonnes													
		P	tonnes													
		K	tonnes													
	Pesticides															
Labour inputs																
	Employed	by age / gender	number / hours worked/FTE													
Produced assets (non-environmental)																
	Machinery and equipment	by type of equipr	number / average age													
Environmental assets																
	Land used	by land quality / soil type	area													
		area planted / area harvested														
	Permanent crops		area													
	Cultvated livestock		number													
	Natural timber resources		m3, area													
	Cultivated timber resources		m3, area													
	Water resources		m3													
Residual flows																
	GHG emissions	by type of activity	tonnes													
	Wastewater		m3													
	Solid waste		tonnes													
Additional data																
	Household final consumption		tonnes													
			calories													
	Exports		tonnes													
	Imports		tonnes													
	Population															

Table 1 provides an indication of the type of combined presentation being proposed for SEEA Agri. It is important to recognize that while it may be conceptually possible to enter data in every cell, in practice available data may mean that different variables are recorded at different levels of detail. Consequently, analysis may require modeling of missing data or the compilation of indicators at higher levels of aggregation.

It is also important to recognize that the various pieces of information are generally recorded in different measurement units and in these cases direct aggregation across variables is not possible. At some levels, information in monetary terms is available and these information can be aggregated. Where price information is available for a number of related variables (e.g. intermediate inputs) it may be possible to derive aggregate measures of volume change (e.g. of total intermediate inputs) by constructing volume indexes using price weights.

Building on the introduction to SEEA Agri analysis in Section 2, a viewing of Table 1 helps to highlight the analytical possibilities to a greater extent. By organizing the information according to common activity, product and process structures, there is a wide variety of what might be termed "production function analysis" that can be undertaken. For example, using wheat as an example, it would be possible to analyse the relationships between the output of wheat and inputs of water, fertilizer and pesticide, and energy used in planting and harvesting, labour inputs, changes in land area used and soil quality, the generation of residuals such as emissions, crop residues, losses in transportation, the use of produced assets such as sowing and harvesting equipment, costs of production, value added and incomes.

Since the intent is for these types of information to be available for different crop types and for different agricultural outputs – eg livestock production – the analytical potential of data organized in this way should become apparent. Without requiring further analysis, data of this type will enable derivation of a variety of indicators and many comparisons. More detailed analysis, for example, of the use of water in agriculture relative to other industries, will require analysis of the underlying base accounts.

The structuring of information into rows and columns may give the impression that the dataset is immediately suitable for application in more extensive input-output and related modeling. However, there is no intention in the design of the SEEA Agri to develop a dataset that encompasses all parts of the economy. Rather the focus is on articulating the outputs and inputs associated with the core agricultural activities, including forestry and fishing, since it is these activities that have the most direct connection to the environment. Thus, for example, the SEEA Agri dataset does not, on its own, permit analysis of the demand for wooden furniture in relation to areas used for forestry as might be considered in a complete input-output analysis.

At the same time, the data in SEEA Agri could be usefully employed in the preparation of environmentally-extended input-output tables that in turn could be used to analyse these types of economy-wide questions.[1] Indeed, the framing of the SEEA Agri tables using extensions of standard national accounting classifications and measurement boundaries is intended to facilitate this type of extension and analysis.
A closely related extension could be the derivation of footprints that link, for example, demand for food with agricultural activity and relevant environmental flows.
All of the discussion to this point considers analysis in structural terms at a point in time. In addition it is envisaged that the range of data would be developed as a time series and, once appropriately structured in a database, time series analysis would be possible.

[1] The preparation and use of environmentally-extended input-output tables is introduced in SEEA 2012 **Applications and Extensions, chapter 3.**

The final analytical frontier to be considered in SEEA Agri is spatial analysis. Conceptually, this analytical dimension might be incorporated into the combined presentation by adding additional columns to the presentation. For example, for wheat, information on outputs and associated inputs could be shown by sub-national region. However, of more interest may be the presentation of information on a range of agricultural outputs and inputs for a single region such that trade-offs between alternative uses of land within a region might be analysed.

A critical issue for spatial analysis is the determination of the regions about which information should be compiled. Choices include regions based on standard administrative units (although there are often a variety of levels of such units) and regions based on landscape and ecological criteria. At this stage no choice has been made on this issue. In part, the choice may depend on what data are available. Nonetheless, the potential to extend the SEEA Agri database to support spatial analysis should be apparent. Additional benefit would be obtained by incorporating demographic information by spatial area into the database, including information on gender and age.

5. Next steps

Deliberately, this paper presents a conceptual framework for organizing economic and environmental information pertaining to agricultural activities without describing the myriad of real measurement challenges that must be confronted to put this framework in place.

To "put some meat on the bones" of the conceptual framework described here, work has commenced within the FAO to bring together the information currently stored in various FAO databases to form base accounts and subsequently a combined presentation and associated indicators. To date, initial PSUT have been developed for all agricultural outputs (including crops, livestock, fish and timber) and for some inputs (fertilizer and pesticides). Environmental asset accounts are being developed for timber and fish resources. Progressively, this work will be expanded to cover PSUT for water, energy and emissions, and accounts for land use and land cover.

The initial findings are that, while there are some inconsistencies between the available data and the ideal measurement boundaries, in general, key pieces of information are available to allow compilation of the base accounts. What will need to be assessed further is the consistency of coverage and coherence between different datasets and this is likely to raise some particular and challenging issues. Examples of the progress to date are in the following paragraphs.

Supply Utilization Table (PSUT) Crops and Livestock. In describing physical flows in terms of supply and use, it is intended to maintain a clear distinction between raw and processed commodities. This has been possible using two different FAOSTAT domains: the Supply and Utilization Accounts (SUA) and the Food Balance Sheets (FBS) domain. A complete time series from 2002 up to 2009 was generated as planned.

Supply Utilization Table (PSUT) Non Food Items. The Supply and Utilization Accounts (SUA) FAOSTAT domain has supplied a consistent time series of selected items (including maize for forage) of the following variables: Production, Import, Feed, Waste, and Export from 2002-2009. It has then been possible to fulfill the goal of a supply and use estimate according to SEEA CF.

Supply Utilization Table (PSUT) Fertilizers. FAO Fertilizer dataset contains detailed data from 2002 onwards. The fertilizer dataset provides the fertilizer in both product and nutrient terms. In this last case fertilizer products are converted into the amounts of primary element they contain: Nitrogen (N), Phosphate (P205), and Potash (K20). These N, P, K summary values are used in this PSUT.

Supply Utilization Table (PSUT) Forest products: FORESTAT database contains very detailed timber data and it is possible to follow the flows of forestry products, starting from roundwood and obtaining amount of sawnwood or wood pulp. It has then been possible to follow the SEEA CF and distinguish between total supply of raw commodity and manufacturing industry production. Data gaps remain for the gross felling and felling residuals, and these could constitute a starting point for a further data collection and analysis in the SEEA-Agri framework.

Asset Accounts for Land Use: The SEEA accounting structure for land use foresees additions to stock and reduction in stocks being accounted for. This detailed country data is not currently available in FAO. Moreover is not possible, based on current datasets, to describe changes in allocation of land, as in the ideal requirements of the SEEA. But it should be noted that recent changes to the FAO Land-use questionnaire will provide elaborated data for land use stock and change, and this information will start to be available in the near future.

Taking into account feedback on the conceptual framework described here, it is intended to continue the initial compilation of base accounts using data available within the FAO and to present initial results early in 2014. Discussions are also intended with possible pilot countries who may be interested in testing the framework (or parts thereof) using data in their country and other local expertise.

An important aspect of the development and testing is the recognition that SEEA Agri should be tested in a modular and flexible fashion. Thus, initial work within a country may focus solely on crop production for major crops, or plantation timber, or capture fisheries. Indeed, it is recommended that development and testing at a country level focus on the country's major agricultural activities since information on those activities will be most relevant to policy discussions and is more likely to be available.

It is intended that the outcomes of these various streams of testing can be brought together into a SEEA Agri publication that describes a conceptual framework, the possible measurement approaches and challenges, and the applications and associated analysis. The work is also expected to provide input into the further development of agri-environmental indicators.

The development and discussion of the SEEA Agri program is being conducted within the broader context of a range of international statistical initiatives including implementation of the SEEA Central Framework, the Global Strategy for the Improvement of Agricultural Statistics, the advancement of the revised Framework for the Development of Environment Statistics and work underway to improve the implementation of the System of National Accounts and associated economic statistics. In due course, work that may take place to develop SEEA Agri at a country level should leverage off all of these and other statistical initiatives.

Annex: General form of physical supply and use tables (PSUT) and environmental asset accounts

a. PSUT for crops and similar products

CROPS (and other commodity and food balance products (excluding fish))																				
		SUPPLY						USE												
		Domestic production			Imports	TOTAL SUPPLY		Intermediate consumption						Change in inventory	Household consumption		Exports	Losses/Waste	TOTAL USE
		Gross production	Harvest losses	Net output (farm gate)/ Production				Within activity uses (e.g seed)	Other ag uses (e.g. feed)	Energy use (e.g. biofuels)	Use in food manufacturing	Other industry use	TOTAL		Food/nutrition	Other purposes			
Cereals	Rice																		
	Wheat																		
	Coarse grain																		
Oil crops																			
Pulses																			
Roots and tubers																			
Vegetables																			
Sugar																			
Treenuts																			
Fruit																			
Citrus																			
Fibre crops																			
Meat																			
Eggs, milk, processed milk																			

b. PSUT for forest products

FOREST PRODUCTS																			
	SUPPLY							USE											
	Domestic production			ISIC 16: Manufacture of wood products	Other production of forest products (incld household prodn)	Imports	TOTAL SUPPLY	Intermediate consumption				Change in inventory	Household consumption			Exports	Losses/Waste	TOTAL USE
	ISIC 02: Forestry							ISIC: Manufacture of wood products	ISIC class	Other industries	TOTAL		Energy	Food/nutrition	Other uses			
	Gross product	Felling residues	Net output (roadside) / Production					For production of wood products	For generation of energy products (incl charcoal)									
Round wood																			
Industrial roundwood																			
Woodfuel																			
Non-wood forest products																			
Wood products																			
Sawnwood																			
Wood based panels																			
Wood pulp																			
Paper and paperboard																			

c. PSUT for fish products

FISH PRODUCTS																					
			SUPPLY							USE											
			Domestic production				Imports	TOTAL SUPPLY		Intermediate consumption							Change in inventory	Household consumption	Exports	Losses/Waste	TOTAL USE
			ISIC: Fish capture and production			Other production (incl household catch)				ISIC: Manufacturing fish and fish products (1020)					Other industry use	TOTAL					
			Gross catch	Discarded catch	Landings					Human consumption				Fishmeal & Fishoil							
										Fresh	Frozen	Curing	Canning								
Capture fishin	Inland																				
	Marine																				
Aquaculture	Inland																				
	Marine																				
Manufactured fish products																					

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