

# Economic accounts for agriculture manual

2024 edition



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# Preface

The economic accounts for agriculture (EAA) are a satellite account of the European system of national and regional accounts, adapted to the specific nature of the agricultural sector, providing complementary information and concepts. Although the structure of EAA matches very closely that of national accounts, their compilation requires the formulation of appropriate rules and methods.

National statistical institutes or ministries of agriculture are responsible for data collection and calculation of national EAA, in accordance with EU Regulations. Eurostat is responsible for the production of aggregated data for the European Union (EU). The EAA are the official harmonised source of information about agricultural industry of the EU, its Member States, the euro area, the EFTA countries and other candidate and potential candidate countries to the EU. They serve the needs of the common agricultural policy (CAP) and of the policy makers at European, national and regional levels. They are key to many other different users, including governments, businesses, farmers and farmers associations, academic and researchers and the general public. The growing interest in timely and high-quality statistics has made the harmonisation of compilation practices among EU Member States a primary necessity.

Regulation (EC) No 138/2004 of the European Parliament and the Council sets up the EAA in the Union by providing for the methodology and the time-limits for the transmission of the agricultural accounts. The EAA are satellite accounts of national accounts, as provided for by the European System of Accounts (ESA 2010), with the purpose of obtaining results that are harmonised and comparable between the Member States in order to draw up the accounts for the purposes of the Union. The EAA provide important annual macroeconomic data to European policy-makers three times per year as provided for in Annex II to the above mentioned Regulation.

This methodological manual lays out guidelines to facilitate the compilation of the EAA and ensure harmonisation between data compilers. Additionally, it provides methodological clarifications to the requirements laid down in Annex I of the EAA Regulation.

The manual is structured in 14 chapters and two annexes.

Chapters 1 to 7 contain the methodological points of the Annex I of Regulation (EC) 138/2004 and introduce boxes clarifying, providing methodological guidelines or numerical examples to the provisions laid down in the Regulation. The points of the Regulation are reproduced as in the legal text with few changes indicated in italics. Those changes relate mostly to references which were added or updates related to the necessary alignment with the ESA 2010.

Chapter 8 covers EAA revision policy that provides guidelines for a harmonized revision of EAA.

Chapters 9 to 14 relate to technical aspects of the data production business process. Annex I displays the list of detailed items of the production accounts and capital accounts in EAA while Annex II contains tables which can be used as intermediate step for the compilation of the EAA.

All numerical examples of the manual and the content of the annexes are also available in separate excel files.

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# Abbreviations and acronyms

Code	Description
ALI	Agricultural labour input
AMECO	annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs
AWU	Annual Work Unit
CAP	Common Agricultural Policy
CFC	Consumption of fixed capital
CIRCABC	Communication and Information Resource Centre for Administrations, Businesses and Citizens
CPA	Statistical classification of products by activity
DGAS	Directors' group on agricultural statistics
DSD	dataset structure definition
EAA	economic accounts for agriculture
EAFRD	European Agricultural Fund for Rural Development
EAGF	European Agricultural Guarantee Fund
EFTA	European Free Trade Association
ESA	European System of Accounts
ESS	European Statistical System
EU	European Union
Eurostat	the statistical office of the European Union
FADN	Farm Accountancy Data Network
FISIM	financial intermediation services indirectly measured
FSDN	Farm Sustainability Data Network
GDP	gross domestic product
GFCF	gross fixed capital formation
GFS	government finance statistics
GVA	gross value added
ISIC	International Standard Industrial Classification of All Economic Activities



IFS	Integrated Farm Statistics
ILO	International Labour Organisation
ICT	information, communications and telecommunications
KAU	Kind-of-activity unit
LFS	labour force survey
LKAU	Local kind-of-activity unit
NA	national accounts
NACE	Statistical classification of economic activities in the European Community
NUTS	nomenclature of territorial units for statistics
PIM	perpetual inventory method
PPS	purchasing power standards
REAA	regional economic accounts for agriculture
R&D	research and development
RNA	regional national accounts
SDG	sustainable development goals
SDMX	Statistical Data and Metadata eXchange
SDTT	standard data transmission tables
SNA	System of National Accounts
SO	standard output
TFP	total factor productivity
UAA	utilised agricultural area
VAT	Value added tax

# General Features of the Accounts

# Foreword

The revision of the European system of accounts (ESA 2010) (<sup>1</sup>) has led to some revisions of the basic methodology used for the EAA, to guarantee consistency with the ESA to allow harmonisation of the EAA both between Member States and with the central framework of the national accounts and to ensure that the changes to be made were feasible. This manual has been drawn up with these considerations in mind as, in addition to the concepts, principles and basic rules for compiling the EAA, it also refers to any adaptations to specific characteristics in the field of agriculture.

# **1.1 Introduction**

1.01. A system of integrated economic accounts should provide an overview of economic activities which is systematic, comparable and as complete as possible, to serve as a basis for analyses, forecasts and political measures. The vast number and variety of economic transactions and units covered by the system therefore have to be classified according to general criteria and set out clearly and simply in a coherent system of accounts and tables.

1.02. The European system of integrated economic accounts, which is derived from the United Nations revised system of national accounts (2008 SNA) (<sup>2</sup>), was created in response to the specific needs of the European Union. It lays down concepts, definitions, accounting rules and uniform classifications to be used by the EU Member States.

1.03. The economy of a country is the sum of the activities of a very large number of units engaged in many different types of transaction with a view to producing, financing, insuring, distributing and consuming. Units and groups of units considered in the context of a system of national accounts have to be defined in terms of the economic models under examination. The ESA 2010 is characterised by the use of two types of unit and two corresponding ways of subdividing the national economy (*ESA 2010, 1.54-1.56*).

1.04. In order to analyse flows involving income, capital, financial transactions and assets, it is essential to select units which depict the interaction between economic operators (institutional units *cf. ESA 2010, 1.57*). In order to analyse the production process, it is crucial to select units which illustrate technico-economic relationships (i.e. kind-of-activity units at local level and units of homogeneous production).

1.05. Thus, the economy may be broken down in two different ways:

- (') European System of National and Regional Accounts ESA 2010, Luxembourg 2013.
- (2) System of National Accounts, 2008. Joint publication by the United Nations, European Commission, International Monetary Fund, OECD and World Bank.

i. into institutional sectors or subsectors, which represent groups of institutional units;

ii. into industries, which comprise groups of kind-of-activity units at local level (industry) or units of homogeneous production (homogeneous branch).

1.06. The main purpose of the EAA is to analyse the production process and primary income generated by it. The accounts are therefore based on the industry concept.

1.07. The EAA are a satellite account providing complementary information and concepts adapted to the particular nature of the agricultural industry. Although their structure very closely matches that of the national accounts, their compilation requires the formulation of appropriate rules and methods.

1.08. A distinction needs to be made between the income generated by agricultural production and the income of agricultural households, the latter including, apart from income from agricultural activity, income from other sources (from property, social transfers, etc.) that agricultural households may have. These two types of income (income generated by agricultural production and the income of agricultural households) are measured for two distinct purposes, which require two distinct methods of breaking down the economy: the first, for the EAA, is based on production units, which are defined by reference to an economic activity; the second is based on households (i.e. institutional units) whose main source of income is independent agricultural activity.

# 1.2 The basic unit and the agricultural industry

#### 1.2.1 Basic unit

1.09. In order to analyse flows occurring in the process of production and in the use of goods and services, it is necessary to choose units which emphasise relationships of a technico-economic kind. This requirement means that as a rule institutional units must be partitioned into smaller and more homogeneous units with regard to the kind of production. Local kind-of-activity units (local KAUs) are intended to meet this requirement as an operational approach (ESA 2010, 3.147) (<sup>3</sup>).

1.10. The local kind-of-activity unit (local KAU) is the part of a KAU which corresponds to a local unit. The local KAU is called an establishment in the 2008 SNA (5.2) and ISIC Rev.4 (80. to 83.). A KAU groups all the parts of an institutional unit in its capacity as a producer contributing to the performance of an activity at class level (four digits) of the NACE Rev. 2 (the reference classification for economic activities, cf. 1.55) and corresponds to one or more operational subdivisions of the institutional unit's information system must be capable of indicating or calculating for each local KAU at least the value of production, intermediate consumption, compensation of employees, the operating surplus and employment and gross fixed capital formation The local unit is an institutional unit, or part of an institutional unit, producing goods or services situated in a geographically identified place (ESA 2010, 2.148).

#### **BOX 1 LOCAL KAUS**

When institutional units carry out more than one activity, they shall be partitioned with regard to the type of activity. Local KAUs enable this presentation to be made.

A local KAU groups all the parts of an institutional unit in its capacity as producer which are located in a single site or in closely located sites, and which contribute to the performance of an activity at the class level (four digits) of the NACE Rev. 2. (ESA 2010, 1.58).

<sup>(3)</sup> It should be pointed out that, although the ESA gives preeminence to local KAUs, the unit best suited to analyses of the production process is the unit of homogeneous production (UHP). This unit is used to analyse inputs and outputs, since it corresponds exactly to a type of activity. Institutional units are thus divided into as many UHPs as there are activities (other than ancillary). By grouping these UHPs it is possible to break down the economy into 'pure' (homogeneous) branches. A UHP cannot, as a rule, be directly observed. Therefore, the accounts of homogeneous branches cannot be compiled on the basis of groups of UHPs. The ESA describes a method for compiling these accounts. It involves attributing secondary production and the corresponding costs of activity branches to the appropriate homogeneous branches (ESA 2010, 2.153-2.156, 9.52 to 9.63).

Local KAUs are registered for each secondary activity; however, if the accounting documents necessary to separately describe such activities are not available, a local KAU will combine several secondary activities. The group of all local KAUs engaged on the same, or similar kind-of-activity constitutes an industry. An institutional unit comprises one or more local KAUs; a local KAU belongs to one and only one institutional unit (ESA 2010, 1.59).

1.11. Although a local KAU may correspond to an institutional unit or part of an institutional unit in its capacity as a producer, it can never belong to two distinct institutional units *(ESA 2010, 2.148)*. Since, in practice, most institutional units producing goods and services are involved in a number of different activities at once (a principal activity and one or more secondary activities), they can be broken down into the same number of local KAUs, if necessary information is available. Ancillary activities (purchases, sales, marketing, accounting, transport, warehousing, maintenance, etc.; cf. 1.27), however, cannot lead to the creation of a local KAU, unless they are carried out in a separate location, located in a region other than the local KAU they serve (ESA 2010, 3.13).

1.12. Basically, as many local KAUs should be recorded as there are secondary activities, but it can happen that statistical (accounting) information does not make it possible to separate a local KAU's secondary activities or parts of those activities from its principal activities. If an institutional unit producing goods or services contains a principal activity and also one or several secondary activities, it is subdivided into the same number of KAUs, and the secondary activities are classified under different headings from the principal activity. The ancillary activities are not separated from the principal or secondary activities. But KAUs falling within a particular heading of the classification system can produce products outside the homogeneous group on account of secondary activities connected with them which cannot be separately identified from available accounting documents. Thus a KAU may carry out one or several secondary activities. (ESA 2010, 2.149).

1.13. An activity can be said to take place when resources such as equipment, labour, manufacturing techniques, information networks or products are combined, leading to the creation of specific goods or services. An activity is characterised by an input of products (goods and services), a production process and an output of products. The principal activity of a local KAU is the activity where the value added of such activity exceeds that of any other activity carried out within the same unit. The classification of the principal activity is determined by reference to NACE rev. 2, first at the highest level of the classification and then at more detailed levels (ESA 2010, 3.10).

#### **BOX 2 SECONDARY ACTIVITY AND ANCILLARY ACTIVITY**

A secondary activity is an activity carried out within a single local KAU in addition to the principal activity. The output of the secondary activity is a secondary product (ESA 2010, 3.11).

A secondary activity is any other activity than principal activity of the unit, whose outputs are goods or services which are suitable for delivery to third parties. The value added of a secondary activity must be less than that of the principal activity (NACE rev. 2, 50.).

An ancillary activity (ESA 2010, 3.12) is an activity whose output is intended for use within an enterprise. An ancillary activity is a supporting activity undertaken within an enterprise in order to enable the principal or secondary activities of local KAUs to be carried out. All inputs consumed by an ancillary activity — materials, labour, consumption of fixed capital, etc. — are treated as inputs into the principal or secondary activity which it supports. Examples of ancillary activities are:

(a) purchasing; (b) sales; (c) marketing; (d) accounting; (e) data processing; (f) transportation; (g) storage; (h) maintenance; (i) cleaning; and (j) security services.

Enterprises have a choice between engaging in ancillary activities and purchasing such services on the market from specialist service producers. Own-account capital formation is not an ancillary activity.

## **1.2.2** Agricultural industry

1.14. By grouping all local KAUs engaged in the same type of activity, it is possible to establish an industry. This makes it possible to break down the economy by industry. The classification of these industries depends on the principal activity of the units thus grouped together. At the most detailed level of classification, as defined by ESA 2010, 2.150, an industry includes all local KAUs in the same class (four digit level) of NACE Rev. 2 and therefore engaged in the same principal activity as that defined in NACE Rev. 2.

1.15. Although the agricultural industry was formerly defined as a grouping of units of homogeneous agricultural production, the local KAU was chosen as the basic unit of description for the EAA so as

- i. to approach the EAA from the economic situation of agriculture, i.e. to take the existence of certain inseparable nonagricultural secondary activities into full account when measuring the total productive activity of agricultural units and
- ii. to remain consistent with the rest of the national accounts. This represents a shift from an analytical approach based on the concept of the unit of homogeneous production and homogeneous branch to a statistical approach based on the concept of the KAU at local level and industry.

1.16. Inseparable, non-agricultural secondary activities are activities whose costs cannot be observed separately from those of the agricultural activity. Examples are the processing of farm products on the farm, forestry, logging, tourism. The output of the agricultural industry thus results from two kinds of activity:

i. agricultural activities (main or secondary) performed by agricultural units; ii. non-agricultural inseparable secondary activities of agricultural units.

1.17. The agricultural holding, which is the unit currently used for statistical studies of agriculture (censuses, surveys of the structure of agricultural holdings), is the local KAU most appropriate to the agricultural industry (even though certain other units, such as wine or olive oil cooperatives, or units performing contract work, etc., have to be included in it). Nevertheless, it should be pointed out that the variety of agricultural activities that can be performed on agricultural holdings makes them a special type of local KAU. The strict application of the ESA rule to units and their group should in fact result in a division of the agricultural holding into several separate local KAUs in cases where several activities of the NACE Rev. 2 four-digit class are performed on the same holding and the information required according to paragraph 1.10 is available. The adoption of the agricultural holding as the local KAU of the agricultural industry in the national accounts and EAA is based on a statistical approach.

1.18. Thus, the accounts for the agricultural industry are essentially similar to the accounts of agricultural holdings (production and generation of income accounts). In order to avoid any ambiguity, however, it should be pointed out that the agricultural accounts are not accounts of enterprises whose principal activity is agricultural: firstly, they do not include all of these holdings' non-agricultural activities (those which can be separated from agricultural activities are excluded). Moreover, they include the agricultural activities of enterprises whose principal activity is not agricultural. Consequently, the adoption of the agricultural holding as the base unit for the EAA does not alter the fact that the agricultural accounts are agricultural industry accounts.

1.19. Since, according to ESA 2010, an industry comprises a group of units which carry out as their principal activity the same or similar types of activity, the definition of the agricultural industry in the EAA depends on the identification of the characteristic activities and units in that industry. The resultant selection of characteristic agricultural activities and units may lead to some differences between the EAA agricultural industry accounts and the national accounts (cf. 1.93).

1.20. The agricultural industry is treated as a grouping of all KAUs at local level which perform the following economic activities, as principal or secondary activity (cf. 1.60 to 1.66 for the precise definition of the agricultural industry):

- crop growing; market gardening; horticulture (including the production of wine and olive oil from grapes and olives grown by the same unit),
- farming of animals,
- crop production associated with animal husbandry,
- agricultural contract work,
- hunting, trapping and game propagation, including related service activities.

1.21. In addition to agricultural holdings, the agricultural industry comprises units made up of groups of producers (e.g. cooperatives) which produce wine and olive oil and specialised units which provide machines, material and labour for the performance of contract work.

1.22. Specialised units which provide machines, equipment and personnel for the performance of contract work at the agricultural production stage (commercial enterprises engaged in contract work or agricultural holders providing services as contractors) are treated as part of the agricultural industry. Under a stricter interpretation, these units, which must be included in the agricultural industry, must perform work which (a) is part of the agricultural production process, (b) is linked to the production of agricultural products, (c) is customarily performed by the agricultural holdings and (d) is actually performed entirely by specialist units providing machines, material and labour.

1.23. If, however, the contract work is not performed entirely by specialised units (e.g. if holders hire machines but employ their own workers), this activity must be recorded in Division 77 of NACE Rev. 2 (Rental and leasing activities); in this case, amounts paid by the holders to enterprises working under contract must be recorded as 'other goods and services' under 'intermediate consumption' (cf. 2.108)

1.24. Since the purpose of the EAA is to measure, describe and analyse the formation of income from agricultural economic activity (which, in the EU Member States, is almost exclusively a commercial activity), it was decided to exclude units for which the agricultural activity represents solely a leisure (<sup>4</sup>) activity. In contrast, units engaged in subsistence farming are included in the EAA. It should be pointed out that agricultural output for own final consumption by agricultural holdings must be recorded in the EAA.

#### BOX 3 UNITS EXCLUDED FROM EAA; UNITS ENGAGED IN SUBSISTENCE FARMING

Units excluded from EAA: Units for which the agricultural activity represents solely a leisure activity like kitchen gardens, private livestock rearing are excluded from EAA.

Subsistence farming: A form of agriculture where almost all production is consumed by the household, often characterized by low-input use, generally provided by the farm. Source: <u>https://www.fao.org/3/i0132e/i0132e08.pdf</u>

## 1.2.3 Inseparable non-agricultural secondary activities

1.25. The use of the local KAU as the basic unit for the agricultural industry entails recording non-agricultural secondary activities where they cannot be isolated from the main agricultural activity.

1.26. Inseparable non-agricultural secondary activities of local agricultural KAUs are defined in the EAA as activities closely linked to agricultural production for which information on any of output, intermediate consumption, compensation of employees, labour input or GFCF cannot be separated from information on the main agricultural activity during the period of statistical observation.

1.27. The main characteristics of these inseparable non-agricultural secondary activities are as follows:

- they must be intended for sale or barter (during the accounting period or later, after storage), own final use by the producer or as payment in kind (including compensation in kind paid to employees),
- they must not be ancillary activities. Ancillary activities are not isolated to form distinct entities or separated from the principal or secondary activities or entities they serve. Accordingly, ancillary activities must be integrated with the local KAU they serve, unless they are organised in separate units and located in another region. Ancillary activities remain in the same industry as the local KAU they serve. Ancillary activities are supplementary activities (e.g. sales, marketing, warehousing, transport for own account; see ESA 2010, 3.12 and 3.13, and 2008 SNA, 5.35 to 5.44) carried out by an

<sup>(4)</sup> These are small units producing for own consumption, not for selling, carrying out agricultural activities without depending economically on these activities.

enterprise in order to create the conditions for conducting the main or secondary activities. Typically, the output of ancillary activities appears as input in the different types of productive activity,

- by convention, they may not include production of GFCF of non-agricultural products (such as buildings or machines) for
  own account. That production of GFCF of non-agricultural products for own final use is presumed to be a separable
  activity and is recorded as the production of an identifiable local KAU. Accommodation services made available to
  employees as remuneration in kind must be treated in a similar manner (they are recorded as remuneration in kind in the
  generation of income account),
- they must be characteristic of agricultural holdings, i.e. they must be of significant economic importance for a significant number of holdings,
- agricultural 'contract work' is not a non-agricultural activity since it is a characteristic activity (agricultural services) of the agricultural industry.

1.28. Only that part of a specific non-agricultural secondary activity which is inseparable must be included. As a consequence, a given non-agricultural activity will be included in the agricultural industry if it is impossible to separate it from the main agricultural activity of a local KAU, but will be excluded if it can be separated from the main agricultural activity, in which case the secondary activity gives rise to a non-agricultural local KAU. The selection criterion for inseparable non-agricultural secondary activities is not so much the nature of the product as the type of activity (<sup>5</sup>). For example, agro-tourism services provided by a farm must only be included if they cannot be separated from its agricultural activities. This would probably not be the case when these activities become important. Thus, non-agricultural products accounted for in the production of the agricultural industry may vary geographically and over time.

#### **BOX 4 INSEPARABLE NON-AGRICULTURAL SECONDARY ACTIVITIES IN FADN**

As the inseparable non-agricultural secondary activities are recorded in FADN, FADN data can be source of information used for estimation.

1.29. Two main types of inseparable non-agricultural secondary activity may be distinguished:

1. Activities which represent a continuation of agricultural activity and which use agricultural products. This type of activity can be found in most of the EU Member States. The processing of agricultural products is the typical activity of this group:

Processing of agricultural products:

- milk into butter, cream, cheeses, yoghurts and other dairy products,
- fruit and vegetables into fruit juices, tinned foods, alcoholic beverages and other products,
- grapes, must and wine into alcoholic products (e.g. sparkling wine, such as Champagne, and spirits, such as Cognac),
- plaiting of vegetable material/textiles/wool,
- · production of pâtés, foie gras and other processed meat products,
- processing of other agricultural products.

Grading and packaging of agricultural products, e.g. eggs and potatoes.

- 2. Activities involving the agricultural holding and its means of agricultural production (equipment, installations, buildings, workforce). These activities are basically the following:
  - agro-tourism-camping, catering, hotels, various kinds of accommodation, etc.,
  - farm shops—retail trade activities concerning products other than those from the holding. Direct sales of agricultural products, raw or processed, are recorded in the output of the products concerned,
  - sports and rural recreation-the use of land for activities such as golf, horse-riding, hunting, fishing, etc.,
  - services for third parties—e.g. the renting and repair of agricultural machinery, irrigation projects, agricultural advisory services, product storage, maintenance of farm buildings, commercial services relating to agricultural products, transport of agricultural products, etc. These services are recorded as secondary activities, only if they are performed for

(5) Note however that some secondary activities are always considered separable from agricultural activity e.g. renting out of buildings or dwellings.

a third party. When performed for own account, they are ancillary activities, which are not recorded in the accounts (cf. 1.27),

- landscaping services-grass-mowing, hedge-trimming, snow-clearing, laying out, planting and maintenance of green areas and the like,
- fish-farming,
- other activities involving the use of the land and the means of agricultural production. These other activities will include R & D, if not performed by separate local KAUs and if possible to be estimated.

#### **BOX 5 DIRECT SALES OF PROCESSED AGRICULTURAL PRODUCTS**

In the second bullet point of 1.29 point 2, the direct sales of processed agricultural products relates to products that are resulted by processing activities which are separable from the agricultural activity and not to those which are inseparable from the agricultural activity, which are dealt in point 1 (see 2.59 and 2.60).

1.30. The list of non-agricultural secondary activities (cf. 1.29) is however given by way of illustration and does not apply in every country. On the contrary, each country has to compile its own list of inseparable non-agricultural secondary activities, depending on the characteristics of its agriculture. The list must be drawn up in collaboration with the national accounts departments so as to ensure that the EAA is compatible with the agricultural branch accounts and the accounts for these non-agricultural activities as compiled for national accounts purposes (i.e. to ensure that no activity is omitted or double-counted).

1.31. The agricultural secondary activities of non-agricultural units are negligible and are recorded as zero by convention. Agricultural production carried out by a non-agricultural unit is in fact considered to be always separable, in terms of accounting data, because of the specific features of the products and the means of agricultural production as well as the data sources and methods used for drawing up the resulting EAA (cf. section E of chapter I and sections B and C of chapter II). In order to base the EAA on the industry concept, the output of all agricultural products, excluding those products arising from the secondary activities of non-agricultural local KAUs, has to be measured. As these by convention are deemed to be zero, all agricultural output is recorded (with the exception of the output of units for which the agricultural activity represents solely a leisure activity; cf. 1.24).

1.32. Non-agricultural goods and services produced by agricultural holdings are not included in the EAA unless they are the result of inseparable secondary activities. For example, if units include several vertically integrated production processes (e.g. enterprises engaged in slaughtering, packing and vacuum-packing fowl, grading, washing and pre-packaging potatoes or other vegetables, sorting, preparing and selling seeds; cooperatives providing storage space and selling the products, etc.), the agricultural industry includes only the part of their activity which is related to agricultural production as defined in 1.62 and 1.63, and to the inseparable non-agricultural secondary activities.

# 1.3 Measurement of output

1.33. According to the ESA 2010, the output of the industry represents all of the products produced over the accounting period in question by all the units of the industry except for goods and services produced and consumed over the same accounting period by the same unit. The measurement of agricultural output is based on an adaptation of this ESA rule, with the inclusion in agricultural output of part of the output consumed by the agricultural units themselves (cf. 2.032 to 2.036). Thus in the EAA, agricultural output represents the sum of output by all units in the industry (excluding output for intermediate consumption by the same unit), plus output used as intermediate consumption by the same unit, provided this output concerns two different basic activities (such as crop products intended for use as animal feedingstuffs) and it meets certain criteria (set out in 2.055).

1.34. The ESA rule has been adapted because of the special nature of the agricultural industry:

- the amount of agricultural output used in the same unit as intermediate consumption is greater in agriculture than in other economic sectors,
- the agricultural holding includes a great variety of agricultural activities which are closely linked to one another (one activity being a basis for or continuation of another activity, such as cereal and fodder production for animal feedingstuffs; close links in the use of production factors such as equipment and machinery). The varied content of the agricultural holding, without putting into question its characterisation as a local KAU, makes it a very special case as compared to local KAUs in other parts of the economy (cf. 1.17). The aim of the accounts in subdividing the economy into industries is, in part, to reflect the flows within the production process: creation, transformation, trade and transfer of economic value. The different activities carried out on an agricultural holding would not be fully taken into account by solely measuring the output leaving the holding.

1.35. This adaptation of the ESA rule calls for special treatment for certain products such as agricultural products intended for use as feedingstuffs on the holding, grapes used for wine production and olives used for olive oil production, and agricultural products intended for use as intermediate consumption for inseparable non-agricultural secondary activities.

1.36. Trade in live animals between agricultural holdings and imports of live animals are the subject of special treatment as they are considered work-in-progress (cf. chapter II).

# **1.4 Sequence of accounts**

### 1.4.1 Sequence of accounts as provided for in the ESA 2010

1.37. The EAA are based on a sequence of interconnected accounts. In the ESA 2010, the full sequence of accounts includes current accounts, accumulation accounts and balance sheets (ESA 2010, 1.113 to 1.115). These different accounts make it possible to record transactions and other flows linked to specific aspects of the economic cycle (for example, production) in an ordered framework. These transactions range from the generation of income through income accumulation in the form of assets, to its distribution and redistribution. The balancing items which are deducted from them are then used as aggregates for measuring economic performance.

1.38. The current accounts deal with the production and related generation, distribution and redistribution of income and its use in the form of final consumption; they make it possible to calculate 'savings', which is the essential component of accumulation. Accumulation accounts analyse the various components of changes in the assets and liabilities of units and make it possible to record changes in net worth (the difference between assets and liabilities). The balance sheets show the total assets and liabilities of the various units at the beginning and end of the accounting period, together with their net worth. The flows for each asset and liability item recorded in the accumulation accounts are seen again in the 'changes in balance sheets' account (ESA 2010, 8.02 to 8.09 and Table 8.1).

1.39. The sequence of accounts referred to above applies to institutional units, sectors and subsectors, and the total economy. The ESA 2010 assumes that there is no point in compiling a full sequence of accounts for a local KAU and an industry because such units rarely have the capacity to retain goods or assets in their own name or to receive and distribute income.

## 1.4.2 Sequence of accounts of the EAA

1.40. As the EAA are based on the industry concept, the sequence of accounts in accordance with the ESA 2010 has to be limited to the first accounts of the current accounts:

- the production account and
- the generation-of-income account

whose balancing items are value added and operating surplus/mixed income respectively (cf. Table 1 and Table 2 below).

1.41. Nevertheless, it is thought that, given the specific features of agriculture, it should be possible to compile other accounts, at least in part, in so far as the relevant flows can be clearly attributed to them. The accounts in question (cf. Table 3 and Table 4 below) are the following:

- the entrepreneurial income account (one of the current accounts) and
- the capital account (one of the accumulation accounts).

1.42. Consideration is being given to extending this sequence of accounts to include certain items (flows) in the account 'other changes in assets' in the accumulation accounts (i.e. certain headings under 'other changes in the volume of assets' and the revaluation account) and the balance sheet.

1.43. On the basis of the tables and accounting structure in the ESA 2010, the sequence of accounts of the EAA can be depicted as shown in Table 1 to Table 4.

The Table 1 to Table 4 below contain also numerical examples. They do not, however, correspond to the format in which the data are transmitted (reference to chapter on data transmission). The abbreviations in the first and fourth columns stem from ESA (see ESA 2010, Chapter 23, Classification of transactions and other flows). Some examples: P.2 means Intermediate consumption, B.1g means Value added, gross; B.1n means Net value added or D.45 Rent.). Their purpose is assuring the connection between EAA and ESA and helping to find detailed information about them in ESA.

#### TABLE 1

## **Production accounts**

Current accounts					
	Uses			Resources	
P.2	Intermediate consumption	50	P.1	Output	100
B.1g	Gross value added	50			
P.51c	Consumption of fixed capital	10			
B.1n	Net value added	40			

### TABLE 2

# Generation-of-income account

Current accounts					
	Uses			Resources	
D.1	Compensation of employees	10	B.1n	Net value added	40
D.29	Other taxes on production	5			
D.39	Other subsidies on production	-10			
B.2n/B.3n	Operating surplus, net/Mixed income, net	35			

# TABLE 3

# Entrepreneurial income account

Current accounts					
	Uses			Resources	
D.4	Property income	10	B.2n/B.3n	Operating surplus, net/Mixed income, net	35
D.41	Interest	5			
D.45	Rent	5	D.4	Property income	1
			D.41	Interest	1
			D.42	Distributed income of corporations	
			D.43	Reinvested earnings on foreign direct investment	
			D.44	Other investment income	
			D.45	Rent	
B.4n	Entrepreneurial income, net	26			

# TABLE 4

# Capital accounts

Accumulation accounts						
Changes in assets			Changes in liabilities and net worth			
B.101	Changes in net due to saving and capital transfers		B.8n	Saving, net		
			D.9r	Capital transfers, receivable	10	
			D.92r	Investments grants, receivable	5	
			D.99r	Other capital transfers, receivable	5	
			D.9p	Capital transfers, payable		
			D.91p	Capital taxes, payable		
			D.99p	Other capital transfers, payable		
P51g	Gross fixed capital formation (GFCF)	100	B.101	Changes in net worth due to saving an transfers	nd capital	
P.511	Acquisition less disposals of fixed assets (GFCF in fixed assets)	89				
P.511a	GFCF in plantations	10				
P.511b	GFCF in livestock	15				
P.511c	GFCF in machines and equipment	20				
P.511d	GFCF in transport equipment	20				
P.511e	GFCF in farm buildings	20				

Accumulation accounts				
	Changes in assets		Changes in liabilities and net worth	
P.511f	GFCF in other works except land improvements (other buildings, structures, etc.)	0		
P.511g	Major improvements to land	4		
P.511h	Research and development	0		
P.511i	Other GFCF (e.g. computer programmes, production rights)	0		
P.512	Costs of ownership transfer on non-produced assets (land, etc.)	1		
P.51C	Consumption of fixed capital	10		
P.52	Changes in inventories	5		
P.53	Acquisitions less disposals of valuables			
NP	Acquisitions less disposals of non-produced assets (land, etc.)			
В.9	Net lending(+)/Net borrowing(-)			
К.1	Economic appearance of assets			
К.2	Economic disappearance of non-produced assets			

1.44. It should be borne in mind that transactions and stocks set out in italics in Table 3 and Table 4 are items which:

- are not relevant for the EAA because the industry concept is used and the sequence of accounts is incomplete. The headings concerned are headings D.42 Distributed income of corporations, D.43 Reinvested earnings on direct foreign investment, D.44 Other investment income and D.45 Rent under Resources of Table 3 and headings B.8n Saving, net, B.101 Changes in net worth due to saving and capital transfers and B.9 Net lending(+)/Net borrowing(-) in Table 4 or
- are not recorded, either for lack of reliable information or because they are currently of limited interest for EAA purposes. The headings in question are D.9p Capital transfers, payable, D.91p Capital taxes, payable and D.99p Other capital transfers, payable P.53 Acquisitions less disposals of valuables, NP Acquisitions less disposals of non-produced assets (land and other non-produced assets), K.1 Economic appearance of assets, K.2 Economic disappearance of non-produced assets, in Table 4. Some of these (e.g. D.91, K.1, K.2) may be recorded in the EAA at some later date.

#### **BOX 6 ACCOUNTS NOT PART OF THE EAA**

Other accounts of the complete accounting sequence according to ESA 2010 are not mentioned in <u>Table 3</u> and <u>Table 4</u>. While the disposable income and financial account are not relevant for the EAA because of the industry concept, other accounts and headings could help as supporting accounting elements for the compilation of the EAA. Those are not described in this manual, as they are not in the legal framework, but countries are free to implement those elements. This refers to the accumulation accounts beyond the capital account and balance sheet.

1.45. The production account records transactions relating to the production process. It includes output under 'Resources' and intermediate consumption under 'Uses'. Value added, i.e. the balancing item, may be calculated either before

or after consumption of fixed capital (gross or net value added). As output is valued at the basic price and intermediate consumption at purchaser price, the value added includes subsidies less taxes on products.

1.46. The generation of income account is concerned with the formation of income resulting from the production process and its attribution to the 'labour' production factor and general government (in the form of taxes and subsidies). The operating surplus, i.e. the balancing item, corresponds to the income which the units generate by using their production assets. In the case of unincorporated enterprises in the households sector, the balancing item of this account implicitly contains an element corresponding to remuneration for work carried out by the owner or members of the family. This income from self-employment has characteristics of wages and salaries, and characteristics of profit due to work carried out as an entrepreneur. This income, neither strictly wages nor profits alone, is referred to as 'mixed income' (ESA 2010, 8.19).

1.47. The entrepreneurial income account makes it possible to measure income which is similar to the concept of current profit before distribution and taxes on income, as customarily used in business accounting.

1.48. The capital account makes it possible to determine the extent to which acquisitions less disposals of non-financial assets have been financed from saving and capital transfers. It shows lending or borrowing. It is not possible to compile a complete capital account for agriculture because, although certain flows may be clearly attributable to this industry, other items (e.g. net saving, the balance of the sequence of the current accounts) cannot be calculated on an industry basis. Nevertheless, by recording as much as possible of the changes in the value of non-financial assets in the industry (due to acquisitions, disposals and the consumption of fixed capital) and capital transfers received by the industry, valuable information is obtained on its economic and balance-sheet situation (plus information on the income generated by the production process).

# 1.5 Sources of data and methods of calculation for compiling the EAA

1.49. One of the main characteristics of the EAA is the adoption of the 'quantity x price' formula when measuring the output of the large majority of products. This approach was prompted mainly by the difficulty of compiling agricultural accounts based on representative samples of business accounts.

1.50. The evaluation of crop output can normally be based on resources, i.e. the estimate of quantities produced (harvested) based on estimates of areas under crops and yields, or on uses, i.e. on estimates of purchases by the user branches of agricultural products, exports net of imports, to which should be added certain quantities used for intermediate consumption by the agricultural industry, changes in producer stocks and use for own account (much of which is own final consumption). The latter approach can prove highly appropriate in cases where the buyers of these agricultural products are readily identifiable and the four other components of uses are limited (for example, products requiring preliminary processing before they can be used, such as sugar beet, tobacco, etc.). Nevertheless, a physical balance sheet is necessary in order to verify the consistency and reliability of the data.

1.51. Statistics on slaughterings, exports/imports of live animals and the size of herds are the main sources of data for measuring the output of animals. The output of animal products (mainly milk) is generally estimated using sales to user branches (dairies, packers) because of the specific uses to which they are put.

1.52. A more detailed description of the methods of calculation is given in chapter II.

1.53. Most intermediate goods can basically only be used in agriculture (seeds and planting stock, fertilisers, pesticides, etc.). In this case purchases by agriculture are based on the data relating to sales by branches which supply these intermediate goods (after inclusion of external trade).

1.54. Applying this rule is not without certain risks, however. In actual fact, sales by producers of intermediate consumption goods, which are mainly used in agriculture, do not necessarily correspond to the purchases of those goods by the agricultural sector, because fertilisers, pesticides, etc. may also be bought for other purposes (stocks of commercial units, consumption of other units such as public parks and households etc.).

# **1.6 The classification**

## 1.6.1 General

1.55. The EAA are an integral part of the European system of accounts and therefore for their compilation use is made of Eurostat's general classification of economic activities, NACE Rev. 2. NACE Rev. 2 is a four-level nomenclature of activities which was compiled in 2006. It is in fact a revision of the general industrial classification of economic activities within the European Communities, or NACE, which was first published by Eurostat in 1970.

1.56. NACE Rev. 2 is a more detailed version of ISIC Rev.4 (<sup>6</sup>), adapted to specifically European circumstances. NACE Rev. 2 is also directly linked to the statistical classification of products by activity (CPA) within the European Economic Community, which in turn is based on the United Nations' central product classification (CPC).

1.57. NACE Rev. 2 is a classification of activities which is used for defining industries in the national accounts. It is based on the four-level coding system described below:

- a first level consisting of headings identified by an alphabetical code (sections);
- a second level consisting of headings identified by a two-digit numerical code (divisions);
- a third level consisting of headings identified by a three-digit numerical code (groups); and
- a fourth level consisting of headings identified by a four-digit numerical code (classes).

1.58. Each level in a classification of economic activities can usually be defined by its characteristic goods or services. Thus, the CPA is used to describe in detail the various economic activities in the agricultural industry with an additional two-digit differentiation providing a more detailed definition of the headings.

1.59. According to ESA 2010, the industry corresponds to the group of local KAUs engaged in the same or similar principal activity. At the most detailed level of classification, an industry includes all local KAUs in the same class (four digits) of NACE Rev. 2 and which are therefore engaged in the same activity as defined in this nomenclature (ESA 2010, 2.150). A definition of the field of the agricultural industry therefore requires a precise statement of:

- its characteristic activities,
- the characteristic units of the EAA.

## **1.6.2** Definitions of the characteristics activities of agriculture

1.60. The agricultural industry, as described in the EAA, corresponds, in principle, to Division 01 in NACE Rev. 2 with differences shown in following paragraphs 1.62 to 1.66.

The list of activities which defines this industry (cf. Appendix I.A.) has the same structure as that described above in point 1.57 and is an integral part of NACE Rev.2.

1.61. The EAA are a satellite account in the framework of the national accounts, whose basic concepts, principles and rules are based on the ESA 2010. However, the latter only provides a general framework for the economy as a whole, and has to be adapted to the specific requirements of agriculture. These particular requirements derive mainly from the specific purposes of the EAA, the availability of data sources and the special character of agricultural units and their economic activities. The specific nature of the satellite accounts necessitates the compilation of a list of characteristic agricultural activities of the EAA, which obviously has to be based on NACE Rev. 2.

1.62. For national accounts purposes the agricultural industry is defined as all units performing, either solely or together with other secondary economic activities, activities which come under Division 01 of NACE Rev. 2 'Crop and animal production, hunting and related service activities'. Division 01 comprises (<sup>7</sup>):

- (6) ISIC Rev. 4: United Nations international standard industrial classification of all economic activities.
- (<sup>7</sup>) See also the 'Explanatory notes': Eurostat: NACE Rev. 2, Statistical classification of economic activities in the European Community, Theme 2, Series E, Luxembourg, 2007.

- Group 01.1: Growing of non-perennial crops;
- Group 01.2: Growing of perennial crops;
- Group 01.3: Plant propagation;
- Group 01.4: Animal production;
- Group 01.5: Mixed farming;
- Group 01.6: Support activities to agriculture and post-harvest crop activities;
- Group 01.7: Hunting, trapping and related service activities.

1.63. The list of characteristic agricultural activities of the EAA corresponds to these seven groups of activities (01.1 to 01.7), but with the following differences:

- inclusion of the production of wine and olive oil (exclusively using grapes and olives grown by the same holding),
- exclusion of certain activities which, in NACE Rev. 2, are considered as agricultural services (e.g. the operation of irrigation systems–only agricultural contract work is taken into account here).

#### **BOX 7 MINIMUM LIST OF CHARACTERISTIC AGRICULTURAL ACTIVITIES**

Based on this list of characteristic agricultural activities, a "minimum list" has been compiled, which groups together the headings for which EAA data have to be provided (See Chapter 11 Data transmission). The minimum list is not, however, simply a list of activities drawn up at an average level of aggregation. Rather, it is the result of a pragmatic approach to the list of activities, which takes account of differences in the size and importance of individual headings and, in particular, the availability of statistical data.

#### 1.6.3 Definitions of the characteristics units of agriculture

1.64. All units which perform characteristic activities of the agricultural industry of the EAA must be included. The units in question perform the activities included in the following groups in NACE Rev. 2:

- groups 01.1 and 01.2: Growing of non-perennial and perennial crops,
- production of seeds: only the units engaged in seed multiplication,
- group 01.3: Plant propagation
- group 01.4: Animal production,
- group 01.5: Mixed farming,
- group 01.6: Support activities to agriculture and post-harvest crop activities
- excluding units which perform agricultural service activities other than contract work (i.e. units which operate irrigation systems or seed processing for propagation),
- group 01.7: Hunting, trapping and related service activities.

1.65. This point was removed from the EAA Regulation following Regulation (EC) No 212/2008. It is kept in this manual to make clear references between the points in Annex I of Regulation and the manual.

1.66. It can be seen from the list that, apart from agricultural holdings, the other characteristic units of agriculture are: groupings of producers producing wine and olive oil and specialist units performing agricultural contract work (cf. 1.20 and 1.21). It should be remembered that units for which the agricultural activity represents solely a leisure activity are not included among the characteristic units of agriculture (cf. 1.24).

### **1.6.4** Observations concerning various items

Annex 1 of this manual presents the complete list of characteristic agricultural activities. This list is based on NACE Rev 2 and contains CPA and Combined Nomenclature items.

#### A. Groups from 01.1 to 01.3: Growing of non-perennial and perennial crops, plant propagation

1.67. Groups from 01.1 to 01.3 include a systematic breakdown making it possible to classify all crop production activities in the EU Member States.

1.68. In order to be recorded, the production of fodder crops must be part of an economic activity.

1.69. This point was removed from the EAA Regulation following amending act Regulation (EC) No 1137/2008. It is kept in this manual to make clear references between the points in Annex I of Regulation and the manual. The Box 8 below clarifies the treatment of christmas trees which were addressed in point 1.69 of the Regulation.

#### **BOX 8 CHRISTMAS TREES**

As defined by NACE Rev. 2, the production of nursery trees is treated as an agricultural activity in so far as it relates to the production of tree saplings and fruit-bearing shrubs, vines and ornamental shrubs, whereas the production of forest plants is treated as a forestry activity if the plants are intended for use in the production of forest trees. The production of Christmas trees is also treated as agricultural production if the trees are grown in nurseries with specifically ornamental purposes in mind, but if for instance, the Christmas trees are the result of lopping or thinning of forest trees, then this is considered as forestry production.

1.70. In the nomenclature of the EAA, agricultural seeds are grouped under the heading 'Seeds', the exceptions being seed for cereals (including rice), oilseeds, protein crops and potatoes, which are entered respectively under the individual cereal and oilseeds varieties, protein crops and potatoes (<sup>8</sup>). The production of seeds in fact covers several types of production activity: research (i.e. production of first-generation seed prototypes), multiplication (done by agricultural holdings under contract) and certification (i.e. grading and packing by specialist production units). Only the multiplication of seeds is a characteristic agricultural activity since research and certification activities are done by research and production institutes and are not part of traditional agricultural activity (i.e. the exploitation of natural resources with a view to producing plants and animals). As a result, the production of seeds in the EAA only concerns the production of multiplied seeds. The intermediate consumption of seeds corresponds to (i) first-generation seeds purchased with a view to multiplication and (ii) certified seeds purchased by agricultural producers with a view to crop production.

1.71. Following the convention adopted by NACE Rev. 2 (<sup>9</sup>), when own produced agricultural products are processed by the same unit of production, the processed products are also attributed to agriculture. As an example, grape must, wine and olive oil are treated as food products in the CPA. NACE Rev. 2 classifies the production of wine and olive oil under section C 'manufacturing' (Classes 11.02 'Manufacture of wine from grape' and 10.41 'Manufacture of oils and fats'). Only the production of wine grapes and olives comes under agriculture (Classes 01.21 'Growing of grapes' and 01.26 'Growing of oleaginous fruits'). However, following the above convention, wine and olive oil produced from grapes and olives grown by the same unit of production are attributed to agriculture.

#### **BOX 9 SECTION-SPECIFIC RULES IN NACE REV. 2**

NACE Rev. 2 describes section-specific rules and definitions. Concerning the agriculture, forestry and fishing it is defined:

In agriculture, one frequent situation where the breakdown of the value added presents difficulties is when the unit produces grapes and manufactures wine from the own-produced grapes, or when it produces olives and manufactures oil from the own-produced olives. In these cases the most

<sup>(&</sup>lt;sup>6</sup>) The reason for this deviation from the general rule is that in these special cases a considerable part of the seed is obtained from the normal output of the corresponding cereal, oilseed, protein crop or potato harvest, whereas in other cases it is produced in specialised holdings.

<sup>(?)</sup> See the 'Introductory guidelines' to NACE Rev. 2: Statistical classification of economic activities in the European Community, Theme 2, Series E, Luxembourg, 2007.

suitable proxy variable is the "number of hours worked" and applying it to these vertically integrated activities would generally lead to classification of the units under agriculture. In the same case for other agricultural products, units will be classified in agriculture by convention, in order to guarantee harmonised treatment (see NACE Rev. 2, chapter 3.4, point 92 (p. 32)).

1.72. The production of wine by units closely linked to agricultural holdings is also treated as a characteristic agricultural activity in the EAA. Units with strong links to agricultural holdings include groups of producers (e.g. vine-growers' cooperatives). Their inclusion in the agricultural industry is dictated by the nature of these organisations, which have historically represented an 'extension' of agricultural holdings (on mutual grounds relating to production and marketing) and which are usually owned by them. By contrast, the production of wine (olive oil) by agri-food businesses is excluded from the EAA (since it is clearly industrial by nature).

1.73. The production of grape must features together with the production of wine in the list of characteristic activities since grape must can be sold or exported in its raw state or added to stocks prior to being sold or exported, either for consumption or to be made into wine, in a subsequent reference period.

1.74. Since wine, olive oil and grape must (the latter only in so far as it is not vinified during the reference period) result from agricultural production in the form of the processing of grapes and olives grown by the same unit, neither grapes intended for the manufacture of grape must and wine nor olives intended for the manufacture of olive oil (i.e. the basic products) should be included under output. They are treated as intra-unit consumption which is not measured as industry output (cf. 2.052). Grape must which is not vinified during the reference period should be included in the period's output. During the vinification period, it should be recorded as intermediate consumption (intra-industry consumption) balancing a corresponding stock decline. The wine resulting from the processing of the must should be recorded as a component of output.

1.75. Plantations (e.g. vineyards and orchards) are fixed capital goods, and their establishment has to be recorded under output. The establishment of plantations for own account constitutes 'Own-account produced fixed capital goods'. When the establishment of plantations is carried out by specialised units on contract basis, the corresponding value is considered as 'Sales'.

#### **BOX 10 ESTABLISHMENT OF PLANTATIONS**

Establishment of plantations should be recorded not only under output but also under GFCF. When the establishment of plantations is carried out for own account, the corresponding value should be recorded as 'Own-account produced fixed capital goods' as output.

#### B. Group 01,4: Animal production

1.76. As with crop-growing activities (cf. 1.67), this group comprises a systematic breakdown of all the livestock and animal products produced in the EU Member States.

# 1.77. This point was dropped from the Regulation following Regulation (EC) No 1137/2008 and it is thus not relevant for the manual either.

1.78. Horse breeding is a characteristic activity of the EAA whatever the final destination of the animal may be (breeding, meat production or services). It should be noted, however, that the management of racehorse stables and riding schools is not a characteristic agricultural activity (it is a part of 'Sports activities and amusement and recreation activities': Division 93) (cf. 2.210). Therefore, flows accruing to farmers from such activities must be excluded from the EAA. In addition, the keeping of racehorses or saddle horses which are not part of the agricultural production process is excluded from the EAA. A similar treatment is applied to bulls bred for bullfights.

1.79. In the economic accounts, by-products (<sup>10</sup>) which automatically result from the production of certain agricultural products are not recorded under the same headings as the product itself. They appear separately at the end of each group of production activities, broken down by species. In crop production, for example, examples include straw, beet leaves and cabbage leaves, pea and bean pods, etc.; in vinification, lees and argols; in the manufacture of olive oil, waste, such as oilseed cakes; and, in the case of animal production, hides, hair and the fur of dead game, and wax, manure and slurry. Generally speaking, none of these products is the prime objective of production, which explains why it is so rare for statistical data on them to be reliable. In agriculture itself, these products are used mainly as animal feedingstuffs or soil improvers. Occasionally, however, these by-products are sold to economic sectors other than agriculture, in which case the value of output should be shown in the EAA.

#### C. Group 01.6: Support activities to agriculture and post-harvest crop activities

1.80. The activities in group 01.6 can be divided into two categories:

- agricultural services in the form of contract work at the production stage (i.e. agricultural contract work),
- 'other' agricultural services (the operation of irrigation systems, seed processing for propagation, etc.).

1.81. Agricultural service activities in the second category are not treated as characteristic EAA activities (even though they are recorded in the agricultural accounts of the national accounts), since they are not traditional or typical agricultural activities.

#### Agricultural contract work

1.82. As part of the process of economic specialisation, agricultural holdings and households have long since ceased to perform certain functions, which have been taken up by a growing number of specialist professions with their own production units. This division of functions mainly concerns the processing of agricultural products (slaughtering and meat processing, the milling of cereals, the manufacture of bread, butter and cheese and the processing of seeds by new sectors), and, at a later stage, certain marketing transactions. This is especially the case in the context of the major structural changes affecting agriculture, the growing use of large machines and agricultural activities which make a direct contribution to the production of crop products and animal husbandry and which have increasingly been outsourced to specialised units.

1.83. Notable among these activities are manuring, liming, ploughing, sowing, weeding, pest control, plant protection, hay harvesting, threshing and the shearing of sheep.

1.84. A characteristic feature of all these activities is that they are generally necessary as part of the production process for agricultural products and are linked to the production of these products.

1.85. Activities which are not directly related to the production of agricultural products, i.e. which do not take place at the agricultural production stage (transport for account of third parties and deliveries of milk to dairies are examples of a non-agricultural activity constituting part of a different industry) should not feature in the EAA (unless they are activities which are inseparable from the principal agricultural activity; cf. 1.12).

#### **BOX 11 ACTIVITIES UNDER AGRICULTURAL CONTRACT WORK**

According to NACE Rev. 2, group 01.6 Support activities to agriculture and post-harvest crop activities covers 01.61 Support activities for crop production, 01.62 Support activities for animal production, 01.63 Post-harvest crop activities and 01.64 Seed processing for propagation.

According to the Reg. (EU) 138/2004 the activities under 01.61, 01.62 and 01.63 are agricultural activities, while the activities under 01.64 are not agricultural activities.

The codes in this box refers to NACE Rev. 2.

Below can be seen information on the activities classified under NACE Rev. 2, group 01.6:

(<sup>10</sup>) A secondary product is a product which is technically linked to the production of other products. It may be exclusive when linked to other products of the same group but whose production is exclusive to this group, or ordinary when linked to other products, but whose production is not peculiar to one group.
#### 01.61 Support activities for crop production

#### This class includes:

- agricultural activities on a fee or contract basis:
- preparation of fields
- establishing a crop
- treatment of crops
- crop spraying, including by air
- trimming of fruit trees and vines
- transplanting of rice, thinning of beets
- harvesting
- pest control (including rabbits) in connection with agriculture
- maintenance of agricultural land in good agricultural and environmental condition
- operation of agricultural irrigation equipment

#### This class also includes:

provision of agricultural machinery with operators and crew

#### This class excludes:

- post-harvest crop activities, see 01.63
- drainage of agricultural land, see 43.12
- landscape architecture, see 71.11
- activities of agronomists and agricultural economists, see 74.90
- landscape gardening, planting, see 81.30
- organisation of agricultural shows and fairs, see 82.30
- 01.62 Support activities for animal production

#### This class includes:

- agricultural activities on a fee or contract basis:
- activities to promote propagation, growth and output of animals
- herd testing services, droving services, agistment services, poultry caponising, coop cleaning etc.
- activities related to artificial insemination
- stud services
- sheep shearing
- farm animal boarding and care

#### This class also includes:

activities of farriers

#### This class excludes:

- provision of space for animal boarding only, see 68.20
- veterinary activities, see 75.00
- vaccination of animals, see 75.00
- renting of animals (e.g. herds), see 77.39
- pet boarding, see 96.09

#### 01.63 Post-harvest crop activities

#### This class includes:

• preparation of crops for primary markets, i.e. cleaning, trimming, grading, disinfecting

- cotton ginning
- preparation of tobacco leaves, e.g. drying
- preparation of cocoa beans, e.g. peeling
- waxing of fruit

#### This class excludes:

- preparation of agricultural products by the producer, see corresponding class in groups 01.1, 01.2 or 01.3
- post-harvest activities aimed at improving the propagation quality of seed, see 01.64
- stemming and redrying of tobacco, see 12.00
- marketing activities of commission merchants and cooperative associations, see division 46
- wholesale of agricultural raw materials, see 46.2

The activities under 01.64 are not agricultural contract work.

#### 01.64 Seed processing for propagation

This class includes all post-harvest activities aimed at improving the propagation quality of seed through the removal of non-seed materials, undersized, mechanically or insect-damaged and immature seeds as well as removing the seed moisture to a safe level for seed storage. This activity includes the drying, cleaning, grading and treating of seeds until they are marketed. The treatment of genetically modified seeds is included here.

This class excludes:

- growing of seeds, see groups 01.1 and 01.2
- processing of seeds to obtain oil, see 10.41
- research to develop or modify new forms of seeds, see 72.11

1.86. It should be borne in mind that this classification applies only on so far as the activities in question are exclusively for account of the specialised units. If, on the other hand, the farmer hires machines without operators or with only some of the operators required, with the result that he/she continues to carry out the activity as such, with the help of the machines, this activity comes under Division 77 of NACE Rev. 2. This situation mainly occurs with simple machines requiring relatively few repairs, and mainly during peak periods, when the machines are in greatest demand (cf. 1.23).

1.87. Contract work performed during the agricultural production stage mainly involves the use of expensive machines and equipment. Such work may be performed by:

(a) specialist contractors for whom these are the principal activities (contractors in the true sense);

(b) agricultural holdings

Contract work by holders usually takes the following forms:

- as far as farmers' supplementary income is concerned, the most flexible form is occasional aid given to neighbours. This category also includes the provision of accommodation for livestock and, mainly for pigs and poultry, animal husbandry on a fee basis (especially fattening). Accommodation may be provided for livestock owned by another farmer or the livestock may be the property of an industrial enterprise, usually a supplier (e.g. a manufacturer of/trader in fodder crops) or a purchaser (e.g. an abattoir/slaughterhouse),
- in the form of a more or less autonomous machine pool which represents a systematised form of mutual aid between neighbours. The high cost of machinery and its low rate of utilisation by an individual holding lead holdings which possess such machines to form machine pools which are placed at the disposal of other holdings, complete with the necessary personnel. Increasingly, farmers are deriving their main agricultural income from contract work on account of persons for whom agriculture is no more than a secondary activity and who in some cases are merely the owners of the land,

- agricultural machine cooperatives (<sup>11</sup>). These are large cooperatives with paid employees; they resemble specialist contractors;
- (c) enterprises involved in a subsequent production stage which harvest fruit or vegetables and then process themselves (e.g. tinning factories tinning peas under contract);
- (d) enterprises involved in a previous production stage. These include traders in agricultural machinery who perform contract work. Although other cases may, from the point of view of the EAA, seem highly unlikely, it is theoretically possible for a manufacturer of pesticides to apply the product himself. If this is done using the most modern techniques, however, it is not necessarily contract work at the agricultural production stage, and certainly not if the work is not regularly carried out by the farmer (e.g. aerial spraying of parasites).

1.88. In cases where it has to be decided if an activity should be treated as contract work (i.e. work which, in the context of the agricultural production process, would normally be performed by agricultural holdings themselves), it should be borne in mind that not only the nature of the activity, but also the specific context in which it is performed, i.e. the 'agricultural production process' is important.

1.89. Animal husbandry performed on farms for remuneration (the provision of land for livestock) is agricultural contract work since it is part of the agricultural production process. This heading does not, however, include the private rearing and care of saddle horses, since these activities do not constitute the production of goods but a genuine service within the meaning of the ESA 2010 (section R of NACE Rev. 2).

1.90. The type of compensation paid to the persons performing contract work is unimportant. It does not in any way have to be fixed remuneration (i.e. a wage in the strict sense); the compensation can perfectly well take the form of profit-sharing or a mixed formula (for example, a farmer who fattens calves in return for compensation generally receives a fixed amount for each animal plus a share in net profit). Compensation can also take the form of a specified share of the output.

1.91. Nevertheless, the work must always be performed by independent enterprises: work performed by the holding's paid employees does not fall into this category. From the point of view of the holding, remuneration for such work (for example, work done by a paid herdsman) is a wage cost and appears under the heading 'compensation of employees'. By contrast, work performed by an enterprise which carried out milking on a contract basis for other agricultural holdings is recorded in the EAA both as output (sales of services), from the point of view of the contractor, and as intermediate consumption (purchase of services), from the point of view of the agricultural holding.

#### D. Group 01.7: Hunting, trapping and related service activities

1.92. This group of activities comprises the following activities: (i) hunting and trapping on a commercial basis; (ii) taking of animals (dead or alive) for food, fur or skin, or for use in research, in zoos or as pets; (iii) production of fur skins or reptile or bird skins from hunting or trapping activities. It should be noted that the production of hide and leather from slaughterhouses and hunting performed as a sports or recreation activity are not included as characteristic activities of the agricultural industry. Additionally, the 'hunting' group does not comprise the breeding of game on holdings, which should be recorded under class 01,49 'Raising of other animals'.

# **1.6.5** Discrepancy between the EAA agricultural industry and the agricultural branch of the central framework of the national accounts

1.93. The EAA agricultural industry, as defined in Sections 1.62 to 1.66, differs in some respects from the branch as defined for national accounts purposes (*cf. ESA 2010 22.58*). The differences relate to the definition of both characteristic activities and units. They can be summarised as follows:

EAA agricultural industry = NA agricultural branch (NACE Rev. 2 Division 01)

- Production of units providing associated agricultural services other than agricultural contract work (e.g. the operation of irrigation systems)

(") The equipment and machines belong to the cooperative, unlike with pools of machines, where they are generally the property of individual holdings.

- Units for which the agricultural activity represents solely a leisure activity and which are included in national accounts, cf. ESA 2010, 3.08

+ Production of units producing wine and olive oil (exclusively using grapes and olives grown by the same unit *including production of wine and olive oil by* grouping of producers, cooperatives, etc.)

+ Separable secondary agricultural activities of units whose principal activity is not agricultural (cf. 1.18).



# **Transactions in Products**

2.01. Transactions in products provide an account of the origin and use of products. Products are goods and services created within the production boundary. The main categories of transactions in products defined by the ESA 2010 are: output, intermediate consumption, final consumption expenditure, actual final consumption, gross capital formation, exports of goods and services and imports of goods and services (*ESA 2010, 1.66, 3.01 and 3.02*).

2.02. As mentioned in 1.40 and 1.41, only output, intermediate consumption and gross capital formation are taken into account in the EAA. Output is recorded as a resource and intermediate consumption as a use in the production account. Gross capital formation is recorded as a use (a change in assets) in the capital account.

## 2.1 General rules

## 2.1.1 Reference period

2.03. For the EAA, the reference period is the calendar year.

## 2.1.2 Units

#### a. Quantities

2.04. Quantities should generally be shown in 1 000 t, (in 10 000 hl, for grape must and wine) to one decimal place. For animals, live weight is used.

#### b. Prices

2.05. In the EAA, prices should be shown per tonne (per 10 hl for wine and grape must).

2.06. In the EAA, prices shall be recorded either to the nearest whole number or correct to one or two decimal places, depending on the statistical reliability of the price data available. Relevant price information on input and output is necessary to compile the EAA.

#### c. Values

2.07. Values should be shown in millions of units of national currency.

## 2.1.3 Time of recording

2.08. The ESA 2010 (1.101-1.105) records flows (especially transactions in products and distributive transactions) on an accrual basis, in other words, at the time when an economic value, amount due or claim is created, transformed, cancelled or ceases to exist, and not at the time when payment is actually made.

#### **BOX 12 RECORDING OF COMPLEMENTARY PAYMENTS**

Producers may receive a preliminary payment when selling the product and a complementary payment afterwards (possibly at the end or after the marketing year). This happens frequently for products such as milk or tobacco. Such complementary payments are parts of the price/value of the product and are not subsidies. Complementary (or final) payments should be included in the year of production. If at the time of compilation of EAA for that year the amount of the complementary payment is not yet known, an estimate of this payment should be made. Once information on the complementary payment is available, the values/price indices concerned should be revised (see Agricultural product and input price statistics Handbook 2020 edition).

https://ec.europa.eu/eurostat/cache/metadata/Annexes/apri\_pi\_esms\_an\_1.pdf

#### 2.1.3.1 Output

2.09. Output should be valued and recorded at the time it is generated. It is therefore to be recorded when produced and not when paid for by the purchaser.

2.10. In the ESA 2010, production is treated as a continuous process in which goods and services are converted into other goods and services. This process may take place over different periods depending on the products, and the periods may exceed an accounting period. This characterisation of production, combined with the accrual principle, therefore results in the recording of output in the form of work-in-progress. Thus, according to the ESA 2010 (3.54), the output of agricultural products is recorded as being produced continuously over the entire period of production (and not only when the crops are harvested or animals slaughtered). Growing crops, standing timber and stocks of fish or animals reared for the purposes of food are treated as inventories of work-in-progress during the production process and transformed into inventories of finished products when the process is completed. Output excludes any changes in uncultivated biological resources, e.g. growth of animals, birds, fish living in the wild or uncultivated growth of forests, but it includes catches of animals, birds, fish living in the wild or uncultivated growth of states.

2.11. Recording output as work-in-progress is both desirable and necessary for economic analysis when the production process occurs over a period exceeding the accounting period. This allows consistency to be maintained between the recording of costs and that of output in order to obtain meaningful data on value added. Since the EAA are based on the calendar year, the recording of work-in-progress can be assumed to apply only to products whose production process was not completed at the end of the calendar year (but also in cases where the general price level undergoes very rapid changes during the accounting period).

2.12. However, for farm products whose production cycle is shorter than the accounting period, it would be unnecessary to record the output as work-in-progress. The recording of output at the finished product stage, i.e. at the harvest (for crop production), in fact allows an adequate degree of consistency between it and the production costs to be maintained. This is the situation for most agricultural output whose production cycle lasts less than a year. It is not necessary, either, to record as work-in-progress short-cycle crop production whose production process overlaps into a second calendar year (cf. 2.172.). In these cases, growing crops are not considered to be *inventories* of work-in-progress.

2.13. In practice, only products with a long production cycle are concerned by the method of recording in the form of work-in-progress. Such products are in particular livestock, crop products such as wine (whose ageing is an integral part of the production process) and plantations. The normal trend in prices in the European Union is in fact generally not very

marked and should not be a reason for recording certain products as work-in-progress (although this could happen in exceptional cases, cf. 2.172).

2.14. When products with a long production cycle which have been recorded as work-in-progress are harvested (crop production) or slaughtered (animals), the production process is completed and the work-in-progress is transformed into *inventories* of finished products ready to be sold or used for other purposes. During the production process, the value to be recorded each year as output under work-in-progress can be obtained by distributing the expected value of the finished product in proportion to the costs incurred each period (2008 SNA, 6.112).

#### **BOX 13 COMPLETED PRODUCTION PROCESS OF ANIMALS**

In case of animals the production process is completed, when the animals are sold for slaughtering or slaughtered by the farm.

2.15. Animals: animal production normally requires a period of time, possibly spanning several accounting periods before the process is completed. From the time of birth, it is possible and also appropriate to record an entry for each phase of production, i.e. for each age group of individual animals (the part of the production process preceding the birth, however, cannot be recorded because it cannot be isolated from the services consumed in rearing the parent animal).

2.16. The production process for draught animals is formally completed at their birth; from that time on, they are recorded as capital assets. The animals are, of course, not then ready for their intended use, but the individual variations are such that any selection of a fixed age for all cases would be highly arbitrary. The moment of birth has been selected for practical reasons, particularly since the subsequent use to which they will be put is already determined at this stage.

2.17. This is not always the case for cattle, pigs, sheep and other livestock which may be reared for breeding purposes or for slaughter. When it is possible to differentiate between young animals according to their future use, animals intended for use as factors of production should be recorded as GFCF right from their birth (own-account GFCF, which is recorded when it is produced) i.e. they are considered as work-in-progress and their growth is registered as output, (cf. ESA 2010, 3.134). Otherwise, animals are included in *inventories of unfinished products* as work-in-progress until they become mature and are used themselves as factors of production (e.g. as dairy cows, for breeding or other productive purposes such as wool production). They are then recorded under fixed capital. Animals which have been removed from breeding herds before being slaughtered should also be recorded as *inventories* and not capital assets.

2.18. Chick production is given special treatment if it spans two reference periods. Eggs hatching in incubators at the end of a period are regarded as output of chicks and recorded in the EAA under poultry output (in the form of work-in-progress) (cf. 2.048).

2.19. Wine: output should be recorded as work-in-progress since its ageing forms part of the production process and can last over several accounting periods. Similarly, fermenting grape must, which, though no longer raw must, is not yet wine, is treated at the end of an accounting period in the same way as eggs hatching in incubators and shown in the EAA as wine in the form of work-in-progress.

2.20. Assets cultivated in plantations: goods intended for own-account GFCF (other than livestock) such as plantations yielding repeat products should be recorded as GFCF at the time of production of the assets concerned.

#### **BOX 14 STANDING TIMBER**

In the case of forestry as inseparable non-agricultural activity, output of standing timber, which spans several years, should be recorded in the form of work-in-progress. However, this treatment only applies in the case of production organised, managed and supervised by an institutional unit, i.e. in the context of an activity in the economic sense (as opposed to the natural growth of wood which does not form part of the field of production and the product of which is only recorded at the felling stage).

#### 2.1.3.2 Intermediate consumption

2.21. Goods and services should be recorded at the time they enter the production process, i.e. when they are actually consumed and not when they are purchased or taken into storage.

2.22. The consumption of goods for a given reference period in practice corresponds to purchases or acquisitions of goods plus the initial stocks and minus the final stocks at the end of the period (<sup>12</sup>).

2.23. Services are recorded at the time of purchase. Since services cannot be stored, the time of purchase is also the time of consumption.

2.24. The following services are an exception to this rule:

- services connected with the purchase of goods, such as trade and transport services, are recorded as intermediate consumption at the time *when* the goods in question are consumed (cf. 2.111),
- services considered to be permanent, such as insurance services. These are recorded on a pro-rata basis at the end of the reference period according to the proportion of the payment due for the year, or part-year, in question. Accordingly, the amounts recorded do not necessarily correspond to the insurance premiums paid within the period concerned.

#### 2.1.3.3 Gross fixed capital formation

2.25. GFCF is recorded at the time of transfer of ownership of the fixed assets concerned to a unit intending to use them for production purposes. Nevertheless, there are two exceptions to this principle: first, assets acquired through financial leasing are recorded as if the user became the owner when the goods became available to him for use (cf. 3.122). Secondly, own-account GFCF is recorded at the time of production of the assets concerned (except cattle, pigs, sheep and other livestock, the future use of which cannot be clearly defined since these animals are included in *inventories* as work-in-progress, cf. 2.017).

2.26. Correspondingly, in the case of the establishment of orchards and vineyards (fixed capital goods produced on own account), if not all the necessary work has been completed by the end of the accounting period, the value of the materials consumed and services rendered over the reference year is recorded as GFCF at the end of the period.

2.27. Land purchases and sales as well as associated costs are recorded at the time of transfer of ownership. However, the net acquisition of land is not included in GFCF since the land is a non-produced asset. The net acquisition of land (and other non-produced *natural* assets) is recorded in the capital account (acquisitions of non-financial assets account).

#### **BOX 15 NET ACQUISITION OF LAND: ESA VS EAA**

According to ESA the net acquisition of land (and other non-produced non-financial assets) is recorded in the capital account (NP.1 Acquisitions less disposal of natural assets account), under NP "Acquisitions less disposals of non-produced assets" (land and other non-produced assets). However, these are not recorded in EAA because the NP Acquisitions less disposals of non-produced assets account and NP.1 Acquisitions less disposal of natural assets account are not included by the EAA (cf. 1.44).

# BOX 16 TANGIBLE/INTANGIBLE FIXED ASSETS VS [PRODUCED/NON-PRODUCED] NON-FINANCIAL ASSETS (AN.1/AN.2)

According to ESA 2010, non-financial assets are divided into produced non-financial assets (denoted as AN.1) and non-produced non-financial assets (denoted as AN.2) (cf. ESA 2010, 7.21).

(<sup>12</sup>) Cf. 2.029 to 2.031 for the time at which *inventories* are recorded.

Produced non-financial assets (AN.1) are outputs from production processes (cf. ESA 2010, 7.22). Those assets have been produced within the production boundary through a production process.

Non-produced non-financial assets (AN.2) are economic assets that come into existence other than through processes of production. They consist of natural assets, contracts, leases, licences, permits, and goodwill and marketing assets (cf. ESA 2010, 7.24). Non-produced non-financial assets have not been produced within the production boundary, no production process according to the production boundary has been involved to create those assets. A special category of assets are the "Contracts, leases and licences", the rights that give those assets to the owner are "non-produced", although human labour is involved to elaborate the "paper work".

Tangible/intangible fixed assets: this terminology has been used up to ESA 95, to differentiate assets you can "hold in the hands or touch physically" (a car, a house, a fruit tree) from assets you have to imagine / you cannot hold or touch physically (software, production quota right, licence), or use a device to "see" (radio waves, computer programme). The word "intangible" appears only once in the ESA 2010, 20.289. Mapping attempt below (AN.1174 Entertainment, literary or artistic originals and AN.2151 Radio spectra could be tangible and intangible but they are not relevant in agricultural industry).

## TABLE 5

## Mapping of tangible/intangible goods vs produced/non-produced nonfinancial assets

Categorization of assets		Tangibility			
		Tangible	Intangible		
Production	Produced	AN.111, AN.112, AN.113, AN.114, AN.115, AN.12	AN.117		
process	Non-produced	AN.21	AN.22		
Where:					
		Produced non-financial assets (AN.1)			
AN.1		Produced non-financial assets			
AN.111 Dwellings					
AN.112		Other buildings and structures	Other buildings and structures		
AN.113		Machinery and equipment			
AN.114	V.114 Weapons systems				
AN.115	15 Cultivated biological resources				
AN.117 Intellectual property products					
Non-produc	ed non-financial a	assets (AN.2)			
AN.2		Non-produced non-financial assets	5		
AN.21		Natural resources	Natural resources		
AN.22	Contracts, leases and licences				
AN.23 Purchases less sales of goodwill and marketing as			d marketing assets		

Source: ESA 2010, Table 7.1 — Classification of assets

#### 2.1.3.4 Changes in *inventories*

2.28. Changes in *inventories* correspond to the difference between goods entering and goods withdrawn from *inventories* over the reference period.

2.29. Goods entering *inventories* are either goods intended for consumption in the production process later (input *inventories*), in which case they are recorded at the time of transfer of ownership, or else they are goods from the industry itself to be put to future use, e.g. by sale or by transfer to the unit's fixed capital (output *inventories*), in which case they are recorded as *inventories* when their production is completed.

#### **BOX 17 TYPES OF INVENTORIES**

Goods entering inventories could be

- goods intended for consumption in the production process later (input inventories), in which case they are recorded at the time of transfer of ownership, if purchased, or when their production is completed, if they are used for intra-unit consumption;
- output inventories in form of finished products from the industry to be put to future use, e.g. by sale or by transfer to the unit's fixed capital, in which case they are recorded as inventories when their production is completed;
- an increase of the value of work-in-progress goods, which is recorded as output and as inventories of unfinished products (cf. 2.171).

2.30. In the case of unfinished products from the industry (recorded as work-in-progress), the value of the materials consumed and the services rendered over a reference period is also *implicitly* recorded as *inventories of unfinished products* at the end of that period (except for short-cycle standing crops, cf. 2.012; as a result, part of the materials consumed and services rendered during a reference period will have been consumed without an offsetting increase in the value of the *inventories*).

2.31. Goods withdrawn from *inventories* are, in the case of input *inventories*, goods entering the production process or, in the case of output *inventories*, goods leaving the industry to be sold or to serve some other use. In the first case, the goods are deducted from the *inventories of the* industry at the time of their actual intermediate consumption in the production process; in the second case, they are deducted from the *inventories* at the time of their sale or other use.

## 2.2 Output (13)

## 2.2.1 General comments on the concepts of output in the ESA 2010 and EAA

2.32. Output is the total of products created during the accounting period (ESA 2010, 3.14). It is important to keep the distinction between the term 'output' and the term 'production', while output denotes the resulting goods and services, production denotes the process.

2.33. According to the ESA 2010, output also includes (i) goods and services supplied by one local KAU to another belonging to the same institutional unit, (ii) goods produced by one local KAU and still in the *inventories* at the end of the accounting period in which they were produced, whatever use they are intended for subsequently. However, goods or services produced and consumed during the same accounting period by the same local KAU are not recorded *neither* as part of the output *n*or as intermediate consumption of that local KAU.

2.34. The concept of output used in the EAA which is related to the concept of 'total output' is based on an adaptation of the ESA 2010, since some agricultural goods and services produced and consumed during the same accounting period

(<sup>13</sup>) Cf. ESA 2010, 3.07 to 3.54.

within the same agricultural unit are recorded in the output of overall agricultural activity. The criteria for identifying these goods and services for inclusion in the agricultural industry output are set out in 2.055. The difference between the ESA 2010 and the method adopted in the EAA is represented by these elements of intra-unit consumption whose value is included in both output and intermediate consumption. The value added thus remains identical, whichever method is used.

2.35. As mentioned in 1.34, this *adaption* of the ESA rule is based on the special nature of the agricultural activity and the agricultural holding (as a local KAU). Furthermore, it makes it possible to:

- improve the economic analysis of agricultural accounts, especially the definition of technical coefficients and value added rates (the ratio between output and intermediate consumption),
- improve the comparison of technical coefficients and value added rates between subbranches of economic activity and countries. In actual fact, the output consumed within a unit is mainly limited to a few specific products (such as cereals, protein and oleaginous products, forage crops and milk for livestock feeding) and rates of intra-unit consumption vary considerably depending on the economic branch and country,
- strengthen consistency between the production, generation of income and entrepreneurial income accounts: the
  necessary consistency between transactions in products (output, intermediate consumption, etc.) and distributive
  transactions (compensation of employees, subsidies, taxes, rents, interest, etc.) has been strengthened since the reform of
  the common agricultural policy in 1992 in that subsidies (some of which concern products subject to intra-branch
  consumption) currently play an important role in the formation and development of agricultural income.

2.36. Although it is not *stipulated* by the ESA 2010, the rule adopted in the EAA is provided for by the SNA because of the special nature of agriculture, and by the FAO methodological manual (<sup>14</sup>). Finally, it allows the difference between the measurements of output stemming from the choice of basic unit (local KAU or unit of homogeneous production) to be reduced substantially.

## 2.2.2 Output of agricultural activity: quantities

2.37. In the compilation of the EAA, output is progressively broken down in quantity terms.

## FIGURE 1

## Schematic representation of resources and uses of agricultural products

Gross output (1q)							
Losses (2q)	Usable output (3q)					Initial stocks (IS) (4q)	
	Total available resources (5q)						
	lotra unit	Processing				Final stocks	(FS) (11q)
	consumption (6q)	by producers (7q)	Own final consumption (8q)	lotal Sales (9q)	S(*) (10q)	FS-IS (**) (12q)	

(\*) S = Own-account produced fixed capital goods

(\*\*) FS-IS = Change in *inventories*. In the above diagram, the final stocks are assumed to be greater than the initial stocks.

#### **BOX 18 CODES IN REGULATION VS ELABORATION TABLES**

The Regulation includes Figure 1 above to illustrate the process. While Figure 2 illustrates the same process with the codes using in the manual.

(14) FAO (1996) System of economic accounts for food and agriculture, United Nations, Rome.

## FIGURE 2

# Schematic representation of resources and uses of agricultural products according to the manual

Gross output (1q)						ľ	
Losses (2q)	Usable output (3q)					Initial stoo (4q)	:ks (IS) )
	Total available resources (5q)						
	Intra-unit Processing		Own final	Total Sales	S(*)	Final stock (14c	ks (FS) I)
	(9q=6q+7q+8q)	(10q)	(11q)	(12q=12q1+12q2+12q3)	(13q)	FS-IS (**) (16q)	

(\*) S = Own-account produced fixed capital goods

(\*\*) FS-IS = Change in *inventories*. In the above diagram, the final stocks are assumed to be greater than the initial stocks.

In this sense, the manual uses the codes from the elaboration tables (see Annex 2 of the manual) which do not correspond to those of the Regulation. <u>Table 6</u> below shows the codes used in the Regulation and manual.

#### TABLE 6

## Mapping of the codes in the Regulation and the manual

Description	Code in Regulation	Code in Manual
Gross output	1q	1q
Losses	2q	2q
Usable output	3q	3q
Initial stocks (IS)	4q	4q
Total available resources	5q	5q
Intra-unit consumption	бq	9q=6q+7q+8q
seeds, wine grapes, olives, milk	-	бq
feedingstuffs	-	7q
other	-	8q
Processing by producers	7q	10q
Own-final consumption	8q	11q
Total sales	9q	12q=12q1+12q2+12q3
domestic sales: to other agricultural units		12q1
domestic sales: outside of the industry		12q2
abroad		12q3
Own-account produced fixed capital goods	10q	13q
Final stocks	11q	14q
Changes in inventories (FS-IS)	12q	16q
Output	6q+7q+8q+9q+10q+12q	17q=7q+10q+11q+12q+13q+16q

2.38. The starting point for this progressive calculation is either:

- gross output (1q), or
- usable output (3q),

depending on whether the reference harvest figures include field, harvest and farm losses or not.

#### 2.2.2.1 Gross output: (1q)

2.39. This is the starting point for countries whose official harvest statistics include losses. In accordance with the industry concept, all the products of the agricultural activities of agricultural units within the industry (as mentioned in 1.62 and 1.63) need to be measured. In line with the convention adopted in 1.31 (that the output of the secondary agricultural activities of non-agricultural units is non-existent because all agricultural activities are assumed to be separable and therefore form the main activity of their own local agricultural KAU), all agricultural output needs to be recorded except that produced by units for which the agricultural activity represents solely a leisure activity (cf. 1.24).

BOX 19 GROSS OUTPUT FOR CROPS VS BIOLOGICAL PRODUCTION OF CROPS STATISTICS AND MAJOR CATEGORIES OF LOSSES IN AGRICULTURE

The <u>Table 7</u> terms illustrates the main agricultural production terms in crop statistics as it is defined in the Handbook on Annual Crop Statistics (<sup>15</sup>). The table also shows the different types of losses and wastages concerning crop production.

#### TABLE 7

## Production terms in crop statistics

Biological (real) production				
H	larvested productio	'n		
Useable p	roduction			
Marketed production	Direct consumption	On-holding losses and wastage	Harvested losses	Non-harvested

Source: Handbook on Annual Crop Statistics, Methodology, 2.1.2.2 Production terms, Table 2

#### 2.2.2.2 Losses: (2q)

2.40. This item refers to recurrent losses of goods in inventories (cf. 2.041). These include field, harvesting and other losses on farms (due to the perishable nature of the products, weather influences, such as frost, drought, etc.). Losses occurring during the various marketing stages, i.e. during transport from the farm, during storage with dealers and during processing or treatment in the processing industry should not be included here. In contrast, products offered for sale by producers but remaining unsold and therefore spoiled (particularly fruit and vegetables) should also be included here.

#### **BOX 20 MAJOR CATEGORIES OF LOSSES IN AGRICULTURE**

Losses in agriculture affect agricultural output (finished goods or work-in-progress), intermediate consumption or assets used in the agricultural production process. They can be classified into major categories:

- 1. Crop products due to bad weather (frost, drought, heavy rain, hail)
- 2. Crop products due to their perishable nature or diseases (e.g. infections by bacteria, viruses, fungi, attack by insect or rodent)
- 3. Livestock due to epidemics or diseases (e.g. bird flu, foot and mouth disease)
- 4. Market conditions (withdrawal of fruit, vegetables, etc.)
- 5. Intermediate consumption products (losses in items of IC, like fertilisers, feedingstuffs, etc.)
- 6. Assets due to "normal" accidents (such as fires, flooding, etc.)

#### **Types of losses**

2.41. Following ESA 2010, there are three types of losses that can be incurred by producers: recurrent losses in inventories (ESA 2010, 3.147), exceptional losses in inventories (ESA 2010, 6.13.e) and catastrophic losses (ESA 2010, 6.08 and 6.09).

#### **BOX 21 TYPES OF LOSSES**

#### **Recurrent losses**

Recurrent losses of goods arise from 'normal' or 'typical' physical deterioration, accidental damage, or pilfering (cf. 2008 SNA, 6.109 and 12.98 and ESA 2010, 3.146 and 3.147).

#### **Exceptional losses**

Exceptional losses arise from natural disasters, fire damage, exceptional insect infestation of grains, and other irregular, non-recurring events that are not considered as catastrophic losses (ESA 2010, 6.13e and SNA, 12.58).

#### **Catastrophic losses**

Catastrophic losses result from large-scale, discrete and recognisable events that destroy economic assets. Such events include major earthquakes, volcanic eruptions, tidal waves, exceptionally severe hurricanes, drought and other natural disasters; acts of war, riots and other political events; and technological accidents such as major toxic spills or release of radioactive particles into the air. Examples of such events are the deterioration in the quality of land caused by abnormal flooding or wind damage; the destruction of cultivated assets by drought or outbreak of disease; the destruction of buildings and equipment in forest fires or earthquakes (ESA 2010, 6.08 and 6.09 and SNA, 12.46).

#### Recording of the three types of losses

2.42. For recording losses of goods in inventories, a distinction needs to be made between recurrent losses, on the one hand, and exceptional and catastrophic losses, on the other. But the recording of losses also depends on the method of calculation of output and the type of basic statistical material of each country.

2.43. When output is calculated from data on initial and final *inventories*, sales and possibly other uses (such as ownaccount produced fixed capital goods), recurrent losses are already deducted from the changes in *inventories*, and recording of them a further time under the item 'losses' would lead to double-counting. In contrast, where the calculation of output is not based on stocks data but instead on a well-founded calculation such as actual birth figures, recurrent losses during production in the reference period concerned should be recorded, as well as losses of animals imported for rearing or fattening or born during previous periods.

2.44. Exceptional *losses* and catastrophic losses of goods in inventories have to be recorded in the accumulation accounts, namely in the 'other changes in the volume of assets' account. Output therefore includes the full value of these losses.

#### BOX 22 EXCEPTIONAL AND CATASTROPHIC LOSSES WHEN CALCULATED FROM DATA ON STOCKS

In addition to the provisions of point 2.44, when output is calculated from data on initial and final stocks, sales and possibly other uses, exceptional and catastrophic losses should be added to the changes in inventories (e.g. animals withdrawn during the year are no longer included in the final stock at the end of the year). The output of the following year is implicitly affected by these losses since the livestock are lower than they would have been without the exceptional or catastrophic losses.

2.45. Losses (whether recurrent, exceptional or catastrophic) of fixed assets *in livestock* (such as dairy cows, breeding animals, etc.) should be recorded in 'other changes in the volume of assets' account. They have no impact on the value of output. It should be stressed that losses affecting plantations which are already producing have to be recorded either as 'fixed capital consumption' or as 'other changes in the volume of assets', depending on the type of loss.

#### **BOX 23 THE NOTION OF LOSSES IN AGRICULTURE**

#### Treatment in ESA 2010

The treatment depends on the type of loss.

#### **Recurrent losses in ESA**

Goods held in inventories are subject to deterioration through the passage of time and are at risk from theft or accidental damage. Recurrent losses (from inventories) are those losses incurred on goods held in inventories due to normal rates of wastage, theft and accidental damage which reduce the value of the total change in inventories, and hence output (2008 SNA, 6.109)

Output is calculated as sales plus changes in inventories plus other elements. Thus, products not sold, not used or not transformed on the unit and not existing in the ending stocks are not parts of the output of the accounting period. This practice is followed even if the losses are high relative to output as long as they are recurrent.

Changes in inventories recorded within a specified accounting period is:

- The sum of the values of all goods entering inventories
- Less the sum of the values of all goods withdrawn from inventories
- Less the value of any recurrent losses of goods held in inventories (cf. 2008 SNA, 6.109)

Due to physical deterioration, accidental damage or pilfering; recurrent losses may occur to all kinds of goods in inventories:

- Losses of materials and supplies;
- Losses in the case of work-in-progress;
- Losses of finished goods;
- Losses of goods for resale. (ESA 2010, 3.147)

Recurrent losses to input and output stocks of inventories are recorded and valued as follows:

- For materials and supplies: as materials and supplies actually withdrawn to be used up in production (intermediate consumption);
- For work-in-progress (output not yet finished): valued as deduction from the additions accruing to production carried out in the same period;
- For finished goods and goods for resale: treated as withdrawals at the current price of undeteriorated goods (ESA 2010, 3.152)

Recurrent losses in inventories are included in withdrawals. Thus, they reduce the value of output or increase intermediate consumption. Recurrent losses of fixed assets are recorded as consumption of fixed capital.

#### **Catastrophic and exceptional losses in ESA**

By definition, catastrophic losses are recorded as other changes in volume that result from large-scale, discrete and recognisable events that destroy economic assets. (ESA 2010, 6.08)

Such events include major earthquakes, volcanic eruptions, tidal waves, exceptionally severe hurricanes, drought and other natural disasters; acts of war, riots and other political events; and technological accidents such as major toxic spills or release of radioactive particles into the air. Examples of such events are:

deterioration in the quality of land caused by abnormal flooding or wind damage;

destruction of cultivated assets by drought or outbreak of disease;

destruction of buildings, equipment or valuables in forest fires or earthquakes; and

accidental destruction of currency or bearer securities as a result of natural catastrophes or political events, or destruction of evidence of ownership (ESA 2010, 6.09)

Exceptional losses are classified as other changes in volume not elsewhere classified, which are the effects of unexpected events on the economic value of assets (ESA 2010, 6.12).

Exceptional losses in inventories (e.g. from fire damage, robberies, or insect infestation of grain stores) are those losses that are not considered as catastrophic losses ESA 2010, 6.13 (e).

Exceptional losses in inventories and catastrophic losses are classified as other changes in the volume of assets and are thus recorded in the accumulation accounts. Output of past accounting periods includes the full value of these losses. Their impact on output can only be measured indirectly over a longer period than in the case of recurrent losses, as they often entail a decrease in the production capacity.

It is important to note that the recording of exceptional and catastrophic losses has no direct impact on the values of output, value added and primary income while the recording of recurrent losses (translated into a negative change in inventory) lead to a reduction of these values. This means that, ceteris paribus (i.e. if no compensation is paid), the agricultural income indicators will be lower in the case of recurrent losses but not in the case of exceptional and catastrophic losses.

Transfers made in order to compensate these losses can be classified into three categories:

- insurance receipts;
- other current transfers (subsidies);
- capital transfers.

Insurance receipts are recorded in the "secondary distribution of income" account. They therefore have no effect on value added and entrepreneurial income. Their impact is only taken into account at the level of disposable income and savings. Transfers aimed at compensating recurrent losses in inventories are classified as current transfers (i.e. as subsidies) and are taken into account in the measure of net operating surplus.

Exceptional losses in inventories and catastrophic losses may be covered by capital transfers. The latter are recorded in the capital account of the accumulated accounts, thus permitting "direct linkage" with the recording of losses at accumulated accounts level.

#### Classification and treatment of losses in agriculture

Losses affect agricultural output (finished goods or work-in-progress), intermediate consumption or fixed assets used in the agricultural production process. The recording of losses in agriculture depends on the type of loss but also on the type of asset concerned:

According to the type of loss, the distinction between recurrent losses and exceptional and catastrophic losses should be the size of the losses. This distinction could be based on a single national threshold [for example at a level of 5%] of a country's agricultural gross value added at basic prices (excluding any losses). Once the threshold is reached, all losses in relation to a certain event should be considered exceptional or catastrophic. This includes losses in regions that are less affected.

According to the type of asset, the distinction according to the type of asset can be made between goods held in inventories and fixed assets:

- Goods held in inventories concern single-use plants and livestock that produce output once only. They can be work-in-progress, finished products or intermediate consumption elements such as materials and supplies.
- Fixed assets concern plants and livestock that are used repeatedly or continuously for more than one year to produce agricultural products.

#### Losses in inventories:

Recurrent losses in inventories should be included within changes in inventories (cf. ESA 2010, 3.146) while exceptional losses and catastrophic losses in inventories should be recorded as an entry in the "Other changes in volume of assets" account.

- Work-in-progress animals: In practice, animal output are calculated in most cases as the sum of
  the sales and possibly other uses, plus own account fixed capital formation during the accounting
  period, plus closing stocks of work-in-progress minus opening stocks of work-in-progress. In
  this case, the output value obtained will be net of any losses (whether recurrent, exceptional or
  catastrophic). This means that, in practice, the value of closing stocks (and therefore also the value
  of output) would have to be corrected (increased) by the value of the exceptional and catastrophic
  losses, and the difference between end-of-the-year and start-of-the-year stocks is referred to as
  "indirect approach / method".
- Single-use crops: In the EAA, most crop products are recorded at the time of harvest and not as work-in-progress (cf. <u>2.12.</u>). Crop output losses prior to harvest as well as post-harvest losses are usually recorded as a deduction from output.
- Intermediate consumption: Recurrent losses of intermediate consumption items (such as fertilisers and animal feedingstuffs) must be recorded as withdrawals from inventories, i.e. as an increase in the value of intermediate consumption. If the losses concerned are catastrophic or exceptional losses, they are entered under "other changes in the volume of assets".

#### Losses in fixed assets:

The treatment of losses affecting fixed assets should be similar to the treatment adopted in the other branches of the economy. A distinction is made between the following types of assets:

- Fixed assets in animals: All losses of fixed asset animals (whether recurrent, exceptional or catastrophic) are recorded as an entry in the "other changes in volume of assets" account.
- Plantations: A distinction has to be made between plantations which have reached maturity (i.e. which produce agricultural products) and those which are still growing. Whereas losses relating to plantations in their growing phase (forming work-in-progress) are treated in the accounts as a deduction from output, those affecting "mature" plantations have to be recorded either as consumption of fixed capital or as "other changes in the volume of assets", depending on the type of loss (recurrent losses versus exceptional or catastrophic losses)
- Other produced assets (buildings, machinery, etc.): recurrent losses are as consumption of fixed capital (if such a loss has to be covered by gross fixed capital formation and not by normal maintenance). Any loss exceeding the normal consumption of fixed capital and any catastrophic loss must be recorded in the "other changes in the volume of assets" account;
- Non-produced assets (land, etc.): any loss of non-produced assets must be recorded in the "other changes in the volume of assets" account.

#### Recording of the payments compensating for losses

Transfers intended to compensate losses in agriculture should be classified in a way that is consistent with the method adopted for recording these type of losses:

- Transfers compensating recurrent losses in inventories (i.e. single-use crops, work-in-progress animals, animal products, materials and supplies held in stock for intermediate consumption) are recorded as other subsidies on production;
- Transfers compensating losses in capital goods (i.e. plantations, fixed asset animals, other assets used in the agricultural production process) should be classified as other capital transfers (See 3.95 of the Regulation, ESA 2010, 4.165 a and b);

Transfers in the form of accident insurance receipts are recorded only in the secondary distribution of income account and therefore do not appear in the EAA.

The compilation of the EAA should consider who the direct beneficiary of the compensatory payments is. Payments paid to economic agents other than agricultural producers (e.g. slaughterhouses) should not be recorded in the EAA.

#### 2.2.2.3 Usable output

Usable output: (3q) = (1q) minus (2q) = gross output minus losses (at the producer stage)

2.46. This is the first item to be entered by countries whose reference harvest statistics do not include losses. It constitutes the disposable production of the reference period which will be either marketed, used as a means of production, processed by the producer himself, consumed in his household, put into storage, or possibly, used as own-account produced fixed capital goods.

#### 2.2.2.4 Initial stock: (4q)

2.47. These constitute the finished or semi-finished stocks of own products existing on the agricultural holdings (i.e. held by producers) at the beginning of the reference year. Stocks at the different marketing stages and intervention stocks should therefore not be entered here (cf. 2.201 and following regarding the treatment of livestock).

2.48. The initial stocks of 'poultry' should also include eggs hatching in incubators at the start of the reference period since they are regarded as semi-finished poultry products (cf. 2.018).

#### 2.2.2.5 Total available resources: (5q)

Total available resources: (5q) = usable output plus initial stocks (3q plus 4q)

#### 2.2.2.6 Intra-unit consumption: (6q) to (8q) = (9q)

2.49. Under the heading of intra-unit consumption recorded are products produced within the agricultural unit (local KAU) and used by the unit as inputs into the production process within the same accounting period.

2.50. All agricultural products (except livestock; cf. 2.067 and 2.208) sold by an agricultural unit to other producing agricultural units must be recorded as sales and then as intermediate consumption. These include goods subjected to treatment and processing and their by-products (e.g. the return of skimmed milk, bran, oilcake and sugar beet pulp and tops, as well as the return of seeds after treatment).

#### **BOX 24 TRANSACTIONS BETWEEN AGRICULTURAL UNITS**

It is important to clarify that the above described transactions between agricultural units should not be recorded as intra-unit consumption.

#### Classification of intra-unit consumption

2.51. Intra-unit consumption can be broken down according to the use of the products concerned:

#### **BOX 25 CLARIFICATION TO INTRA-UNIT CONSUMPTION**

As these points below (2.52 and 2.53) are in the Regulation under the section "Classification of intraunit consumption", they refer to products produced and consumed within the industry by the same agricultural unit (establishment) and the same agricultural activity. The current text of the Regulation only specifies that they relate to the same agricultural activity (2.52) or a different agricultural activity (2.53). However, it does not explicitly mention that the two cases relate to the same unit.

2.52. Products consumed within the industry by the same agricultural activity (i.e. the same class of activity, at NACE Rev. 2 four-digit level) (*6q*):

- seed (for cereals, vegetables, flowers, etc.): reused for the same crop;
- wine grapes and grape must: used in wine production;
- olives: used in olive oil production;
- milk: used in livestock feed

#### BOX 26 RECORDING OF MILK AND EGGS AS INTRA-UNIT CONSUMPTION (6Q)

#### Milk used in livestock feed

Following NACE Rev. 2, the former class 'Farming of cattle, dairy farming' was split into two classes: 'Raising of dairy cattle' and 'Raising of other cattle and buffaloes'. This means that not all milk used in livestock feed belongs to the same agricultural activity. The first sentence of this point in the Regulation refers to "Products consumed within the industry by the same agricultural activity (i.e. the same class of activity, at NACE Rev. 2 four-digit level)". Thus, milk used in livestock feed should be recorded under this point when they are consumed by the same activity. Concerning the milk of other species used in livestock feed only the part of those used for the same species (in the same class of activity) should be considered (cf. NACE Rev. 2, 01.43 to 01.46).]

#### Eggs

In addition to the products listed in the Regulation, eggs used in own hatcheries should be considered (See NACE Rev. 2, class 01.47).

2.53. Products consumed within the industry by a different agricultural activity (i.e. a different class of activity, at NACE Rev. 2 four-digit level) [7q and 8q]. These are mainly crop products used in animal feed but also animal by-products used in the production process of another activity (slurry and manure used as fertilising elements for crop production).

#### **BOX 27 ANIMAL HUSBANDRY AND MILK FROM DAIRY CATTLE**

#### Animal feed and husbandry

In addition to crop products used in animal feed and listed in the Regulation, crop products used in animal husbandry (e.g. litter straw) should also be taken into account. This point therefore applies to animal husbandry in general.

#### Milk of dairy cattle and milk directly taken from calves under cow

Since introduction of NACE Rev. 2 'Milk of dairy cattle used as livestock feed in raising of other than calves for dairy production' should be recorded under <u>2.53.</u>

Milk directly taken from calves under cow (suckler cow, dairy cow) is not recorded in EAA (natural process). For other mammals (e.g. horses and other equines, camels and camelids, sheep and goats and swine/pigs), human and technological intervention in the milking associated to a feeding process might be negligible.

Crop products used in animal *husbandry* can be classed according to the degree to which they are normally marketed (which is estimated in general):

- normally marketable animal feed products: cereals (wheat, rye, barley, oats, maize, sorghum, rice and other cereal grain); protein crops; potatoes; oilseeds (rape seed, sunflower seed, soya beans and other oilseeds),
- normally unmarketable animal husbandry products:
  - annual fodder products: root crops (sugar beet, fodder beet, swedes, fodder turnips, fodder carrots, fodder kale/curly kale and other root crops); fodder maize and other green fodder (green, dried or preserved),
  - perennial fodder products: permanent and temporary fodder products derived from an economic activity (green, dried or preserved),
  - fodder by-products (straw, chaff, plant leaves and ends and other fodder by-products).

#### Definition of intra-unit consumption to be included in the industry's output.

2.54. Agricultural products undergoing intra-unit consumption are not included in the measurement of the output of the industry unless they meet certain criteria. The setting of restrictive criteria for recording intra-unit consumption meets two requirements: first, a methodological one since, after deviating from the letter of the ESA rule, there was a need to follow it in spirit (by involving two separate activities); secondly, a practical one, since the criteria to be developed were to serve as a precise and comparable framework for defining which intra-unit consumption had to be recorded, to make this method of measuring output feasible.

2.55. These criteria are as follows:

- 1. The two activities exercised should come under different four-digit levels of NACE Rev. 2 (Division 01: Crop and animal production, hunting and related service activities). The application of this criterion thus precludes, for example, the valuation of seed produced and used on the same holding for crop production (during the same accounting period);
- 2. The agricultural product should have a significant economic value for a significant number of farmers.
- 3. Data on prices and quantities must be available without too much difficulty. This criterion is difficult to meet for some unmarketable products.

2.56. In line with the definition of the selection criteria for including intra-unit consumption products in the measurement of output (cf. 2.055), only crop products used in animal feed (marketable or not) are to be recorded in the agricultural output of the industry.

#### BOX 28 PRODUCTS INCLUDING INTRA-UNIT CONSUMPTION AND RECORDED IN THE OUTPUT

In the case the criteria listed in point 2.55 are met, "straw used as stable bedding" and "milk of dairy cattle used in livestock feed to raise calves for other than dairy cattle" should also be recorded in the agricultural output of the industry.

2.57. When these products are recorded in the industry's output, they must also be recorded as intermediate consumption, thereby respecting the principle that total quantities produced and then used for a different production activity during the reference year are taken into account (cf. 2.055). When the change from output to intermediate consumption takes longer than the reference year in question, then the corresponding quantities of output should be recorded as 'final stocks' of the product concerned during the reference year.

2.58. Animal by-products are excluded from intra-unit consumption because of the practical difficulties of unavailability of data on quantities and especially prices.

#### 2.2.2.7 Processing by producers: (10q)

2.59. Under the heading of processing by producers recorded are quantities produced for further processing by agricultural producers (e.g. milk processed to make butter or cheese, apples processed to make apple must or cider) but only in the framework of processing activities which are separable from the main agricultural activity (on the basis of accounting documents, cf. 1.26). Only the raw products (e.g. raw milk, apples) should be recorded and not the processed products manufactured from them (e.g. butter, apple must and cider). In other words, the work incorporated in the processing of agricultural products is not taken into consideration under this heading.

#### **BOX 29 FURTHER EXAMPLES ON PROCESSING BY PRODUCERS**

In addition to raw products listed in the Regulation, further examples can be mentioned, like plums, pears, wine. As well as further examples for the processed products are fruit spirits, brandy and cognac.

2.60. Where these processing activities are inseparable non-agricultural activities, the product of these processing activities is recorded in the value of the output of the agricultural industry (cf. 1.25). Basic agricultural products used as intermediate consumption by these processing activities are not recorded as either output or intermediate consumption. This rule stems from the fact that the two activities (the production of agricultural products and the processing of such products) cannot be distinguished on the basis of accounting documents. Accordingly, the costs of these two types of activity are entered together and their output is assessed as the output of processed products.

#### 2.2.2.8 Own final consumption: (11q)

#### 2.61. This includes:

- products consumed by the farmers' households which produced them;
- products stemming from the agricultural unit (holding) and used for payment in kind in the form of remuneration paid to holding workers or exchanged for other goods.

2.62. Agricultural products processed by the agricultural unit in a separable way (i.e. giving rise to the formation of a local non-agricultural KAU) and consumed by farmers' households are recorded in the output of the 'Manufacturing' industry (section C of NACE Rev. 2), as own final consumption. By contrast, agricultural household consumption of agricultural products processed in an inseparable way (i.e. the output of inseparable non-agricultural processing activities), is recorded as own final consumption of these activities (cf. 2.080) and included in the output of the agricultural industry.

2.63. The imputed rental value of the owner-occupied housing unit is not recorded here but in the branch 'Renting and operating of own or leased real estate' (Class 68.20 of NACE Rev. 2). Renting of accommodation is a non-agricultural activity which is always considered to be separable from agricultural activity.

## 2.2.2.9 Sales: (12q) = (12q1) + (12q2) + (12q3)

2.64. This heading covers sales of agricultural products made by agricultural units to other units (agricultural or those of other branches), including sales to storage and intervention centres, with the exception of disposals of fixed assets. It is broken down into domestic sales outside the industry (*12q2*), domestic sales to other agricultural units (*12q1*) and sales abroad (*12q3*).

2.65. Consequently, for a given unit, sales correspond to the turnover obtained from the marketing of its output. It should be noted that sales of animals classed as fixed assets, which are taken out of the productive herd (exports or slaughterings) are not recorded as sales. Animals classed as fixed assets and taken out of the productive herd are transferred into *inventories* before their sale, but the sales of these animals (slaughterings or exports) appear in the accounts as destocking, seen only in the capital account. The corresponding output had already been imputed as a part of own-account produced fixed capital goods (<sup>16</sup>) then recorded in the production account.

2.66. Livestock considered to be *inventories*: the disposal of livestock considered to be *inventories* to another holding constitutes a sale in accordance with the definition given in 2.064. This sale may be offset by a removal from *inventories* if the livestock is recorded as *inventories* at the start of the reference period (otherwise, only sales are recorded).

2.67. The acquisition of livestock is an entry *into inventories* if the products are not resold during the reference period. Acquired livestock, however, cannot be treated as intermediate consumption because, by definition, intermediate consumption goods are destined to disappear (or at least undergo substantial transformation) during the production process. These animals are regarded as work-in-progress since the livestock production process is not fully terminated (the production process finishes at the time of slaughter). Acquisitions are therefore recorded as entries *in inventories* of work-in-progress *(products)* and thus recorded as 'negative' sales and not as intermediate consumption. In the case of trading between resident holdings, sales and the corresponding purchases offset each other (except for the costs of transferring ownership) (<sup>17</sup>). In view of this special treatment of trade in live animals between agricultural units, there is no intermediate consumption under 'livestock and animal products' (<sup>18</sup>).

2.68. Livestock classed as fixed assets: trade in fixed-asset livestock between agricultural units is not recorded in sales as defined above but as trade in assets (recorded in the capital account as GFCF of agriculture). In the case of trading between resident holdings, sales and corresponding purchases offset each other (except for the transfer costs).

<sup>(&</sup>lt;sup>16</sup>) Output for these animals is calculated by adding own-account produced fixed capital goods (= entries less disposals of assets) and sales (= disposals).

<sup>(&</sup>lt;sup>17</sup>) When valuing trade, the costs involved in the transfer of ownership (trade margins and transport costs) are included in the value of the acquisition. In the case of trading between resident holdings, sales and purchases offset each other except for the transfer costs which are treated, in the calculation of output, as a 'negative sale' as a 'negative amount' in column 12 (sale) of Table 1 of the Elaboration table (Appendix III).

<sup>(18)</sup> An identical treatment applies to other agricultural products having the character of *inventories*.

2.69. Recording of imports of live animals (not intended for immediate slaughter): as in the case of trade between resident holdings, livestock treated as *inventories* (other than animals for immediate slaughter) and imported during the reference period by agricultural units are recorded as entries *into inventories* of work-in-progress and are therefore deducted from sales. On the other hand, livestock classed as fixed assets (such as breeding animals) and imported as such, should not be deducted from sales.

2.70. Nevertheless, as it is often difficult, in practice, to make relevant distinctions between the different categories of animals on the basis of available sources of EU data (between animals classed as fixed assets and those classed as *inventories*), all imports are considered to be of animals intended for building up *inventories* and the value of all imported animals (except those intended for immediate slaughter) is deducted from the value of sales. This method of recording guarantees treatment of external trade in live animals similar to that adopted for calculating gross indigenous production in animal production statistics.

#### 2.2.2.10 Own-account produced fixed capital goods: (13q)

#### BOX 30 DEFINITION OF OWN-ACCOUNT PRODUCED FIXED CAPITAL GOODS

Own-account produced fixed capital goods are assets produced for the producer's own use.

#### 2.71. These only include:

- work done by agricultural units (e.g. use of labour, machines and other means of production, including planting stock) for the own-account establishment of plantations such as orchards, vineyards, soft fruit plantations and hop-fields. In general, own-account work on planting orchards and vineyards, etc., is made up of a large number of individual work operations which cannot be added up into specific quantities,
- animals produced in agricultural units and transferred to their fixed capital *goods* (cf. 2.161). These are animals reared for the output which they supply on a regular basis (mainly breeding livestock, dairy livestock, draught animals, sheep and other animals reared for their wool; cf. 2.202).

#### BOX 31 RECORDING OF OWN-ACCOUNT PLANTATIONS IN THE ELABORATION TABLES

In case of plantations no quantities should be indicated at the intersection of column 13q with the "Plantations" row.

#### 2.2.2.11 Final stocks: (14q)

2.72. These are stocks of finished products or work-in-progress on the holdings of the industry (i.e. held by producers) at the end of the reference year. Stocks at different marketing stages (especially reserves held by dealers and processing firms) as well as intervention stocks should not be listed here.

2.73. Products which are only temporarily stocked and are consumed in a later period within the industry (e.g. cereals for feed, seed and planting stock, etc) should also be entered here since the final use of the product is not known at the time of their entry into stocks.

#### 2.2.2.12 Total uses (15q):

Total uses: (15q) (not including intra-unit consumption) = (10q) + (11q) + (12q) + (13q) + (14q) = processing by producers plus own final consumption plus sales plus own-account produced fixed capital goods plus final *inventories*.

2.74. This entry is the sum of columns *10q* to *14q*.

#### 2.2.2.13 Changes in *inventories*

Changes in *inventories*: (16q) = (14q) minus (4q) = additions to *inventories* (A) minus withdrawals from *inventories* (W)

2.75. The change in *inventories* in the industry (excluding *inventories* at the various marketing stages) during the reference year is measured by calculating the difference between entries *into* and withdrawals *from inventories*, or the difference between final and initial inventories. In the latter case other changes in volume and holding gains (net of losses) are to be deducted in the calculation of values (cf. 2.179 and following).

#### 2.2.2.14 Output of agricultural activities

Output of agricultural activities (17q) = (7q, animal feedingstuffs) + (10q) + (11q) + (12q) + (13q) + (16q)

2.76. In accordance with the concept of output and the rules for recording intra-unit consumption (cf. 2.049 and following), processing of agricultural products (cf. 2.059 and 2.060), and own final consumption (cf. 2.061, 2.062, 2.063), the output of agricultural activities can be depicted as follows:

#### TABLE 8

## **Output of agricultural activities**

Resources	Uses	Agricultural output of the agricultural industry
Gross output [1]	Sales [12] (total, excluding trade in animals between agricultural holdings)	Х
	Change in <i>inventories [16]</i> (with producers)	Х
- Losses [2]	Own-account produced fixed <i>assets [13]</i> (plantations yielding repeat products, productive animals)	Х
	Own final consumption [11] (of agricultural products)	Х
= Usable output [3]	Processing by producers [10] (of agricultural products, separable activities)	Х
	Intra-unit consumption [9]:	
	<ul> <li>for the same activity [6]: (seeds, milk for livestock feed*, wine grapes, olives for olive oil, hatching eggs)</li> </ul>	
	- for a separate activity [7]+[8]**:	
	crop products used in animal feed [7] (cereals, oilseeds, fodder crops, marketable or not, etc.)	Х
	animal by-products used in crop production [8]: (slurry, manure)	

\* It applies to the milk used in livestock feed within the same activity according to the NACE Rev.2 classes (especially 01.41 to 01.46), for example milk from dairy cows and buffaloes intended to raise calves for dairy production (cf. NACE Rev. 2 classes 01.41).

\*\* In addition to the products listed in the Regulation (EC) No 138/2004 crop products used in animal husbandry (e.g.: bedding straw) and milk of dairy cattle used in livestock feed to raise calves for other than dairy cattle should be considered (flow between two activities, NACE Rev.2 class 01.41 to class 01.42). See Box 27.

2.77. The 'total output' concept for measuring the output of agricultural activity includes trade in agricultural goods and services between agricultural units as well as intra-unit consumption of livestock feed products (marketable or not) (cf. 2.034).

#### BOX 32 COMPLETENESS OF 'TOTAL OUTPUT'

The 'total output' of agricultural activities also includes other crop products used in animal husbandry such as straw used as stable bedding [7] (marketable or not) and milk of dairy cattle used as livestock feed in raising of other than calves for dairy production (cf. <u>2.76</u>).

## 2.2.3 Output of inseparable non-agricultural secondary activities

2.78. A distinction is made between two types of 'inseparable non-agricultural secondary activities' (cf. 1.29 and 1.30):

- 'processing of agricultural products': this group covers activities which are an extension of agricultural activity and in which agricultural products are employed. The processing of agricultural products is the typical activity of this first group,
- 'other inseparable non-agricultural secondary activities': this group covers activities which use the agricultural holding and its means of agricultural production. It is less uniform than the first group.

2.79. In general, these activities include a variety of products (goods and services) whose quantities cannot be added together.

## BOX 33 RECORDING OF INSEPARABLE NON-AGRICULTURAL SECONDARY ACTIVITIES IN ELABORATION TABLE

For these activities only values should be indicated at the intersection of column 17 with the rows "processing of agricultural products" and "other inseparable secondary activities (goods and services)".

2.80. The product of these activities is either intended for sale, barter, payment in kind, own final consumption (cf. 3.062) or kept in *inventories*.

2.80.1. According to ESA 2010, 3.82 Research and development (R & D) is creative work undertaken on a systematic basis to increase the stock of knowledge, and use of this stock of knowledge for the purpose of discovering or developing new products, including improved versions or developing new products, including improved versions or developing new products, or discovering or developing new or more efficient processes of production. R & D of a significant size relative to the principal activity is recorded as secondary activity of a local KAU. A separate local KAU is distinguished for R & D where possible, which is not allocated to agricultural industry. For units having also R & D activities, if they cannot be allocated to a separate local KAU and if it is possible to estimate R & D expenditure on agricultural activities, these estimations should be recorded as agricultural output as 'other inseparable non-agricultural secondary activities' (own account production) and as GFCF.

## 2.2.4 Output of the agricultural industry

2.81. In accordance with the definition of the output of the agricultural industry (cf. 1.16), the output of the agricultural industry is made up of the sum of the output of agricultural products (cf. 2.076 to 2.077) and of the goods and services produced in inseparable non-agricultural secondary activities (cf. 2.078 to 2.080.1).

## 2.2.5 Valuation of output

2.82. Output is to be valued at the basic price. The basic price is the price receivable by the producers from the purchaser for a unit of a good or service produced as output minus any tax (i.e. taxes on products) payable on that unit as a consequence of its production or sale plus any subsidy (i.e. subsidies on products) receivable on that unit as a consequence of its production or sale. The basic price excludes any transport charges invoiced separately by the producer. It also excludes holding gains and losses on financial and non-financial assets (cf. ESA 2010, 3.44).

2.83. Components of output such as sales, payments in kind, additions to *inventories* and intra-unit consumed products should be valued at the basic price. Similarly, output for own final use (i.e. own-account fixed capital goods and own final consumption) should be valued at the basic price of similar products sold on the market. Work-in-progress and additions to it are valued proportionally to the current basic price of the finished product. If the latter has to be assessed in advance, the calculation should be based on the actual costs incurred plus an amount corresponding to the anticipated operating surplus or mixed income.

2.84. When establishing the EAA according to the 'net' recording system (cf. 3.033 and 3.035 to 3.043), the VAT invoiced by the producer is not included when establishing the basic price.

2.85. The price obtained by the producer corresponds to the producer price (not including invoiced VAT) as defined in the 2008 SNA, 6.51 to 6.54 (i.e. the ex-farm price). The basic price can be obtained from the producer price by adding subsidies less taxes (other than VAT) on products. When problems of allocating a tax or subsidy on products to a specific product make it difficult to calculate the basic price, output can be calculated direct at the basic price. In this case it is obtained direct from the value of the producer price (exclusive of invoiced VAT), minus the value of taxes on products (other than VAT) and plus the value of subsidies on products.

2.86. The valuation of output at the basic price makes it necessary to distinguish between taxes (other than VAT) on products and subsidies on products (cf. 3.027 and 3.053), on the one hand, and other taxes and subsidies on production (cf. 3.044 and 3.058), on the other. Taxes and subsidies on products are not recorded in the generation of income account of the industry (this account only includes other taxes on production and other subsidies on production, cf. 3.055).

2.87. The price of a given item received by producers is not necessarily always the same; it may vary, inter alia, according to the type of delivery. For example, the structure, in terms of quality, of goods exported directly by the producer can be different from the structure of the sales intended for national consumption or of domestic sales to other agricultural units. These goods would consequently have a different price. It should be noted that when a producing unit directly exports its output, the receipt or payment of monetary compensatory amounts for the exports must be taken into account in the EAA.

#### **BOX 34 SUBDIVISIONS OF DOMESTIC SALES**

Taking into account the circumstances mentioned above, in the elaboration tables of the EAA is subdivided into domestic sales to other agricultural units (12p1), domestic sales to outside the industry (12p2) and sales abroad (12p3).

2.88. These general principles of valuation require specific applications for certain products such as seasonal products and wine. These are explained in the section treating the valuation of changes in *inventories* (cf. 2.185 to 2.200).

## 2.3 Intermediate consumption (<sup>19</sup>)

## 2.3.1 Definition

2.89. Intermediate consumption represents the value of all goods and services used as inputs in the production process, excluding fixed assets whose consumption is recorded as *consumption of* fixed capital. The goods and services concerned are either transformed or used up in the production process (cf. ESA 2010, 3.88). In a detailed classification by different categories of items, intermediate consumption shows the interlocking of agriculture with other branches of the economy brought about by inputs. Intermediate consumption is also used as an entry in the calculation of factor intensities (i.e. the ratio of two factors of production, for example of intermediate consumption and labour input).

2.90. Intermediate consumption excludes new or existing acquired fixed assets which have been produced in the economy or imported: they are recorded as GFCF (cf. 2.109 (c) to (f). This concerns items which are non-agricultural fixed

(<sup>19</sup>) cf. ESA 2010, 3.88 to 3.92

assets, such as buildings or other structures, machines and equipment, as well as agricultural fixed assets such as plantations and productive animals. The acquisition of non-produced assets such as land is likewise excluded from intermediate consumption. Inexpensive tools used for common operations such as saws, hammers, screwdrivers, spanners, wrenches and other hand tools, small devices such as pocket calculators are recorded as intermediate consumption.

2.91. Intermediate consumption includes goods and services consumed in ancillary activities (e.g. administration of purchases and sales, marketing, accounting, transport, storage, maintenance, etc.). The consumption of these goods and services should not be distinguished from that of goods and services consumed in the course of the main (or secondary) activity of a local KAU.

2.92. Intermediate consumption also includes all expenditure on goods and services which, while benefiting employees, are nonetheless mainly for the benefit of the employer (<sup>20</sup>) (e.g. reimbursement of employees for travel, separation, removal and entertainment expenses incurred in the course of their duties; expenditure on providing amenities at the workplace).

2.93. In view of the adoption of the concept of industry and local KAU as the basic unit of the EAA, intermediate consumption of the industry includes goods and services provided by one local KAU to another local KAU (for production purposes), even if these units belong to the same institutional unit.

2.94. Trade in livestock, which is similar to stocks of work-in-progress (such as piglets and eggs for hatching) and is carried out between agricultural units, and imports of livestock, are not recorded as intermediate consumption (or as any type of output) (cf. 2.066 to 2.070).

2.95. Goods and services produced and consumed within the same agricultural unit (i.e. produced and used in the same reference period for agricultural production purposes) are not recorded as intermediate consumption unless they also appear in the output of the industry (i.e. crop products used in animal feed, cf. 2.049 to 2.057; 2.060).

2.96. This point was dropped from the Regulation following Regulation (EC) No 909/2006 and it is thus not relevant for the manual either.

## 2.3.2 Elements of intermediate consumption (<sup>21</sup>)

#### A) Seeds and planting stock

2.97. This heading covers the total consumption of bought-in domestic and imported seed and planting stock for current production and maintaining stocks in vineyards, orchards, and Christmas tree plantations. It includes in particular direct purchases of seed and planting stock from other farmers. However, seed produced and consumed within the same unit in the same reference period is not recorded under this heading (cf. 2.052).

#### **BOX 35 SEEDS AND PLANTING STOCK FOR FORESTRY**

# In the case of inseparable forestry activities, seeds and planting stock for forestry are also included by this heading.

2.98. It should be noted that intermediate consumption of field crop and vegetable seed mainly corresponds to (i) first generation seed purchased by producers for propagation and (ii) certified seed bought by agricultural holders for crop production.

#### B) Energy; lubricants

2.99. This heading covers electricity, gas and all other solid and liquid fuels and propellants. It should be noted that only the consumption of energy on agricultural holdings is to be shown, and not consumption in farmers' households.

(20) This is generally the case if production is promoted, and in some cases only made possible, by this expenditure by the employer.

(<sup>21</sup>) cf. Appendix I.B.

#### C) Fertilisers and soil improvers

2.100. Soil improvers include, for example, lime, peat, sludge, sand and synthetic foams.

#### D) Plant protection products and pesticides

2.101. These include herbicides, fungicides, pesticides and other similar inorganic and organic substances (e.g. poisoned bait).

#### E) Veterinary expenses

2.102. Medicines which are invoiced separately from the veterinary surgeon's fee should be recorded here (medicines administered directly by the veterinary surgeon are recorded with his fee) and veterinary costs.

#### F) Animal feedingstuffs

2.103. This heading covers all bought-in domestic and imported feedingstuffs, whether processed or not, including those obtained direct from other farmers. Crop products used in animal feed produced and used in the same reference period on the same agricultural holding are also recorded and entered under a subheading of the 'animal feedingstuffs' heading as intra-unit consumption (cf. 2.057). They are also recorded in output.

2.104. The costs incurred in the preparation and preservation of feedingstuffs (e.g. energy costs and costs for chemical preservatives, etc.) must be broken down by type of cost and not combined with the feedingstuffs themselves.

#### **BOX 36 RECORDING OF COSTS IN THE ELABORATION TABLE**

The costs which cannot be assigned to any of the specified categories in elaboration <u>Table 3</u> (Annex 2 of this manual), should be shown in the "Other goods and services" category (e.g. grain and roughage drying services provided outside of agricultural industry).

#### G) Maintenance of materials

2.105. This heading includes:

- purchases of goods and services for maintenance (i.e. regular replacement of individual damaged or broken parts) and repairs required to keep capital goods in usable condition (cf. 2.127 to 2.129),
- purchases of crop protection equipment (excluding preparations for plant protection and pest control, cf. 2.101), such as detonators, anti-hail protection, anti-frost smoke, etc.

#### **BOX 37 EXAMPLE: MAINTENANCE PRODUCTS**

The first item in the list above refers to products used for maintenance capital goods such as assets in transport, machines and other equipment.

#### H) Maintenance of buildings

2.106. This heading covers purchases of materials (cement, bricks, etc.), labour costs or overall costs incurred by farmers for maintaining agricultural buildings or other structures (except housing structures) (cf. 2.127 to 2.129).

#### I) Agricultural services

2.107. These agricultural services (which constitute the hire of machines and equipment with the corresponding labour) are an integral part of agriculture (cf. 1.82 to 1.91) and are recorded as intermediate consumption and also entered under 'output'.

#### J) Financial intermediation services indirectly measured (FISIM)

2.107.1. In accordance with the convention of ESA 2010, the value of financial intermediation services indirectly measured (FISIM) used by the agricultural industry should be recorded as intermediate consumption of the agricultural industry (cf. ESA 2010, Chapter 14).

#### **BOX 38 FISIM AND COUNTERPART INTEREST**

#### FISIM

Financial intermediaries explicitly charge commissions and fees to their customers. The measurement of the production and consumption of these services poses no special conceptual or practical problems for national accountants. But financial intermediaries are also able to provide services for which they charge implicitly by paying or charging different rates of interest to borrowers and lenders. They pay lower rates of interest than would otherwise be the case to those that lend them money and charge higher rates of interest to those who borrow from them. The resulting net receipts of interest are used to defray their expenses and provide an operating surplus. This scheme of interest rates avoids the need to charge their customers individually for services provided and leads to the pattern of interest rates observed in practice. However, in this situation, the national accounts must use an indirect measure, called financial intermediation services indirectly measured (FISIM), of the value of the services for which the intermediaries do not charge explicitly.

FISIM are measured as the difference between the 'reference rate' and the rate actually paid to depositors and charged to borrowers. The 'reference rate' of interest is the rate at which both lender and borrower would be happy to strike a deal and it lies between bank interest rates on deposits and on loans. It does not correspond to an arithmetic average of the rates on loans or deposits. The rate prevailing for interbank borrowing and lending is a suitable choice.

FISIM are imputed for all loans and deposits. These indirect charges apply only to loans and deposits provided by, or deposited with, financial institutions. The estimation of FISIM is done by national accounts. The allocation of FISIM among user industries is done based on the stocks of loans and deposits of each industry and, if this information is not reliable, on the output of each industry.

#### **Counterpart interest**

The counterpart interest is recorded in the property income (interest payable and receivable, cf. <u>3.11.</u>, <u>3.74.-3.79.</u>).

#### K) Other goods and services

2.108. These other goods and services include:

- a) rental paid, either directly or as a component of a tenancy agreement, for use of non-residential buildings and other capital assets (whether *intellectual property products or other produced non-financial assets*) such as the hire of machines and equipment without operating staff (cf. 1.23) or computer software. However, if no distinction can be made between the renting of non-residential buildings by a local agricultural KAU and the renting of land, the whole item is recorded as renting of land in the enterprise's income account (cf. 3.082);
- b) fees for workers' medical examinations;
- c) fees for agricultural consultants, surveyors, accountants, tax consultants, lawyers, etc;
- d) purchases of services of market research and advertising, expenditure on staff training and similar services;
- e) expenditure on transport services: this includes reimbursement of employees for travel, separation and removal costs incurred in the course of their duties, primarily for the employer's benefit, and the amounts paid by the employer to independent enterprises which provide transport for employees (except for transport between home and the place of

work; cf. 2.092, 2.109(b) and 3.016) as well as the transport of goods for fairs and exhibitions. If, on the other hand, transport is provided by the staff and the employer's own transport, the costs should be recorded under appropriate headings.

Since purchases of goods are to be valued at the purchaser price and sales at the basic price (cf. 2.110 and 2.111, 2.082), the cost of transport of goods is not normally indicated separately. Transport costs included in sales are considered to be invoiced separately. In the case where the producer engages a third party to transport the goods to the purchaser, the transport costs appear as neither intermediate consumption, nor output in the EAA. In the case where the producer transports the goods himself, this is considered a non-agricultural activity, for which the costs should be recorded appropriately, if the activity is inseparable. Finally, this heading includes expenditure incurred under non-agricultural secondary activities concerning transport, trade and warehousing for third parties;

- f) postal and telecommunications costs;
- g) remuneration for services contained in gross premiums of insurance taken out to provide the enterprise with coverage for risks such as the loss of livestock, damage by hail, frost, fire and gales. The remainder, i.e. the net premium, is the component of the gross premium paid which is available to insurance companies for settling claims.
   An accurate breakdown of the gross premiums into the two components can only be done for the national economy as a whole, as is done for the national accounts. The allocation of the service component between production branches is generally done using adequate breakdown keys, in connection with the construction of input-output tables. Reference shall therefore be made to national accounts when completing that item in the EAA (for the recording of subsidies related to insurance services, see 3.063, footnote 1);
- h) stud fees;
- i) billed bank charges (but not interest for bank loans);
- j) subscriptions, fees for membership of professional associations such as chambers of agriculture, chambers of commerce and agricultural trade unions;
- k) subscriptions to agricultural cooperatives;
- I) costs of dairy tests, shows and entries in pedigree registers;
- m) expenditure on artificial insemination and castration;
- n) payments for the use of non-produced *non-financial* assets such as patented assets, trade marks, copyright, milk quotas or other production rights, etc. Purchases of these non-produced *non-financial* assets, on the other hand, are recorded in the capital account;
- o) payments made to public bodies for the purpose of obtaining licences or permits to carry out commercial or professional activities, if the permits are subject to a thorough scrutiny for regulatory purposes (unless the charges are disproportionate to the benefits of the services concerned, cf. 3.048(e), and ESA 2010, 4.80(d);
- p) purchases of inexpensive small tools, working clothing, spare parts and durable equipment used to perform relatively simple operations (ESA 2010 3.89 (f) (1) and 2008 SNA, 6.225);
- q) fees for short-term contracts, leases and licences recorded as non-produced assets; this excludes the outright purchase of such non-produced assets.

#### **BOX 39 MILK QUOTAS WERE WITHDRAWN IN THE EU**

It should be noted that the milk quotas were abolished in the EU in 2015 (CAP 'Health check' (2007/2195(INI)) (cf. <u>Box 60 Sugar and milk quotas regime expired in the EU</u>). Source: <u>https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Milk\_and\_milk\_products\_\_30\_years\_of\_</u>quotas

In analogy and in general, production quota rents of milk or other agricultural goods can apply for given period of time inside and outside the EU, which in any case has to be checked by each country compiling EAA.

#### L) Items not included in intermediate consumption

2.109. Intermediate consumption, does not include:

- a) goods and market services which production units provide to their employees at no cost or at a reduced rate, in so far as this expenditure is clearly and primarily for the benefit of the employees. The value of these goods and services forms part of compensation of employees (cf. 3.018);
- b) travel allowances paid by the employer in cash to his employees; these are regarded as an element of compensation of employees (the employee then uses this money to pay for transport between his home and place of work) (cf. 4.018(c). Likewise, payments made by the employer direct to a transport enterprise for the collective transport of workers (for travel between home and the place of work) count as compensation of employees. These services such as transport from home to work or parking facilities have some of the characteristics of intermediate consumption. Nonetheless, employers are considered to need this type of service to attract and keep their employees (which they would normally have to pay for themselves anyway) and not due to the needs of the production process itself (cf. 2008 SNA, 7.51);
- c) purchases of farm buildings and movable property (i.e. capital goods whose normal period of use is over one year); these acquisitions are considered to be GFCF (cf. 2.162);
- d) financial leasing payments made for the use of fixed assets for agriculture do not constitute purchases of services but transactions to be entered partly under interest (in the entrepreneurial income account) and partly as reimbursement of the capital (in the financial account) (cf. 2.122);
- e) expenditure on restoration (for maintenance, cf. 2.105 and 2.106) of fixed capital goods (restoration of roofs, gutters, electrical and heating installations in farm buildings) and expenditure on the improvement and repair of capital goods, which are intended to extend their normal service life or increase their productivity; this expenditure is regarded as GFCF since it goes well beyond what is necessary to maintain fixed assets in working order (cf. 2.127 to 2.129);
- f) purchases of services connected with the acquisition of ownership of land, buildings and other existing fixed capital goods, such as fees for intermediaries, solicitors, surveyors, engineers, etc. as well as fees for entries in the land register (cf. ESA 2010, 3.133). This is regarded as forming part of GFCF (cf. 2.132 and 2.133);
- g) goods and services produced and consumed within the same unit in the same reference period (except for certain products, cf. 2.056, 2.103, 2.107). These goods and services are not recorded as output either;
- h) rent paid for the use of land listed under 'rent' (cf. 3.080);
- i) expenditure on the use of dwellings; this is final consumption (accounts for households) and is not shown in the EAA;
- j) wear of capital goods, which comes under consumption of fixed capital (cf. 3.099);
- k) net insurance premiums (cf. 2.108(g);
- I) insurance premiums for personal injury and contributions to sickness and working accident insurance schemes; these are divided between distributive transactions and final consumption (accounts for households);
- m) water rates paid purely as a tax and unrelated to the quantities of water consumed;
- n) the purchase of services from public bodies under certain circumstances (cf. 3.048(e).

#### **BOX 40 EXPENDITURE ON R&D**

In addition to the points listed in the Regulation, expenditure on R&D which must be treated as fixed capital formation (ESA 2010, 3.89 (f) (4)).

## 2.3.3 Valuation of intermediate consumption

2.110. Products used for intermediate consumption should be valued at the purchaser prices for similar goods and services applicable at the time of their insertion in the production process.

2.111. The purchaser price is the price the purchaser actually pays for the products, at the time of purchase. It includes taxes less subsidies on products (but excluding deductible taxes like VAT on the products). The purchaser price also includes any transport charges paid separately by the purchaser to take delivery at the required time and place; after deductions for any discounts for bulk or off-peak purchases from standard prices or charges; excluding interest or service charges added under credit arrangements; excluding any extra charges incurred as a result of failing to pay within the period stated at the time the purchases were made (ESA 2010, 3.06).

#### **BOX 41 SPECIAL VALUATIONS CONCERNING PRODUCTS**

As a result of transport costs, trade margins and taxes less subsidies on products, the producer and the user of a given product usually perceive its value differently. In order to keep as close as possible to the views of the transactors, the ESA 2010 system records all uses at purchaser's prices, which include transport costs, trade margins and taxes less subsidies on products, while output is recorded at basic prices, which exclude those elements (see ESA 2010, 1.97).

2.112. Unlike in other branches of the economy, subsidies relating to intermediate consumption are important in agriculture. Their purpose is to reduce the cost of intermediate consumption. When these subsidies are classed as subsidies on (non-agricultural) products, they reduce the value of intermediate consumption, which is recorded at the purchaser price (whether they are paid to intermediate consumption suppliers or agricultural producers).

#### BOX 42 EXAMPLE FOR SUBSIDIES RELATING TO INTERMEDIATE CONSUMPTION

Examples of these type of subsidies would be those when farmers pay lower prices for energy than the rest of the companies / consumers or get support for buying plant protection products, fertilizers, feedingstuffs, etc. It should be noted, that the form and importance of subsidies relating to intermediate consumption could differ substantially from country to country.

2.113. If goods or services are imported direct by production units, the purchaser price used should include all import duties, non-deductible VAT, and monetary compensatory amounts (receipts or payments).

2.114. Intermediate consumption is valued exclusive of deductible VAT. Deductible VAT is calculated for all purchases made by agricultural units, whether subject to VAT under the standard or the flat-rate system. The difference between the deductible VAT which agricultural units under the flat-rate system could have deducted, if they had been subject to the standard VAT scheme, and the flat-rate compensation represents VAT over-compensation or under-compensation. This is recorded under other subsidies on production or other taxes on production respectively (cf.2.041 and 2.042).

## 2.4 Gross capital formation (<sup>22</sup>)

2.115. Gross capital formation (*P.5*) comprises:

- GFCF (P.51g)
  - consumption of fixed capital (P.51c);
- net fixed capital formation (P.51n);
- changes in inventories (P. 52),
- acquisitions less disposals of valuables (P.53).

2.116. Since the EAA are accounts drawn up in order to depict flows generated by units within their production function, only GFCF and changes in *inventories* are dealt with below.

2.117. Gross capital formation (*P.5*) is measured gross of consumption of fixed capital (*CFC* (*P.51c*). Net capital formation (*P.5n*) is obtained by deducting consumption of fixed capital (*CFC* (*P.51c*) from gross capital formation (*P.5*). Consumption of fixed capital is the value of the depreciation of fixed capital goods as a result of normal wear and tear in the course of the production process (cf. 3.099).

(<sup>22</sup>) cf. ESA 2010 3.122. 3.157.

#### **BOX 43 CALCULATION OF NET FIXED CAPITAL FORMATION**

Gross fixed capital formation GFCF (P.51g) is measured gross of CFC (P.51c). Net fixed capital formation (P.51n) is obtained by deducting CFC (P.51c) from GFCF (P.51g).

## 2.4.1 Gross fixed capital formation

#### 2.4.1.1 Definitions

2.118. GFCF consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realised by the productive activity of producer or institutional units (ESA 2010 3.125 to 3.129). Fixed assets are produced assets used in production for more than one year (cf. ESA 2010, 3.124 and Annex 7.1).

#### 2.4.1.2 Considerations for the national economy as a whole

2.119. The GFCF of a national economy is understood to mean the proportion of the gross domestic product (GDP) produced during the reference year which is intended to be used for a period of more than one year as a means of production in the production process (as distinct from the final consumption of private or public households, exports and changes in *inventories*). Consequently, goods which, although produced sometime in the past and therefore included in the national product, are put to a different use in the reference period, are not included in the GFCF of a national economy. A change of use or ownership does not imply that such goods become part of the domestic product a second time and in no way changes the total mass of fixed capital of the national economy as a whole. The inclusion of such transactions is, however, important in analyses by homogenous branch, industry or sector.

2.120. If a change in ownership results in a different use (i.e. no longer as capital assets), there is a reduction in the capital assets of the national economy. The commonest instances of this are motor vehicles which households buy secondhand from producer units, shipping vessels which are sold secondhand to other countries, and also capital goods which have been broken up and put to some intermediate use. Since the new use in these cases forms part of the national product (final consumption, export or any other use depending on the type of goods produced from the scrap), the GFCF must be reduced as a result. This is why the ESA 2010 uses the concept of net acquisitions of existing produced goods for calculating GFCF: this heading allows capital disposals, i.e. reductions in fixed capital to be taken into account.

2.121. It is possible for net acquisitions of existing goods to be positive, in other words, to represent increases in the capital assets of the economy as a whole. This is the case, for example, when secondhand vehicles which have already been listed as final consumption in the national product are bought for use as fixed capital. Since sales of existing investment goods exceed purchases, net acquisitions are negative for the national economy as a whole. If, however, the GFCF is broken down by user branch, net acquisitions can be positive for some branches.

#### 2.4.1.3 Transfer of ownership criterion

2.122. The determination of the GFCF of sectors or branches of the economy is based on the criterion of ownership (acquisition, disposal) and not on that of the use of the goods. It should be noted that fixed assets acquired by financial leasing (but not those simply on hire) are treated as assets of the lessee if the lessee is a producer) and not of the lessor, who keeps a financial asset equivalent to a notional claim (cf. 2.109(d) and Chapter 15 of the ESA 2010 on the distinction between the different forms of hire of durable goods) (<sup>23</sup>).

<sup>(23)</sup> Leasing differs from simple hiring in that the risks and advantages of ownership in leasing are transferred de facto, but not de jure, from the lessor to the lessee (the user of the asset). The ESA takes account of the economic situation of leasing by considering, for its recording, that the lessor provides a credit to the lessee which allows the latter to purchase a durable good and to become its de facto owner. Leasing is thus regarded as a special form of investment financing.

2.123. Application of the ownership criterion depends on the statistical system on the basis of which the GFCF is calculated. If it is data from purchasers, there will in theory be no difficulties (apart from the practical difficulty of recording all the investors). Often, however, (and this is particularly true of agriculture), it is information from producers of capital goods on their output or sales that is used as the basis for calculations. Apart from those cases where it is not clear whether a product belongs under the capital goods heading or not, it is also difficult to determine the actual purchaser since the nature of the capital goods gives only an indication of who the user is. In agriculture, therefore, there is the risk that capital goods will also be recorded which have not been acquired by agricultural holdings but by commercial enterprises for the purpose of hiring without operating staff.

## 2.4.1.4 Acquisitions

2.124. Acquisitions of fixed assets comprise new or existing fixed assets which have been acquired (purchased, acquired in barter transactions, received as capital transfers in kind or acquired as a financial lease), fixed assets produced and retained for the producer's own use, major improvements to fixed assets and to non-produced *non-financial* assets, natural growth in agricultural assets (livestock and plantations) and costs associated with the transfer of ownership of non-produced assets (cf. ESA 2010, 3.125 (a).

2.125. This point was removed from the EAA Regulation following amending act Regulation (EC) No 2019/280. It is kept in this manual to make clear references between the points in Annex I of Regulation and the manual.

2.126. The purchase or production for own account of a set of durable goods needed for an initial installation constitutes fixed capital formation. The stock of bottles of a brewery or wine-producing enterprise (excluding non-returnable bottles) for example, constitutes a mass of goods to be recorded as assets, although the value of each bottle is negligible. The same applies to seats and tables, crockery and cutlery of restaurants and the tools of an enterprise. The initial installation of these goods constitutes fixed capital formation: nevertheless, no *consumption of* fixed capital is calculated in these cases because it is assumed that once this installation has been made, it will always keep the same value as a result of constant purchases of replacement items to make up for those which have been lost or become unusable. Current replacement purchases are recorded as intermediate consumption. This rule, which in theory is clear, is sometimes difficult to apply in practice as statistical data on production or sales do not give a clear idea of whether the goods in question have been bought for an initial installation or to replace existing items.

2.127. Goods and services incorporated into existing fixed capital goods for the purpose of improving them, rebuilding or reconstructing them, prolonging their useful life or increasing their productivity, are recorded with the capital goods into which they are incorporated. This work is considered to be acquisition of new fixed assets. In principle, this heading includes all goods and services incorporated into fixed capital goods which go well beyond the scope of current maintenance and repair. Current maintenance is taken to mean all services which, in comparison with the normal lifetime of the capital goods, must be repeatedly provided at relatively short intervals in order to maintain the goods in serviceable condition. It covers, for example, the replacement of fast-wearing components of capital goods, external and internal painting, etc.

2.128. The size of the sums spent on this maintenance is in no way a criterion for determining whether a service creates an asset or represents current maintenance, since in the case of high-value capital items, even services for current maintenance may be very costly (cf. 2.109(e). Strictly speaking, the allocation of services performed on existing fixed capital goods either to the 'current maintenance' or 'GFCF' category should be determined by the interval which will elapse before the service has to be repeated, e.g. the replacement of parts which normally wear out within one year, such as the tyres of a truck, counts as current maintenance, whereas the replacement of an engine constitutes fixed capital formation, not because the value is higher but because an engine does not normally have to be replaced annually but only after several years. Recording a service of this kind under the assets heading (i.e. treatment as fixed capital formation and not as current maintenance) makes it possible to distribute the value uniformly over the entire period of use through the device of *consumption of* fixed capital.

2.129. The 2008 SNA specifies that improvements made to fixed assets should be determined either by the magnitude of the changes in the characteristics of the fixed assets–i.e. by major changes in their size, shape, performance, capacity or anticipated service life–or by the fact that improvements are not the kinds of changes that are observed to take place

routinely in other fixed assets of the same kind, as part of ordinary maintenance and repair programmes (cf. 2008 SNA,10.43 and 10.46).

#### **BOX 44 ORDINARY MAINTENANCE AND REPAIR PROGRAMMES**

Ordinary maintenance and repair programmes are therefore excluded of GFCF (ESA 2010, 3.130 a) 2) ) and should be recorded as intermediate consumption (ESA 2010, 3.89 f) 2) ).

#### 2.4.1.5 Disposal

2.130. Disposals of fixed assets comprise the sale, demolition, scrapping or destruction of fixed assets by their owner, or their surrender in barter or as capital transfers in kind (cf. ESA 2010, 3.125 (b) and 3.126). These disposals should normally lead to a change in ownership and have a direct economic purpose (therefore fixed assets which are demolished, scrapped or destroyed by their owner in order to be put to no further economic use are not included in these disposals) (cf. 2008 SNA, 10.38). However, some disposals may be kept within the same institutional unit, as in the case of animals slaughtered by a farmer and consumed by his family.

## 2.4.1.6 Valuation of gross fixed capital formation

2.131. GFCF is valued at purchaser prices (including the costs of transferring ownership, installation and other transfer charges) or, when produced on own account, it is valued at the basic prices of similar fixed assets (the basic price can be obtained from the sum of the costs incurred). Disposals should be recorded at the sales price, which should correspond to the purchaser price less the costs incurred in the transfer of ownership of assets, installation and transfer charges (cf. 2.130).

#### 2.4.1.7 Costs of transfer of ownership

2.132. The costs of transfer of ownership of assets constitute GFCF by the acquirer, even if some of the costs are paid by the seller. They comprise the expenditure incurred in order to take possession of the assets (installation and transport charges, etc.), fees and commissions of intermediaries (solicitors, experts, etc.) and taxes to be paid on intermediary services used in the transfer of ownership of assets (*cf. ESA 2010, 3.133*).

2.133. The GFCF of the acquirer comprises the value of the goods acquired (exclusive of transfer costs) plus the total transfer costs involved in the acquisition. Conversely, the GFCF of the seller only includes the value of the goods sold (exclusive of transfers costs) (<sup>24</sup>). In the case of non-produced assets (such as land, or patented assets such as production rights) which are not included in GFCF, these costs must be separated from the acquisition/disposal of these assets and recorded under a different heading as GFCF of the acquirer (*cf. ESA 2010, 3.127 (6*).

#### 2.4.1.8 GFCF and change in the value of assets

2.134. The balance sheet, which provides an itemised list of the values of the assets held and commitments entered into, provides information on the different components of the change in the value of assets. As defined in the balance sheets (cf. ESA 2010, 7.12 and 7.13) the change in the value of an asset between the end and beginning of an accounting period can be described as follows:

<sup>(&</sup>lt;sup>24</sup>) As a direct consequence of this method, the costs associated with trade in 'fixed assets' livestock between units should be recorded under the GFCF of the acquirer.

#### TABLE 9

## Change in the value of assets

#### Value of assets at the end of the accounting period

- Value of assets at the beginning of the accounting period =

GFCF - Consumption of fixed capital + Other volume changes + Nominal holding gains (net of losses)\*

\*Nominal holding gains (net of losses) = Nominal holding gains minus nominal holding losses.

#### **BOX 45 BALANCE SHEETS**

Balance sheets for the agricultural industry are not included in the set of EAA.

2.135. Nominal holding gains (net of losses) correspond to holding gains (net of losses) accumulated during the period considered and resulting from a change in the price of the asset whose economic and physical (quantitative and qualitative) characteristics remain unchanged over the period concerned. These changes are recorded in the revaluation account.

2.136. The other changes in the volume of assets are flows which make it possible to record the discovery, deterioration or depletion of natural assets as well as the consequences of exceptional events which may modify the benefit drawn from assets. As far as the assets of the agricultural industry are concerned, changes in volume may be put into three main categories:

- exceptional losses or catastrophic losses (earthquakes, wars, drought, epidemics, etc.),
- the margin between the anticipated depreciation of the assets (measured by the consumption of fixed capital) and the depreciation actually determined (due to unforeseen obsolescence, damage, deterioration and accidental events leading to higher depreciation than anticipated),

changes in classification or structure of fixed assets: e.g. changes in the economic purpose of agricultural land, dairy livestock intended for meat production (cf. 2.149, footnote 1) or agricultural buildings which have been altered for private or other economic use.

#### **BOX 46 TREATMENT OF SALES OF LIVESTOCK AS DISPOSALS OF FIXED ASSETS**

It should be noted that the treatment of sales of livestock for slaughter (i.e. by abattoirs or the farmer, including all sales to non-agricultural units for economic uses other than slaughter) as disposals of fixed assets constitutes a simplification of the accounting procedure for recording the disposal of fixed assets whose economic use has changed. 'Fixed asset' livestock are in fact converted into inventories by recording a flow entitled 'other change in volume' entered in the 'other changes in volume of assets' account. They are only sold in the form of inventories, the sale then constituting a withdrawal from inventories and not a disposal of assets.

2.137. GFCF and consumption of fixed capital (cf. 3.098 to 3.106) are therefore not the only elements to take into account when analysing the change in the value of assets.
### 2.4.1.9 Elements of GFCF

2.138. The ESA 2010 distinguishes between several elements which should be recorded as GFCF (cf. ESA 2010, 3.127):

- dwellings,
- other buildings and structures including major improvements to land,
- machinery and equipment, such as ships, cars and computers
- weapons systems,
- cultivated biological resources, e.g. trees and livestock
- costs of ownership transfer of non-produced assets like land, contracts, leases and licences,
- R & D, including the production of freely available R & D,
- mineral exploration and evaluation,
- computer software and databases,
- entertainment and literary or artistic originals,
- other intellectual property rights.

2.139. For the EAA, a distinction is made between the following types of elements of GFCF:

- plantations yielding repeat products,
- fixed asset livestock,
- fixed assets other than agricultural assets:
  - machines and other capital goods,
  - transport equipment,
  - farm buildings (non-residential),
  - other structures with the exception of land improvement (other buildings and structures, etc.),
  - other (computer software, etc.),
- major improvements to land,
- costs associated with the transfer of ownership of non-produced assets such as land and production rights,
- R & D, covering research and development from specialised units and research and development for own production.

### **BOX 47 GFCF IN EAA**

#### Mapping GFCF and consumption of fixed capital

GFCF recorded in the EAA can be mapped as following, regarding to ESA 2010 classification of GFCF and of assets (see chapter H 3.107 for the mapping between GFCF and consumption of fixed capital).

The EAA Regulation is not fully consistent with ESA 2010 as regards the structure of GFCF. The structure of GFCF according to EAA follows the characteristics of agriculture as it can be seen in the <u>Table 10</u> below.

## TABLE 10

# Bridge table GFCF (EAA) and GFCF and assets (ESA 2010)

GFCF EAA		( (	iFCF ESA2010/EAA chapter 1, Table 4)	Assets ESA2010		
Code	Description (short)	Code	Description (short)	Code	Description	
32000	GFCF in agricultural products			AN.115	Cultivated biological resources	
32100	GFCF in plantations	P.511a	GFCF in plantations	AN.1152	Tree, crop and plant resources yielding repeat products	
32200	GFCF in animals	P.511b	GFCF in livestock	AN.1151	Animal resources yielding repeat products	
33000	GFCF in non-agricultural products					
33100	GFCF in materials			AN.113	Machinery and equipment	
33110	GFCF in machines and other equipment	P.511c	GFCF in machines and equipment	AN.1132 AN.1139	ICT equipment Other machinery and equipment	
33120	GFCF in transport equipment	P.511d	GFCF in transport equipment	AN.1131	Transport equipment	
33200	GFCF in buildings (other than dwellings) and structures			AN.112	Other buildings and structures	
33210	GFCF in farm buildings (non-residential)	P.511e	GFCF in farm buildings	AN.1121	Buildings other than dwellings	
33220	GFCF in other works except land improvements (other buildings, structures, etc.)	P.511f	GFCF in other works except land improvements (other buildings, structures, etc.)	AN.1122	Other structures	
33900	Other GFCF (including major improvement of land, and R & D)					
33910	GFCF in intellectual property rights other than research and development (computer programmes, production rights, etc.)	P.511i	GFCF in intellectual property rights other than research and development (computer programmes, production rights, etc.)	AN.1173 AN.1179	Computer software and databases Other intellectual property products	
33921	GFCF in major land improvements	P.511g	Major improvements to land	AN.1123	Land improvements	
33922	Costs linked to the purchase of land and production rights	P.512	Costs of ownership transfer on non-produced assets	AN.116	Costs of ownership transfer on non-produced assets (*)	
33923	GFCF in research and development	P.511h	Research and development	AN.1171	Research and development	

(\*) Costs of ownership transfer on non-produced assets (AN.116) are treated as part of fixed capital formation, that is the acquisition of fixed assets. However, when stock levels are itemised, the value of these costs of ownership transfer is included with the non-produced assets to which they refer and so are not shown separately as part of AN.11. In the case of land transferring, the costs of ownership transfer on all land are to be included with land improvements (AN.1123). The item AN.116 is included in list for presentation purposes only (ESA2010, Chapter 23, Classification of assets).

2.140. GFCF in agricultural assets concerns two types of assets (plantations and animals) which are used repeatedly and continually for the production of products such as fruit, rubber, milk, etc.: fruit trees, vines, hop fields, soft fruit plantations and asparagus beds. Christmas tree plantations (which only provide a finished product once) are not fixed assets, just as cereals and vegetables are not. Animals which serve as fixed assets include, for example, breeding animals, dairy cattle, sheep reared for their wool and draught animals (animals for slaughter, including poultry, are not fixed assets).

### **BOX 48 GFCF IN AGRICULTURAL ASSETS**

#### Agricultural goods for own use

GFCF in agricultural goods produced for own use are both a component of the output and of the GFCF.

#### **Breeding animals (reproductivity)**

The criterion to classify animals as 'breeding animals' is their reproductivity. Thus, those animals should be recorded as GFCF.

#### Sheep reared for milk and reproduction

The example in point 2.140 of the Regulation refers to sheep reared for their wool among other animals serving as fixed assets: "[...] for example, breeding animals, dairy cattle, sheep reared for their wool and draught animals[...]". The text does not refer to sheep reared for their milk.

However, the Regulation does not contain the exhaustive list of animals serving as fixed assets but refers to some examples. In this sense, as laid down in point 2.149, sheep reared for their milk are also part of the GFCF in animals.

### 2.4.1.10 Plantations yielding repeat products

2.141. According to ESA 2010 (3.125) GFCF in plantations corresponds to the value of acquisitions less disposals of natural assets yielding repeat products (such as fruit trees) which have reached maturity, plus the natural growth of such natural assets until they reach maturity (i.e. generate a product), during the accounting period concerned.

2.142. This definition of GFCF corresponds to:

- expenditure on new plantations (new or renewed) during the accounting period, including amounts spent on maintaining young plantations during the accounting period (during the first three years),
- the increase in the intrinsic value of plantations up to their maturity,
- the costs associated with transfer of ownership in exchanges, between agricultural units, of plantations which have reached maturity.

2.143. The first two elements of GFCF in plantations represent own-account agricultural output of GFCF.

2.144. Disposals of plantations (recorded as negative GFCF) may take two forms: they may be sales of standing plantations to other (agricultural) units, in which case only the costs associated with the transfer of ownership are entered in the EAA. The other possibility is for the plantations to have been felled. In this case, however, according to the general definition of disposals, felled plantations must have a direct economic use; in other words, a counter-entry is required in the

form of a use in goods and services (such as a sale to an enterprise specialising in the sale of timber) (<sup>25</sup>). In this second case, disposals of plantations to be recorded as negative GFCF should represent a modest amount.

### **BOX 49 DISPOSALS OF PLANTATIONS**

There can be transfers of standing plantations other than sales (such as surrender in barter or capital transfers in kind (e.g. presents).

The point above refers to plantations felled before the end of their normal life-cycles. Otherwise, it would not be treated as disposal.

2.145. Consequently, in the majority of cases (i.e. except in the second case set out in 2.144), the value of the grubbings must not be deducted from the value of the investments in plantations. Investments intended for renewing existing plantations should be treated as investments and not as routine maintenance costs.

2.146. The treatment of grubbings of plantations should be analysed in relation to the calculation of consumption of fixed capital. In accordance with the ESA 2010, there is consumption of fixed capital in the case of plantations corresponding to the depreciation of the plantations when they have reached maturity. Plantation grubbings (<sup>26</sup>) should therefore be interpreted as follows:

- grubbings carried out at the end of the normal growing life of plantations correspond to plantations withdrawn from assets. These grubbings are taken into account in the consumption of fixed capital throughout the productive life of the plantations,
- 'exceptional' grubbings are grubbings carried out before the end of the normal growing life of plantations for various (economic, strategic, etc.) reasons. They should be interpreted as the difference between the real (effective) depreciation and normal depreciation measured by the consumption of fixed capital. This depreciation surplus should be recorded in the 'other changes in volume of assets' account (accumulation accounts) which is not included in EAA.

2.147. The change in the value of plantations over the accounting period therefore comprises the following four components (cf. 2.134):

- GFCF, which corresponds to the difference in value between acquisitions and disposals during the reference period, as defined in 2.141 to 2.145,
- consumption of fixed capital, which measures the depreciation of plantations, as defined in 2.146,
- other changes in 'volume' which take account of the effects of unforeseen events on plantations (such as exceptional grubbings) and which are recorded in the 'other changes in volume of assets' account (cf. the definition in 2.136 and 2.146),
- holding gains (net of losses), which measure the changes in value due to changes in price during the accounting period and which are recorded in the revaluation account of the ESA 2010 accumulation accounts (cf. the definition in 2.135).

2.148. Work in cultivated crop assets, i.e. plantations, is recorded either as sales, by enterprises specialising in such kind of agricultural contract work (with soil preparation, supply of machines, plant, labour, etc.), or as output of own-account produced fixed capital goods (cf. 1.75).

### **BOX 50 EVALUATION AND RECORDING OF PLANTATIONS**

### **Output of plantations**

Output of plantations correspond to the GFCF (not including the cost of transfer of ownership (cf. <u>2.142</u>. and <u>2.143</u>.). Depending on whether the work on plantations is conducted by enterprises specialising in

<sup>(&</sup>lt;sup>25</sup>) In this case, the activity of felling the plantation and selling the timber come under forestry activity.

<sup>(26)</sup> It should be noted that the cost of the grubbing service which may be invoiced by a grubbing company constitutes intermediate consumption of a service.

such kind of agricultural contract work (with soil preparation, supply of machines, plant, labour, etc.) or by the agricultural holding itself, it is recorded either as sales, or as output of own-account produced fixed capital goods.

#### **Recording of own-account plantations**

In the case of own-account plantations output, the following should be recorded:

- a) for calculating the value of output (<u>table 2</u> of the elaboration tables): at the intersection of the "plantations" row and "own-account produced fixed capital goods" column, either the value of similar plantations valued using the basic price and pro-rata production costs incurred over the period, or the value of the materials consumed (including nursery plants) and services rendered over the period;
- b) in the calculation of intermediate consumption (<u>table 3</u> of the elaboration tables), the values of the different intermediate consumption goods used (including nursery plants);
- c) for GFCF, in the "plantations" heading, the value obtained by adding up the value of "own-account produced fixed capital goods" column of the elaboration table 2 in plantations (i.e. the entry mentioned in (a) above) and the plantation output of units specialising in such kind of contract work.

### 2.4.1.11 Fixed asset livestock

2.149. GFCF for livestock corresponds to the following elements:

- the annual growth of livestock (until they reach maturity);
- livestock acquisitions (imports) less disposals (slaughterings (27) and exports);
- the costs associated with the transfer of ownership incurred in trade between agricultural units (28).

### **BOX 51 CLARIFICATION: LIVESTOCK YIELDING REPEAT PRODUCTS**

GFCF for livestock concerns animals, used repeatedly and continuously in production processes. They are reared for the output they regularly provide and include, for example breeding livestock, dairy livestock, draught animals, sheep and other animals reared for their wool (cf. 2.202). According to ESA 2010, animal resources yielding repeat products (AN.1151) are the animals whose natural growth and regeneration are under the direct control, responsibility and management of institutional units. They include breeding stocks (including fish and poultry), dairy cattle, draught animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment (ESA 2010, Annex 7.1). Further information on animals used for transportation, racing or entertainment can be found under the points: <u>1.78</u>, <u>2.203</u>, <u>2.210</u> and <u>2.211</u>.

In the EAA, fish and poultry are not considered as fixed assets. Fish is out of scope of EAA, while according to the Regulation, all poultry (including breeding poultry) are classified as inventories (cf. 2.171).

Commission Implementing Regulation (EU) 2023/2745 on animal production statistics pursuant to Regulation (EU) 2022/2379 of the European Parliament and of the Council on Statistics on Agricultural

<sup>(27)</sup> The treatment of sales of livestock for slaughter (i.e. by abattoirs or the farmer, including all sales to non-agricultural units for economic uses other than slaughter) as disposals of fixed assets constitutes a simplification of the accounting procedure for recording the disposal of fixed assets whose economic use has changed. 'Fixed asset' livestock are in fact converted into *inventories* by recording a flow entitled 'other change in volume' (cf. 2.136) entered in the 'other changes in volume of assets' account. They are only sold in the form of *inventories*, the sale then constituting a withdrawal from *inventories* and not a disposal of assets.

<sup>(&</sup>lt;sup>28</sup>) In as much as the sale and purchase occurred during the same accounting period. Otherwise, a disposal (for the period in which the sale occurred) and an acquisition (for the period in which the purchase occurred) are recorded.

Input and Output Regulation (SAIO) provides a table on the categories of livestock population and gives descriptions of livestock statistics (Annex I and Annex V). Based on these information it can be identified the animals classified as fixed assets in case of cattle, pigs, sheep and goats. All those details may not always be needed to compile the EAA and in some types of animals, the SAIO data requirements may not be necessarily in line with EAA GFCF. Other species such as bees may be considered if they are characteristic of the country's agricultural industry.

According to these information the categories of animals classified as fixed assets are indicated by X in the Table 11:

## TABLE 11 Livestock population

			Livestock categories			
Bovi	ne ar	nimals	5			
	Bovi	ne ar	nimals, less than 1 year old			
		For	slaughter			
	Х	Not	for slaughter			
			Bovine male animals, less than 1 year old not for slaughter			
			Bovine female animals, less than 1 year old not for slaughter			
	Bovi	ne ar	nimals 1 to less than 2 years old			
		Male	e bovines 1 to less than 2 years old			
		Heif	ers 1 to less than 2 years old			
			Heifers 1 to less than 2 years old for slaughter			
		Х	Heifers 1 to less than 2 years old not for slaughter			
	Bovi	ne ar	nimals 2 years old and over			
		Male	e bovines, 2 years old and over			
		Heif	ers, 2 years old and over			
			Heifers, 2 years old and over, for slaughter			
	X Heifers, 2 years old and over, not for slaughter					
	Х	Cow	/S			
		Dairy cows				
			Non-dairy cows			
	of w	hich	buffaloes			
	Х	Buffalo cows				
	Other buffaloes					
Pigs						
	Pigs of less than 50 kg live weight					
	Piglets, of less than 20 kg live weight					
		Oth	er pigs of 20 kg to less than 50 kg live weight			
	Pigs	for sl	aughter, including cull boars and cull sows, of 50 kg and more live weight			
		Pigs	, from 50 kg to less than 80 kg live weight			

		Livesterk seterevies					
		Livestock categories					
	Р	igs, from 80 kg to less than 110 kg live weight					
	Р	igs, 110 kg or over live weight					
Х	Breedi	ng pigs, of 50 kg and more live weight					
	В	reeding boars					
	С	overed sows					
		of which covered gilts					
	S	Sows, not covered					
of which gilts not yet covered							
She	eep						
Х	X Ewes and ewe-lambs						
	Ν	Milk ewes and ewe-lambs					
	Ν	lon milk ewes and ewe-lambs					
Other sheep							
Goa	ats						
Х	X Breeding female goats						
	Other goats						

2.150. In accordance with the ESA 2010, GFCF for livestock is a measure of the difference between livestock acquisitions (natural growth and imports) over the year, including those resulting from own-account production, and livestock disposals (for slaughter (<sup>29</sup>), export or any other final use), to which is added the cost of transfer of ownership (<sup>30</sup>). GFCF for livestock occurs throughout the animal's life. To begin with, the GFCF mainly consists of the natural growth of the animal. When it reaches the age of maturity, the GFCF is mainly measured by way of disposals (sales for slaughter or export). Imports, exports and costs associated with the transfer of ownership are components of GFCF for livestock which are likely to occur throughout the animal's useful life. The natural growth of livestock (and not the GFCF as a whole) constitutes own-account agricultural production of fixed assets in livestock.

2.151. Measuring the GFCF for livestock only constitutes one element of the change in the value of assets *(cf. 2.134)*. In fact, GFCF for livestock can only be measured via the change in the number of livestock valued at the average price for the calendar year for each livestock category (quantitative method), if the following conditions are met:

- no nominal holding gains or losses (i.e. a regular trend in prices and livestock population numbers),
- no other changes in volume (i.e. no losses due to natural disasters and no changes in classification, etc.),

Another method of calculation (direct method) consists of measuring the flows of entries and withdrawals for each livestock category, at the corresponding prices: apart from acquisitions and disposals, this method has to take into account entries (in particular births) and withdrawals on the holdings.

### **BOX 52 NO CFC CALCULATED FOR PRODUCTIVE LIVESTOCK**

Consumption of fixed capital (CFC) should not be calculated for productive livestock.

- (<sup>29</sup>) Including slaughterings for own final consumption or payment in kind.
- (30) Trade in breeding livestock between farmers is not recorded in the accounts. This is also the case if the trading is carried out via agents (if the purchase and sale occurred in the same period). However, the cost of transfer of ownership (agents' services, trade margins, transport costs, etc) must be included in the value of the GFCF for livestock.

This is the third condition, besides two listed in 2.151. These three elements are referred by the point 2.152.

2.152. As a general rule, therefore, GFCF for livestock cannot be measured via the difference between the livestock values at the end and beginning of the accounting period. The rule for calculating the GFCF for livestock depends directly on the method adopted for recording and measuring the three elements of the change in the value of livestock (other than GFCF), and in particular the consumption of fixed capital element. This is a deviation from the ESA 2010.

2.153. In the SNA, theoretically, consumption of fixed capital should be calculated for livestock (<sup>31</sup>). In actual fact, consumption of fixed capital for livestock corresponds to a measurement of the anticipated decline in productivity of livestock when used for production purposes, a reduction which in turn is reflected in the updated value of future income from this livestock. However, in view of the practical difficulties in evaluating consumption of fixed capital (the definition of the calculation parameters are very complex, cf. 3.105 and 3.106), no consumption of fixed capital should be calculated for productive livestock (*ESA 2010, 3.140*).

2.154. GFCF for livestock may be measured by various methods. By using the perpetual inventory method, each of the GFCF elements defined in 2.149 (natural growth of livestock, imports, sales for slaughter and exports, costs associated with the transfer of ownership) can be valued very strictly. Nevertheless, it requires numerous data (such as the prices of productive livestock throughout their useful life). The same is true of methods based on the livestock production cycle. A simpler method therefore needs to be adopted, even if it is less strict.

2.155. The recommended method employs an indirect calculation approach (<sup>32</sup>). It is based on calculating the change in the number of livestock and on the following two assumptions:

- livestock prices are regular and normally predictable, so that the average annual price can be used for valuing quantities whilst excluding from them holding gains/losses,
- exceptional losses can be estimated (in quantities and prices).

2.156. The measurement of GFCF is made up of the sum of the following elements:

### TABLE 12

## The measurement of GFCF

GFCF =	Change in the number of livestock between the end and beginning of the accounting period valued at the average annual price P
	+ Culling discount
	+ Other <i>losses of</i> productive livestock
	+ Costs associated with the transfer of ownership

2.157. The term 'culling discount' refers to the difference, at the time of their withdrawal from productive livestock, between the value of the livestock valued as productive animals (at what could be called a 'capital' price) and the value of the same livestock valued as animals intended for slaughter (i.e. at the slaughterhouse selling price).

2.158. The term 'other losses of productive livestock' comprises two types of losses:

- exceptional losses in productive livestock which have become mature,
- the value of livestock kept in production until the end of their life (natural death).
- (<sup>31</sup>) The 2008 SNA (10.94), unlike the ESA 2010 (3.140), considers that consumption of fixed capital should be calculated for livestock.

(<sup>32</sup>) Any other method leading to equivalent results may be used.

### **BOX 53 CLARIFICATION: NATURAL DEATH OF ANIMALS**

It happens very rarely that animals classified as fixed assets are kept in production until their natural death.

### **BOX 54 NUMERICAL EXAMPLE: GFCF IN ANIMALS**

The <u>Table 13</u> below shows a numerical example covering points 2.151 to 2.158 above, in order to clarify how to proceed with the calculation of GFCF in animals.

### TABLE 13

## **Calculation GFCF in animals**

	Gross indigenous production	Price of fixed asset animal	Price of cull animal	Difference	Culling discount	Other losses	Change in livestock population (*)	Price of fixed asset animal	Change in livestock population (*)	Cost of the transfer of ownership	GFCF
	Quantity		Price		Value	value	Quantity	Price	Value	Value	Value
Cows	100.0	1500.0	1200.0	300.0	30.0	0.1	0.2	1500.0	0.23		30.33
Breeding sows	20.0	2500.0	1000.0	1500.0	30.0		-0.5	2500.0	-1.25	0.2	28.95
Fixed asset livestock	120.0				60.0	0.1			-1.03	0.2	59.28

Quantities in 1 000 tons live weight. Prices in euro/1 000 kg. Values in million euro \*) Final stocks - initial stocks

2.159. The value of "other losses of productive livestock" to be recorded in the calculation of GFCF corresponds to the difference between the value of livestock at the price prevailing at the start of the period and the disposal value of the animals. These disposals are valued at the selling price of animals which are slaughtered (i.e. for sale or own final consumption) or can have a zero value if they have no economic use (e.g. if they are disposed of, etc.).

2.160. The terms 'other losses of productive livestock' and 'culling discount' correspond to flows which are recorded in the 'other changes in the volume of assets' account of the balance sheet. They provide a link between the different components of the change in the value of assets and the GFCF, and ensure conformity with the ESA 2010. Ignoring them *["other losses of productive livestock" and "culling discount" in the compilation of GFCF]* would result in the real level of GFCF for livestock being underestimated.

2.161. The estimation of own-account production of fixed capital in livestock, which corresponds to the natural growth of animals, is derived from the definition of the GFCF for livestock set out in 2.149 applied to categories of animals which are not yet fully mature:

Own-account production = GFCF + disposals (slaughterings and exports)-acquisitions (imports) (<sup>33</sup>)-(cost of transfer of ownership).

<sup>(&</sup>lt;sup>33</sup>) This deduction corresponds to the theoretical case where the imports of productive animals are recorded as GFCF. In practice all animals imported by the agricultural industry are treated as changes in *inventories* (cf. 2.205).

### 2.4.1.12 Fixed assets other than agricultural assets

2.162. Fixed assets other than agricultural assets (plantations and livestock) comprise the following elements (cf. 2.139.):

- machines and other capital goods,
- transport equipment,
- farm buildings (non-residential),
- other (other buildings and structure, computer software, etc.).

### BOX 55 MACHINES AND OTHER CAPITAL GOODS; MAJOR IMPROVEMENT OF LAND

The first listed item of 2.162, 'machines and other capital goods' refers to '33110 machines and other equipment' (see 2.139, <u>Box 47 GFCF in EAA</u>).

In addition to the products listed in the Regulation, major improvement of land is also included by fixed assets other than agricultural assets.

2.163. GFCF corresponds to the acquisition of these assets (new assets produced or imported during the accounting period, or existing assets) less transfers to other units (of the agricultural industry or other industries). It should be recalled that if this transaction concerns two units of the agricultural industry during the same accounting period, the two flows cancel each other out and only the costs associated with the transfer of ownership are recorded under the corresponding fixed asset heading.

2.164. In the case of construction or *fixed* capital goods (intended for sale) whose production is spread over several periods, the value of the work performed in the period of production is to be recorded *as* changes *in inventories* of the producer in the form of work-in-progress. These goods (whether movable or immovable) are not recorded in GFCF until the ownership has been transferred. By contrast, when this production is own-account, this work is recorded as GFCF during the entire production period (cf. 2.025).

2.165. Assets whose economic use changes without any change in ownership taking place (e.g. when a farm building is used for purposes other than an agricultural production activity) are not recorded as disposals of assets. These changes are recorded in the 'other changes in the volume of assets' account.

### 2.4.1.13 Major improvements to land (34)

2.166. Major improvements in non-produced *natural* assets correspond mainly to land improvement (better quality of land and higher yield through irrigation, drainage and flood prevention measures, etc.) and should be treated like any other GFCF (ESA 2010, 3.128).

2.167. These investments correspond to expenditure on the improvement of land and its preparation for other productive uses, with the exception of expenditure on routine maintenance (cf. 2.127 to 2.129). This expenditure has to be made by holders or the result of this expenditure has to become their property. This concerns in particular expenditure on infrastructure works such as clearance, levelling, drainage, irrigation and consolidation (cf. ESA 2010, 3.128 and 2008 SNA, 10.79 to 10.81).

### 2.4.1.14 Costs associated with the transfer of ownership of non-produced assets

2.168. Costs associated with the transfer of ownership of non-produced assets refer to acquisitions of land and non-produced *non-financial* assets (such as patented assets, production rights, etc.) by agricultural units. These acquisitions are

<sup>(&</sup>lt;sup>34</sup>) In Regulation (EC) No 138/2004, 'Major improvements to land', 'Costs associated with the transfer of ownership of non-produced assets' and 'Research and development' are part of 'Fixed assets other than agricultural assets'.

not recorded as GFCF (but under another heading of the capital account, because they are non-produced assets) and only the costs associated with the transfer of ownership are recorded as GFCF (for the acquirer, but not for the seller).

### 2.4.1.15 Research and development

2.168.1 Research and development consists of the value of expenditure on creative work undertaken on a systematic basis in order to increase the stock of knowledge, and use of this stock of knowledge to devise new applications. Unless the value can be reasonably estimated it is, by convention, valued as the sum of the costs, including those of unsuccessful research and development (cf. ESA 2010 Annex 7.1).

### 2.4.1.16 Goods and services excluded from GFCF

2.169. The following goods and services are not included in GFCF:

- a) small tools, working clothes, spare parts and equipment, even if these goods have a normal useful life of over one year; because they are renewed regularly, and to conform with business accounting practice, these purchases of goods are considered to be intermediate consumption (cf. 2.105 and 2.106);
- b) ongoing maintenance and repairs (cf. 2.127 to 2.129) are classed as intermediate consumption);
- c) services of advertising, market research, etc. Purchases of these services are included in intermediate consumption (cf. 2.108(d);
- d) durable goods acquired by households to satisfy their domestic needs; as these goods are not used for production purposes, they are treated as final consumption;
- e) animals recorded as inventories: fattening animals reared for slaughter, including poultry;
- f) holding gains and losses on fixed assets (to be recorded in the revaluation account, cf. 2.135);
- g) losses of fixed assets due to catastrophic events (cattle diseases, etc.) or force majeure (floods, gales, etc.) (cf. 2.045 and 2.136)

2.170. The value of fixed capital goods used simultaneously for professional and private purposes (motor vehicles, for example) is recorded in accordance with their two possible types of use; partly as GFCF and partly, as final consumption.

## 2.4.2 Changes in inventories

### 2.4.2.1 Definition of inventories and changes in inventories

2.171. *Inventories* comprise all goods which do not form part of fixed capital and are held by producer units at a given moment. A distinction is made between two types of *inventories*: input *inventories* and output *inventories*:

- Input *inventories* are made up of raw materials and supplies which will be used at a later date as intermediate inputs in production processes. Normally, the consumption of these products is calculated by offsetting purchases (or other forms of acquisitions) with a change in *inventories* in the course of the reference period (cf. 2.021).
- Output *inventories* represent the *inventories* of finished products and work-in-progress of the producer. They are taken into account in the calculation of output. Output *inventories* comprise:
  - finished products from the industry: these are goods which producers have no intention of further processing before sending them for other economic purposes. In the case of agriculture, they include crop products, olive oil, grape must, livestock products and non-agricultural goods produced in inseparable secondary activities,
  - work-in-progress: this is output which is not quite finished. For the EAA, it includes wine, livestock for slaughter, all chickens and other poultry (including breeding poultry) and other animals except those regarded as fixed capital. It should be noted that growing crops (cf. 2.012) are not regarded as *inventories of* work-in-progress in the annual economic accounts.

### BOX 56 RECORDING OF INPUT AND OUTPUT INVENTORIES IN THE ELABORATION TABLES

The consumption of raw materials and supplies (intermediate consumptions) are consequently indicated separately in elaboration table 3 "Intermediate Consumption". Output inventories are taken into account in the calculation of output, as they are entered in the corresponding columns of elaboration tables 1 and 2. Elaboration tables are described in Chapter 9.

### **Definition of inventories**

Inventories (AN.12) are produced assets of goods or services which came into existence in the current period or in an earlier period, and that are held for sale, use in production or other use at a later date. They consist of materials and supplies, work-in-progress, finished goods (cf. ESA 2010 Annex 7.1 and 2008 SNA, 10.12).

According to ESA 2010, Inventories (AN.12) cover the following non-financial assets:

- AN.12 Inventories
- AN.121 Materials and supplies
- AN.122 Work-in-progress
- AN.1221 Work-in-progress on cultivated biological assets
- AN.1222 Other work-in-progress
- AN.123 Finished goods
- AN.124 Military inventories
- AN.125 Goods for resale

2.172. Not recording growing crops as work-in-progress is justified for European agriculture by the fact that a very large majority of crops have a production cycle which is shorter than an accounting period. It is also felt that recording them at the time of harvesting allows sufficient consistency with production costs to be maintained in the analysis of income from the activity (cf. 2.012). When the harvest, soil preparation and sowing operations are carried out in different accounting periods, the accounts of the period in which the costs occurred show an accounting loss and those of the harvest period an accounting profit. This accounting method may, however, be accepted because if the conditions remain the same from one year to another an approximate balance is established in that expenditure is offset in the same period by the profit from the sale of the previous harvest. Only in the event of a substantial change in production or in cases of very poor harvests does this compensation not occur. Under such circumstances, the recording of output as work-in-progress might be indicated (see also 2.013).

2.173. It should be noted that services are not entered as *inventories* except for those included in the purchase value of goods placed into *inventories*.

2.174. According to the ESA 2010, changes in *inventories* are measured by deducting from the value of *the* entries *into inventories* the value of withdrawals and *the value of* any recurrent losses of goods *held* in *inventories* (*cf. ESA 2010, 3.146*).

### 2.4.2.2 Time of recording and valuation of changes in *inventories*

2.175. *Goods entering inventories* should be valued at the *time* of entry and withdrawals should be valued at the prices prevailing *at the time of* withdrawal from *the inventories*. The time of recording and valuation of *changes in inventories* should be consistent with that of other transactions in products (output and intermediate consumption) (*cf. ESA 2010, 3.149 and 3.150*).

2.176. The basic price is the price to be used for valuing changes in *output inventories* (entries, withdrawals or recurrent losses of finished products or work-in-progress). As regards entries of work-in-progress, the price used should be estimated by applying the fraction of the total production cost incurred by the end of the period to the basic price of a similar finished product. Alternatively, the value of the entries of work-in-progress can be estimated by the value of the production cost with a mark-up for expected operating surplus or (estimated) mixed income (cf. ESA 2010, 3.47 and 3.48).

2.177. The method recommended in the ESA 2010 for recording *goods entering inventories* and withdrawals is the perpetual inventory method. However, this solution is not generally applicable in view of the difficulty in obtaining information on entries and withdrawals. In an attempt to get into line with the perpetual inventory method, the ESA 2010 recommends a 'quantitative' method which consists in measuring changes in *inventories* as the difference in volume between the *inventories* at the opening and closing of the accounting period, valued at the average prices in force during the period concerned. However, this method is only applicable if prices remain stable over the period under consideration or if the prices and quantities stocked increase or decline at a constant rate during the accounting period.

2.178. This 'quantitative method' cannot be applied to crop production because of the fluctuation in prices and quantities resulting from the production process and the structure of supply and demand. This problem which is specific to agriculture is recognised by the ESA 2010 (cf. 3.153 (c).

2.179. It should also be considered that a change in *inventories*, as defined in 2.174, is only one of the components of the change in the value of *inventories* between the start and end of the accounting period. There is in fact a basic accounting equation which connects the opening and closing figures for *inventories*:

### TABLE 14

## Valuation of changes in *inventories*

Value of closing stocks at the prices applicable at the end of the accounting period

- Value of opening stocks at the prices applicable at the start of the accounting period =

Changes in *inventories* (entries – withdrawals–recurrent losses)

+ nominal holding gains (net of losses)

### + other changes in volume

2.180. These nominal holding gains and losses and other changes in volume (<sup>35</sup>) should not be included in the measurement of output, but in the account of other changes in assets (respectively, in the revaluation account and in the other changes in the volume of assets account).

### **BOX 57 HOLDING GAINS AND LOSSES ON INVENTORIES**

Holding gains and losses on inventories are the changes in the value of assets (inventories) due to price changes during the period they are held in inventory.

2.181. The main difficulty in valuing the change in *inventories* in the EAA concerns crop products. These products are in fact seasonal products whose entries into *inventories* only occur after the harvest and whose withdrawals are spread over several months after the harvest and often continues into the next accounting year. Their price may also be subject to substantial fluctuations from one period to another, or even within the same period.

### 2.4.2.3 Change in inventories of livestock and animal products

2.182. When valuing changes in livestock *population*, it is not important whether the animals were reared from birth within the country or were imported when young and then reared and fattened in the country. When the imported animals are taken over by the holding which continues rearing them on the national territory, the animals are 'nationalised' and consequently assimilated to domestic production.

(<sup>35</sup>) Other changes in volume are generally understood to be *inventories* of goods destroyed in the wake of exceptional events (such as natural disasters). Current losses are included in withdrawals from *inventories*.

2.183. To evaluate changes in the herd at the end of the reference period, a distinction has to be drawn between the *'inventories'* herd and the 'fixed assets' herd (cf. 2.140 and 2.202). The value at basic prices for the first category of animal should be considered to be the sum of the production costs throughout the life of the average animal in the different livestock classes up to and including the reference year, plus a mark-up for the estimated operating surplus or an estimate of mixed income (cf. 2.176). If an animal was originally imported before its period in the national territory, the purchaser price at the time of import can be regarded as representing the sum of the production costs up to that date.

### BOX 58 HERD CLASSIFIED AS INVENTORIES OR AS 'FIXED ASSETS'

The herd classified as inventories covers the livestock that produce an output once only (livestock *for* slaughter including *breeding* poultry) and the 'fixed assets' herd covers livestock that are used repeatedly or continuously for more than one year to produce output.

2.184. Because of the generally regular changes in the prices of animals, it is possible to evaluate the change in livestock *inventories* by a simple approximation method which excludes nominal holding gains (net of losses). For each category of animal, the change in population between the end and the start of the accounting year is multiplied by the average price observed over the reference period.

### 2.4.2.4 Change in inventories of seasonal products

2.185. Seasonal products (cf. 2.178 and 2.181) are products for which the quantitative method does not constitute a good approximation of the perpetual inventory in view of the irregular change in prices and quantities. The application of the quantitative method could lead to the inclusion of nominal holding gains or losses in the measurement of the change in *inventories*. One solution could consist in measuring the change in *inventories* over shorter periods than the reference period (for example, each quarter), subperiods which would have more even price and quantity trends. Nevertheless, this type of method is often difficult to apply because of a lack of basic data.

2.186. Another method of evaluating *inventories* of seasonal products is that of examining the trend in the prices of stocked goods. The *value* of a good may change during storage for at least three reasons (2008 SNA, 6.143):

- the production process is sufficiently long that discounting factors should be applied to work put in place significantly long before delivery,
- its physical qualities may improve or deteriorate with time,
- there may be seasonal factors influencing its supply or demand, thus resulting in regular and predictable changes in its price over the year, even though its physical qualities may not otherwise change.

2.187. The difference between the price at which products are put into stock and the price at which they are withdrawn should reflect the additional output value produced during storage (2008 SNA, 6.143), since products withdrawn from storage several months after harvest are different, in economic terms, from those which have been stored. This type of increase/decrease in the value of products should not be counted as a nominal holding gain/loss.

2.188. On the basis of the different components of the change in the value of *inventories* and factors determining changes in the prices of products held in stock, and in view of the difficulty in fully excluding the recording of holding gains or losses from the valuation of seasonal output, two methods are recommended. They differ in their interpretation of the storage activity and the time for recording the change in the value of the goods resulting from their stay in *inventories*. The first method constitutes the reference method to be applied in valuing output and changes in *inventories* of seasonal agricultural production. The second method may be used for more specific cases (mainly products whose prices are difficult to predict).

2.189. The reference method consists in determining the change in *inventories* as the difference between the value of output for the year and the value of sales (and other uses) for the same year (<sup>36</sup>). It is founded on the assumption that there are no *inventories* left over at the end of the marketing year (the end of the first half of the following calendar year). It involves

(<sup>36</sup>) Use is made of the breakdown of output into sales (and other uses) and changes *in inventories*.

directly evaluating total output harvested during year n using the weighted average price for the marketing year (n/n + 1) and deducting from this the value of all sales (and other uses) made during calendar year n corresponding to the year of harvest (<sup>37</sup>) at the prices applicable at the time of sale (or other uses).

2.190. The reference method treats the storage activity as a factor for raising the prices of goods during storage. It thus makes a distinction between the storage activity and its effects on product prices. The increase in value resulting from the stay in storage is 'anticipated' since it is allocated to the output of year n (i.e. the year of harvest, even though the sales are spread over two calendar years), it being possible to anticipate price trends without too much uncertainty because they result from fairly regular and predictable changes (cf.2.186).

2.191. The application of this method makes it possible to minimise the inclusion of holding gains or losses in the measurement of output. It ensures consistency between the calculations of output in value and quantity and avoids the recording of output on the basis of work-in-progress (requiring data on the level of *inventories* at the start and end of the calendar year, with corresponding prices). It also facilitates the elaboration of accounts in constant prices.

2.192. A second method is recommended in the specific case of products whose prices are difficult to predict (such as fruit, vegetables, potatoes and olive oil) and whose storage on agricultural holdings reaches economically significant levels. This method is less strict than the reference method in excluding holding gains and losses from the measurement of output; it considers the storage activity to be an extension of the production process in time. The inclusion of the increase in prices of stored goods is delayed and allocated to the year in which the storage took place.

2.193. By this second method, seasonal output is calculated directly as the sum of sales, other uses and changes in *inventories*. Changes are estimated by valuing the *inventories* at the end and start of the accounting period on the basis of their current prices.

2.194. It should be noted that these two methods differ in the way they measure the changes in *inventories* but not in the valuation of sales (which are valued at the basic prices applicable on withdrawal from *inventories*).

### 2.4.2.5 Changes in inventories of wine (from grapes produced by the same holding)

2.195. Wine is a product which is generally stocked for several years for ageing and maturing. During this storage period, the quality changes. This storage activity at the holding can be regarded as an extension of the wine production process since the wine leaving storage is different from the wine which entered. Stored wine should therefore be treated as work-in-progress and the increase in value which is then determined should be regarded as an increase in output to be measured continuously over time.

2.196. The change in the value of wine may result from three factors: the change in its quality, changes in the structure of supply and demand (i.e. relative prices between young and aged wines), and a general increase in prices. Whilst the change in the value of wine due to the first two factors should be included in the measurement of output, any increase in the price of wine due to a general increase in wine prices should not be reflected in the value of output but treated as a holding gain (recorded in the revaluation account).

2.197. Recording the increase in the value of wine in the value of output should be done throughout the course of the ageing process. However, this would mean having a large amount of data available on the structure *inventories* of wine based on their production year, quality and production area, as well as on the development of their respective prices. As these data are not generally available in the Member States, two practical methods have been developed which allow the increase in the value of wine due to ageing to be calculated approximately for the EAA. Although not so strict from the conceptual point of view, these two methods nonetheless appear to be acceptable in the current situation regarding availability of data. The choice of each Member State will depend on the structure of its wine-growing industry and statistical system.

2.198. Anticipation of the increase in value from wine-ageing: the first method is to value stock entries of wines to be aged by the producer, using the selling prices of wines which have already been aged, as observed in the second half of the

<sup>(37)</sup> A similar result may be obtained by recording sales on a half-yearly basis and calculating the output of reference year n by adding together the sales of the second half of year n and those of the first half of year n + 1.

year. The expected increase in value is anticipated in the output of the year of harvest. This increase is only partial since these wines are not valued at their real selling prices but at the prices of other wines of the same type but older. The difference between their real selling price and that used for evaluating stock entries is not counted in the value of output, since it is interpreted as holding gain (NB: this difference includes the effects of inflation). Since it makes no distinction depending on the harvest year of the stocked or sold wine, it assumes that the quality wine market is even in terms of age of the wine.

2.199. Delay in taking into account wine ageing: the second method is to value stock entries at the price of 'unaged' wines at the time of harvesting and not to record an addition to the wine work-in-progress (i.e. the increase in price due to ageing, irrespective of the effect of the general change in the price of wine) until the aged wine is sold. Since sales are valued at the average price for the year, any increase in value between the harvest year and the year of sale is recorded in the output of the year of sale (and is therefore not distributed over time). This method requires more data on the structure of *inventories of* wine as it assumes that the distribution of *inventories* (and withdrawals *from inventories*) is known for each harvest year. Nevertheless, it can provide a more accurate idea of sales and *inventories* of different vintages.

2.200. Neither of these two practical methods allows the increase in the value of wine from ageing to be distributed over time: one records it in advance and the other after a delay. This disadvantage can be regarded as a relatively minor one in both cases if it is assumed that there is a certain stability over time in the production of 'aged' wine. The first method appears to be preferable when the average ageing period is short.

## 2.4.3 Recording of livestock as 'GFCF' or 'changes in inventories'

2.201. As mentioned in 2.140 and 2.151, changes in the number of livestock (for agricultural statistical purposes) are entered either as GFCF or as changes in *inventories* depending on the type of animal.

### 2.4.3.1 Definitions

2.202. GFCF of livestock concerns animals, i.e. fixed assets, used repeatedly and continuously in production processes. They are reared for the output they regularly provide and include, for example, breeding livestock, dairy livestock, draught animals, sheep and other animals reared for their wool. By contrast, animals *recorded* as *inventories* are animals produced during the current or a previous period which are kept in order to be sold or used for other production purposes at a later date. These include animals reared for their meat such as animals for slaughter and poultry.

### BOX 59 LIFE CYCLE CRITERIA FOR ANIMALS CONSIDERED AS FIXED ASSETS

Livestock classified as fixed assets covers animals that are used repeatedly or continuously for more than one year to produce output (cf. 2.118). This is the reason, that breeding poultry are not part of the fixed assets.

### 2.4.3.2 Recording of animal imports

### 1. Animals identifiable as fixed assets:

2.203. If, at the time of import, the animals were able to be clearly identified as a fixed asset, they would be recorded exclusively as acquisitions in the GFCF (cf. 2.149 and 2.150). Of course, only animals bought by the agricultural industry are to be recorded as GFCF of agriculture, and therefore not, for example, saddle horses for private use or animals acquired for other purposes.

### 2. Animals identifiable as *inventories*:

2.204. By contrast, if at the time of import the animals were able to be clearly identified as *inventories* (e.g. animals for slaughter) their import would be considered as an entry into *inventories* of work-in-progress and therefore, deducted from sales (negative sales) in the calculation of output (cf. 2.069).

### 3. Treatment to be adopted:

2.205. It is often difficult, on the basis of the sources of data available, to draw pertinent distinctions between these two different categories of animals. This is why the value of all imported animals (animals classed as fixed assets or *inventories*, but with the exception of those imported animals for immediate slaughter) should be deducted from sales in the output calculation. If at any time they are transferred to the herd of productive livestock (i.e. fixed assets), they will be recorded as own-account produced fixed capital goods during the reference period when the transfer takes place (as for animals which are produced and reared in the country and which are then transferred to herds of productive livestock) (cf. 2.069 and 2.070).

2.206. It should be noted that animals imported for immediate slaughter are entered as imports of the national abattoirs and are not recorded in the EAA since the latter are restricted to depicting the output of national agriculture.

### 2.4.3.3 Recording of livestock trade between agricultural units

2.207. Animals classed as fixed assets: trade in these animals is recorded in GFCF as acquisitions and disposals of fixed assets (services associated with the transfer of ownership are recorded in the purchaser price). When sales and purchases occur in the same accounting period, these flows offset each other and only services associated with the transfer of ownership are recorded as GFCF (cf. 2.068).

2.208. Animals classed as *inventories*: these sales and purchases are only recorded if they occur in two different accounting periods. Services associated with this trade, which are included in the purchaser price, should be deducted from the output total when trade occurs in the same accounting period (cf. 2.067).

2.209. Because of the special treatment of livestock trade between agricultural units and imports, there is no intermediate consumption for 'Livestock and animal products'.

### 2.4.3.4 Non-agricultural animals

2.210. The rearing of race-horses, saddle horses, dogs, cats, cage birds, zoo and circus animals and bulls for bullfights is included in the activities defining the agricultural industry, whether it is for breeding, meat production, recreation or sports events (cf. 1.78). The use of these animals for service activities is included in the agricultural industry, only when such activities are performed by agricultural units as inseparable secondary activities. The rearing of non-agricultural animals by units for which the agricultural activity represents solely a leisure activity is not considered as part of the EAA (cf. 1.24).

2.211. Such animals may be sold to:

- households: in which case any subsequent operations involving these animals are of no concern to the EAA,
- other branches: a guard dog, circus animal or racing horse, for example; these form part of the formation of fixed capital of the purchasing branch.

# **Distributive Transactions and Other Flows**

## 3.1 Definitions

3.01. Distributive transactions are transactions:

• which distribute value added generated by production among the workforce, capital and general government,

• which involve the redistribution of income and wealth (cf. ESA 2010, 4.01).

3.02. The ESA 2010 distinguishes between current transfers and capital transfers, the latter representing a redistribution of saving or wealth rather than of income (*cf. ESA 2010, 4.01*).

3.03. Given that the EAA are the accounts for an industry, only certain distributive transactions will be described in this chapter. The most important ones are those recorded in the primary income distribution accounts, particularly the generation of income account and entrepreneurial income account (cf. EAA sequence of accounts, 1.38 to 1.48). In the case of the generation of income account, these distributive transactions relate to other taxes on production, other subsidies on production and the compensation of employees. For the entrepreneurial income account, they correspond to certain types of property income (mainly land rents, interest and property income attributed to insurance policy holders). The account also records distributive transactions corresponding to aid for investment and other capital transfers in the capital account.

3.04. They do not include some distributive transactions relating to certain property income (mainly dividends and other income distributed by corporations), current taxes on income and wealth, etc. Recording these transactions is only statistically feasible and meaningful if groupings of institutional units, i.e. sectors and subsectors, are taken into account (cf. 1.06).

## 3.2 General Rules

### 3.2.1 Reference period

3.05. The reference period for the EAA is the calendar year.

### 3.2.2 Units

3.06. The values should be expressed in millions of units of the national currency.

## 3.2.3 Time of recording distributive transactions

3.07. As was explained in 2.008, the ESA 2010 records distributive transactions on an accrual basis, i.e. at the time an economic value, amount due or claim is created, transformed or cancelled or ceases to exist, and not at the moment when payment is actually made. This recording principle (based on rights and obligations) is applied to all flows, irrespective of whether they are monetary flows, or whether they occur between units or within a single unit. However, certain exceptions might be justified for practical reasons.

3.08. The times of recording the various types of distributive transaction are as follows:

a. Compensations of employees

3.09. Gross wages and salaries and actual social contributions (for account of employers) are recorded during the period in which the work was performed, although premiums and other exceptional payments are recorded at the time they become due (cf. ESA 2010, 4.12).

b. Taxes and subsidies on production

3.10. Taxes on production are recorded at the time when the activities, transactions or other events giving rise to a fiscal obligation take place (cf. ESA 2010, 4.26). Similarly, subsidies on production are recorded at the time when the transaction or other event (production, sale, import, etc.) which gives rise to the subsidy occurs (cf. ESA 2010, 4.39).

c. Property income

3.11. Interest is recorded during the accounting period in which it is due, irrespective of whether it is actually paid (cf. ESA 2010, 4.50 and following). This is done continuously for the amount of capital in question. Rents are also recorded for the period in which they are due (cf. ESA 2010, 4.75).

d. Capital transfers

3.12. Capital transfers (investment grants or other transfers) are recorded at the time when payment is due (or, in the case of transfers in kind, when ownership of the asset is transferred or when the debt is cancelled) (cf. ESA 2010, 4.162 and 4.163).

## 3.2.4 General remarks concerning value added

3.13. Value added is the balancing item of the production account. It is the difference between the value of output and the value of intermediate consumption (irrespective of the output concept used, since intermediate consumption changes accordingly). It is a key item in measuring the productivity of an economy or industry. It can be accounted for on a gross basis (gross value added) or on a net basis (net value added), i.e. before or after the deduction of the consumption of fixed capital. Net value added is the only resource in the generation of income account. In line with the method for valuing output (basic price) and intermediate consumption (purchaser prices) net value added is measured at basic prices.

3.14. By deducting other taxes on production from the value added at basic prices, and adding other subsidies on production, the value added at factor cost is obtained. Net value added at factor cost constitutes the income of the factors of production.

## 3.3 Compensation of employees (<sup>38</sup>)

3.15. The compensation of employees is defined as total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period (cf. ESA 2010, 4.02). It includes:

- gross wages and salaries (cash/kind),
- employers' social contributions (actual and imputed).

(<sup>38</sup>) (cf. ESA 2010, 4.02. 4.13.)

3.16. Gross wages and salaries in cash comprise the following components:

a) direct basic wages and salaries (payable at regular intervals);

- b) enhanced rates for overtime, night or weekend work, work of a particularly arduous nature, etc.;
- c) cost of living and accommodation allowances;
- d) wage benefits such as Christmas, end-of-year, holiday or productivity bonuses and allowances for higher grades;
- e) allowances for transport to and from work  $(^{39})$ ;
- f) compensation for days not actually worked, paid holidays;
- g) commissions, tips, attendance fees;
- h) other allowances or occasional payments linked to overall company results as part of profit-sharing schemes;
- i) payments made by employers contributing to asset formation by employees;
- j) one-off payments to employees when they leave the enterprise, in so far as the payments are not made under a collective agreement;
- k) housing allowances payable in cash by employers to their employees.

3.17. It should be stressed that the data to be entered are gross wages and salaries, including wage and salary taxes and any higher rates of these taxes and employees' social security contributions. In cases where net wages and salaries are paid by employers to their employees, therefore, they should be increased by the value of these items.

3.18. Gross wages and salaries in kind comprise goods and services made available by employers to their employees free of charge or at reduced prices for use by the employees and their families, as and when they wish, to satisfy their needs. They do not necessarily figure in the production process. Their value is the value of the benefit which they represent: the value of the goods if they are provided free of charge, or the difference between the latter value and the payments to the employees if they are provided at reduced prices These items, which are of considerable significance in the EAA, include the following components:

- a) agricultural products made available to employees free of charge or at reduced prices, by way of renumeration (40);
- b) accommodation services produced for own account and provided to employees free of charge or at reduced prices (41);
- c) goods and services purchased by employers, provided that these purchases fulfil the definition of wages in kind (i.e. when they do not constitute intermediate consumption). In particular, the transport of employees between their place of work and home is part of their wages in kind, unless the journeys take place during the employer's time. This category includes purchased accommodation services and children's crèches, etc. (cf. ESA 2010, 4.05).

3.19. Wages and salaries in kind should be valued at their basic price or at the purchaser price (depending on whether the items are produced by the unit or purchased from outside).

3.20. Gross wages and salaries, by contrast, do not include expenditure by employers which is to their own benefit and incurred in the interest of the enterprise. The items in question are, inter alia: allowances towards/reimbursements of expenditure on travel, separation or removal incurred by employees in the course of their duties, entertainment expenses incurred by employees on behalf of the enterprise and expenditure on providing amenities at the place of work (e.g. sports and recreational facilities). Similarly, cash payments by employers to their employees for the purchase of tools or special clothing (including amounts which employees are contractually obliged to devote to such purposes) are not part of gross wages and salaries included under this heading. All these items are recorded in the intermediate consumption of employers (cf. ESA 2010, 4.07).

3.21. Employers' social contributions include the value of social contributions paid by employers to ensure that their employees are covered by social welfare provisions (except employees' social contributions deducted at source from gross wages or salaries (cf. 3.017). These contributions may be actual or imputed.

<sup>(39)</sup> This category must not include payments made primarily in the employer's interest. Such payments are part of intermediate consumption (cf. 2.108 (e)).

<sup>(40)</sup> Agricultural products provided to employees are output of the agricultural branch.

<sup>(4)</sup> Accommodation services are treated as a separable non-agricultural activity, with the result that they only appear as compensation of employees and in the form of a deduction from the operating surplus of the agricultural industry. If they were an inseparable non-agricultural activity, they would be recorded as a component of production and a form of compensation of employees.

3.22. Actual social contributions represent the payments made by employers, including statutory, contractual and voluntary contributions by way of insurance against risks and social hardship. These social contributions are paid to insurers (social security administrations or private insurers). Although paid directly to insurers, they are treated as a component of compensation of employees since the latter are deemed to receive the contributions and then pay them to insurance enterprises.

3.23. Employers' imputed social contributions represent the counterpart to other social insurance benefits, paid directly by employers to their employees or former employees and other eligible persons without involving an insurance enterprise or autonomous pension fund (<sup>42</sup>) (cf. ESA 2010, 4.10). These contributions are recorded during the period in which the work is performed (if they are the counterpart of compulsory social benefits) or when the benefits are provided (if they are the counterpart of voluntary social benefits). Employers' imputed social contributions is split into two categories: (a) Employers' imputed pension contributions (ESA 2010, 4.10 and 4.97).

3.24. It must be stressed that, in the EAA, if the production units are individual enterprises, the compensation of employees does not include the remuneration for work carried out on the holding by the holder or non-salaried members of his family; these persons share in the mixed income, which is the balance of the generation of income account for individual enterprises. If, however, the production units are part of a corporation (cf. 5.09 and 5.10), all remuneration has to be recorded as compensation of employees.

## 3.4 Taxes on production and imports (43)

3.25. Taxes on production and imports are compulsory, unrequited payments, in cash or in kind which are levied by general government, or by the institutions of the European Union, in respect of the production and importation of goods and services, the employment of labour, the ownership or use of land, buildings or other assets used in production. These taxes are payable whether or not profits are made (cf. ESA 2010, 4.14).

3.26. Taxes on production and imports (D.2) are divided into:

- taxes on products (D.21):
  - VAT-type taxes (D.211),
  - taxes and duties on imports excluding VAT (D.212), and
  - taxes on products, except VAT and import taxes (D.214)
- other taxes on production (D.29)

## 3.4.1 Taxes on products

3.27. Taxes on products (*D.21*) are taxes payable per unit of produced or traded good or service. They may be equivalent to a monetary amount determined per unit of the good or service or calculated ad valorem as a fixed percentage of the unit price or value of the good or service (cf. ESA 2010, 4.16).

3.28. VAT-type taxes are taxes on goods and services collected in stages by enterprises and ultimately charged in full to the final purchaser (cf. ESA 2010, 4.17). They include VAT and other deductible taxes applied under rules similar to those governing VAT (<sup>44</sup>).

3.29. Taxes and duties on imports excluding VAT comprise compulsory payments levied by general government, or by the institutions of the European Union, on imported goods, excluding VAT, in order to admit them to free circulation on the economic territory, and on services provided to resident units by non-resident units (cf. ESA 2010, 4.18).

<sup>(&</sup>lt;sup>42</sup>) They correspond in particular to wages and salaries which employers continue to pay on a provisional basis to their employees in the event of illness, maternity, accidents at the workplace, invalidity or redundancy, in so far as the amounts concerned can be separately identified.

<sup>(43) (</sup>cf. ESA 2010, 4.14.to 4.29.)

<sup>(&</sup>lt;sup>44</sup>) Turnover is the most important taxable item. All EU Member States raise turnover tax in the form of VAT. The rates of this tax vary from one Member State to another and indeed within individual Member States. Generally speaking, agricultural products are subject to a lower rate of tax than the standard rate.

3.30. They include import duties and other taxes such as levies on imported agricultural products, monetary compensatory amounts levied on imports, excise duties, etc. They are payable by importers and are normally passed on to the holder who purchases the products, i.e. they become part of the purchaser price of the goods and services. In cases where means of production are imported directly by agricultural producer units, the import duties, non-deductible VAT and monetary compensatory amounts (receipts or payments) should also appear in the purchaser price used for EAA purposes.

3.31. Taxes on products, except VAT and import taxes, consist of taxes on goods and services produced by resident enterprises and payable as a result of the production, export, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own final consumption or own capital formation (cf. ESA 2010, 4.19 and 4.20).

3.32. In the case of agriculture, the taxes in question are:

- taxes on sugar beet,
- · penalties for exceeding milk quotas,
- co-responsibility levies formerly applying to milk and cereals.

### BOX 60 SUGAR AND MILK QUOTAS REGIME EXPIRED IN THE EU

### Sugar market regulation

The agricultural quota system managing sugar beet and sugar production in the European Union was abolished at the end of the 2016/17 marketing year for sugar on 30 September 2017 (Regulation (EU) 1308/2013).

The end/abolishment of the sugar quotas to farmers means that 2016 was the last year when the producers of sugar beet had to pay taxes on in case of exceeding the quota. From 2017 there are no further limits to production of sugar beet or to exports, allowing production to better adjust to market demand, both within and outside the EU. After the end of the quotas Member States have the option of providing voluntary coupled support linked to production to address sectors in difficulties, including sugar beet production. This option was taken up by 11 Member States – Croatia, Czech Republic, Finland, Greece, Hungary, Italy, Lithuania, Poland, Romania, Slovakia and Spain – with overall coupled support for sugar beet amounting in 2017 to roughly €179 million. (Source: End of sugar production quotas in the EU — EUbusiness.com | EU news, business and politics )

### Milk quota

The milk quota (or dairy produce quota)s was introduced in 1984 with the purpose of keeping the milk production under control. Milk quota represented a limit on the amount of milk that a farmer could sell every year without paying penalties. Milk quotas were assets and could be bought and sold or acquired or lost by other means and so there was a market for them. Milk quotas were abolished on 30 March 2015 (CAP Health check (2007/2195(INI)). (Source: <u>https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Milk\_and\_milk\_products\_30\_years\_of\_quotas</u>)

#### The effect of quotas

The amount paid by farmers for exceeding the quota, should be recorded as taxes on product that reduce the value of the output of the relevant product.

The rent milk quotas should be recorded under 'Renting of milk quotas' [covered by agricultural services output] increasing the value of the output.

Tax on sugar beet were recorded by the next countries for the given period during the years effected by sugar quota: BE: 1985-2016; DE: 1991-2016; IE: 1990-2005; FR 1973-1989; CH: 1985-1994;

Tax on milk were recorded during the years effected by milk quota: BE: 1984-2005; DK: 1984-2014; DE: 1991-2015; IE: 1990-2015; ES: 1990-1994; FR: 1984-2014; LU: 1985-2015; NL: 1986-2015; AT: 1990-2015; PT: 1995-2015; FI: 1984-1994 and 2000-2003; IC: 2007-2015; CH; 1985-2010;

Renting of milk quotas were covered by agricultural services output: LU (1999-2015); NL (1986-2015); AT (1992-2014); CH (1999-2007);

3.33. As output is recorded at basic prices, taxes on products are recorded within the production account (cf. 2.082 to 2.086) and do not appear in the generation of income account. They should be recorded when the activities, transactions or other events which give rise to the payment take place. Since the EAA record these items net of deductible VAT, the only turnover tax recorded in them is non-deductible VAT. This is why no VAT is recorded in the accounts, except in the special case of under-compensation of VAT included under 'other taxes on production' (cf. 3.048(g).

3.34. Taxes on products (other than VAT) which affect certain products of agricultural intermediate consumption should be included in the purchaser price of intermediate consumption in the production account (cf. 2.110 to 2.113). Such cases include, for example, taxes on sugar and alcohol used for wine-making which are levied in some EU Member States. These taxes, which constitute taxes on products of the agri-food industries, should be added to the value of intermediate consumption of the agricultural industry.

## 3.4.2 Treatment of VAT

3.35. The description in the ESA 2010 (4.17) refers to the standard VAT system under which each enterprise is allowed to deduct from the amount of VAT due on its own sales the amount of tax it has paid on its purchases of intermediate inputs or capital goods. However, in addition to the standard VAT regulations, there are special regulations for agriculture (VAT flat rate systems) which differ in form from one EU Member State to another.

3.36. The flat-rate systems used in the EU Member States can be grouped into two main types of compensation for VAT paid on purchases:

- via price. In this case, farmers subject to the flat-rate system sell their products at a price increased by the VAT flat rate percentage but do not pay the invoiced VAT to the financial authorities since the VAT they invoice and retain is calculated to compensate as exactly as possible for the VAT which they have paid on their purchases,
- as a refund. Under this system, farmers sell their products exclusive of VAT. On application to the financial authorities, they
  later receive a refund calculated as a flat-rate percentage (45) applied to their sales in compensation for the VAT which they
  have paid on their purchases.

### A. Definitions

- 3.37. The following concepts for the standard VAT system apply also to the flat-rate systems:
- a) VAT invoiced by the producer: this is the VAT which the producer calculates at the rate applying to the product sold and which he charges on his invoice to each domestic purchaser;
- b) VAT invoiced to the producer on intermediate consumption: this is the VAT calculated at the rate applying to each product bought and which the producer has paid on his intermediate inputs; this is called deductible (46) VAT on intermediate consumption;
- c) VAT invoiced to the producer on purchases of fixed capital goods: this is called deductible VAT on purchases of capital goods;

 $<sup>(^{45})</sup>$  The percentage rate may vary according to the type of product and channel of distribution.

<sup>(46)</sup> The variations between Member States in the VAT systems which they operate sometimes produce situations in which VAT paid by farmers on their purchases cannot be recovered or compensated for. Such VAT payments represent (i) non-deductible VAT, i.e. VAT paid on purchases which farmers, irrespective of the system to which they are subject, may not deduct from the VAT invoiced on sales and for which there is thus no compensation; (ii) and/ or VAT other than that mentioned under (i), paid on purchases for which farmers subject to the flat-rate system are not fully compensated via the selling price or via reimbursement.

- d) VAT payable by the producer on his current transactions: this is the difference between the VAT invoiced by the producer and the VAT invoiced to the producer on his intermediate consumption purchases (a-b);
- e) Total VAT paid by the producer: this is the difference between the VAT invoiced by the producer and the total VAT invoiced to the producer on his intermediate consumption purchases and on his purchases of capital goods (a-b-c).

3.38. The provisions of the ESA 2010, 4.17 lay down a single method of recording VAT. This is the 'net' system, whereby output and input prices are recorded exclusive of deductible VAT.

3.39. In tax law, VAT is treated as a 'transitory item' for producers, so that the deductible VAT which a producer has to pay on his purchases does not represent a true cost component for his own calculations and can be regarded merely as an advance instalment of the VAT which he has to calculate on his own turnover, thus leaving him only the difference to pay to the tax office. Since, in general, it is only the final consumer who has to pay the VAT levied on that product, the producer (together with the producers of the intermediate consumption goods required) acts effectively as an agent of the tax office. Conversely, where it is not possible for the producer to deduct (or reclaim) tax paid on purchases (non-deductible VAT), the VAT in these cases should be regarded as a cost component.

### B. Operation of the net recording method

3.40. For farmers subject to the standard system there is no accounting difficulty; VAT invoiced on products sold, or otherwise disposed of, is ignored in the EAA and should not appear in any output price used for evaluating final output, while deductible VAT paid on purchases of items of intermediate consumption and fixed capital goods is also excluded from the relevant prices when calculating expenditures for the EAA.

3.41. For farmers subject to the flat-rate systems, however, there are accounting problems (cf. 3.035 and following). As is obvious, the compensation allowed to individual farmers will only rarely be exactly equal to the VAT which they have paid on their purchases. In the case of the flat-rate systems, the method of recording VAT will be identical to that used for the standard system, i.e. exclusive of VAT for the individual items of final output and exclusive of deductible VAT for the individual items of intermediate consumption and GFCF.

The difference between the flat-rate compensation granted to farmers who are subject to the flat-rate systems and the VAT which they would have been able to deduct if they had been subject to the standard VAT system represents over- or under-compensation. Any over- or under-compensation must be entered separately in the EAA.

3.42. The method of recording over- or under-compensation of VAT under flat-rate systems is as follows:

- over-compensation of VAT on purchases is recorded under 'Other subsidies on production',
- under-compensation of VAT on purchases is recorded under 'Other taxes on production'.

'VAT on purchases' is the VAT which farmers who are subject to the flat-rate system would have been able to deduct had they been subject to the standard VAT system.

3.43. This recording method offers the advantage of being conducive to uniform treatment of agricultural output, intermediate consumption and GFCF, irrespective of the VAT system to which farmers are subject. Moreover, it makes for symmetrical treatment of over- or under-compensation of VAT compared with gross value-added at basic prices. This enables gross value-added at basic prices to be calculated regardless of the VAT system adopted, which favours harmonisation and comparability of the EAA of the Member States (cf.3.033).

## 3.4.3 Other taxes on production (D.29)

3.44. Other taxes on production (*D.29*) comprise all taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced or sold (cf. ESA 2010, 4.22). They may be payable on land, fixed assets or labour employed in the production process or on certain activities or transactions.

3.45. Other taxes on production are the only taxes to be recorded in the generation of income account for the industry. They appear in the accounts of the branches or sectors which pay them (payment criterion).

3.46. The taxes to be recorded in the generation of income account for agriculture must be:

- compulsory;
- paid direct by the agricultural industry;
- paid to general government or the institutions of the European Union;
- within the definition of other taxes on production (see 3.044).

3.47. Owing to the disparate historic developments of public finances in the various EU Member States, there is a very wide range of taxes on production throughout the EU. In agriculture, there are two other fairly important types of tax on production: property tax and motor vehicle tax.

3.48. For agriculture, the most important other taxes on production are:

- a) property taxes and other taxes on the use of land and buildings used for production purposes (irrespective of whether the agricultural units own or hire them);
- b) taxes on the use in production of fixed capital goods such as motor vehicles, machines or other equipment (irrespective of whether the agricultural units own or hire them);
- c) wage-bill taxes paid by the employer;
- d) taxes on pollution resulting from production activities;
- e) taxes on licences/permits to engage in commercial or professional activities, on condition that the licences/permits are granted automatically once the amounts due have been paid. If a regulatory function attaches to these payments (e.g. checks on the applicant's competence or qualifications), they should be treated as purchases of services from general government and be recorded as intermediate consumption (unless they are completely out of proportion to the cost of providing the services in question) (cf. 2.108(o);
- f) water rates which are paid as flat-rate taxes and not proportional to the quantity of water consumed;
- g) under-compensation of VAT resulting from the application of the flat-rate VAT systems (cf. 3.041 and 3.042).

### BOX 61 TAXES ON WAGE-BILL PAID BY THE EMPLOYER

These consist of taxes payable by enterprises assessed either as a proportion of the wages and salaries paid or as a fixed amount per person employed. They do not include compulsory social security contributions paid by employers or any taxes paid by the employees themselves out of their wages and salaries (cf. SNA 2008, 7.97 a.)

3.49. In line with the accrual principle, taxes on production are recorded at the time when a fiscal obligation is incurred. In the case of under-compensation of VAT, this is the time of purchase of goods and services of intermediate consumption and the GFCF which gives rise to it (not the time of reimbursement).

3.50. Other taxes on production do not include:

- a) statutory payments which are made direct by the agricultural industry but whose recipients are neither general government nor institutions of the European Union. These payments are regarded as purchases of market services from recipients of transfers and therefore included in the intermediate consumption of agriculture;
- b) fines and penalties and the costs imposed in connection with collection and recovery should not be recorded with the taxes to which they relate, unless they cannot be distinguished from them (cf. ESA 2010, 4.133);
- c) compulsory taxes not raised by general government or the institutions of the European Union and which, although borne by agriculture, are settled by a client branch. These payments should be accounted for in the intermediate consumption of the user branch;
- d) taxes normally levied on profit or wealth, such as equalisation taxes, income tax, corporation tax and wealth tax. These should be included as current taxes on income, assets, etc. in the secondary distribution of income account;
- e) taxes on inheritance and gifts and special wealth taxes. These should be included as capital taxes in the capital account;
- f) water rates whose amount is linked directly or indirectly to the quantity of water consumed.

## **3.5** Subsidies (<sup>47</sup>)

### **BOX 62 CLARIFICATION: SUBSIDIES VS CAPITAL TRANSFERS**

Subsidies are current non-refundable payments given to resident producers, whose purpose is to influence their production levels, the selling prices of their outputs or the remuneration of institutional units engaged in production. Subsidies have the same impact as negative taxes on production in so far as their impact on the operating surplus is in the opposite direction to that of taxes on production. Subsidies on products can be given to remove or decrease some type of burdens connected to products and/or arose during production, that can take the form of the difference between the purchaser price and the selling price of items of intermediate consumption. Purposes of other subsidies on production can be different, independent of the impact on prices.

The capital transfers are grants that enterprises receive in order to finance their capital formation or compensate for damage to their capital assets. The aim of the capital transfer to help the producers improving their fixed capital goods.

While subsidies increase the value of output and/or reduce the production costs, so their impact on producers' income can be directly measured, the impact of capital transfers on producers' income can only be measured indirectly, since capital transfers typically increase the production capacity and affect the output over a longer period of time.

Further details and definitions of subsidies and capital transfers can be found from the point 3.51 and below 3.7 Capital transfers.

3.51. Subsidies are current unrequited payments which general government or the institutions of the European Union make to resident producers, with the objective of influencing their levels of production, the prices *of their products* or the remuneration of the factors of production. Other non-market producers can receive other subsidies on production only if those payments depend on general regulations applicable to market and non-market producers as well. By convention, subsidies on products are not recorded in non-market output (P.13) (cf. ESA 2010, 4.30).

3.52. Subsidies (D.3) are classified into:

- subsidies on products (D.31):
  - import subsidies (D.311),
  - other subsidies on products (D.319), and
- other subsidies on production (D.39).

## 3.5.1 Subsidies on products

3.53. Subsidies on products are subsidies payable per unit of a good or service produced or imported. The subsidy may be a specific amount of money per unit of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit. A subsidy may also be calculated as the difference between a specified target price and the market price actually paid by a buyer. A subsidy on a product usually becomes payable when the good is produced, sold or imported. By convention, subsidies on products can only pertain to market output (P.11) or to output for own final use (P.12) (cf. ESA 2010, 4.33).

(47) (cf. ESA 2010, 4.30. to 4.40.)

# BOX 63 NUMERICAL EXAMPLE: CALCULATION OF SUBSIDIES PER HECTARE FOR CROP-SPECIFIC PAYMENT ON COTTON

Calculation of reference amount in case the eligible area of the given product exceeds the base area established in the Regulation.

Base areas, fixed yields and reference amounts are given in the Regulation.

The amount of the crop-specific payment per hectare of eligible area shall be calculated by multiplying the given fixed yields with the following reference amounts, as long as the eligible area in a given Member State and claim year does not exceed the national base area.

Subsidies/ha: 763.36 = 636.13x1.2

Countries	Base area (ha)	Fixed yields tonne/ha	Reference amounts EUR	Subsidies/ha EUR/ha	Total amount EUR
MS1	4000	1.2	636.13	763.36	3 053 424

If the eligible area of cotton in a given Member State and claim year exceeds the base area established in the Regulation, the reference amount for that Member State shall be reduced proportionally to the overrun of the base area.

Countries	Countries Eligible area Fixed yields		Reference	Subsidies/ha	Total amount	
	(ha) tonne/ha		amounts EUR	EUR/ha	EUR	
MS1	4100	1.2	620.61	744.74	3 053 424	

Calculation of reference amount: 620.61 = 636.13/(4100/4000)

Calculated subsidies/ha: 744.74 = 620.61x1.2.

*Source:* Regulation (EU) 2021/2115, Crop-specific payment for cotton Article 36–38

3.54. Import subsidies consist of subsidies on goods and services that become payable when the goods cross the frontier for use in the economic territory or when the services are delivered to resident institutional units. They may include losses, incurred as a matter of deliberate government policy, by government trading organisations whose function is to purchase products from non-residents and then resell them at lower prices to residents (cf. ESA 2010, 4.34).

3.55. Subsidies on products are accounted for in the basic price (cf. 2.082 to 2.086) at the time of the valuation of output and therefore do not appear in the industry's generation of income account. Subsidies on products which relate to the acquisition (i.e. imports or others) of intermediate consumption products or fixed capital goods, and which lead to a reduction in the purchaser prices of these goods, are taken into account by using purchaser prices in the valuation of intermediate consumption or GFCF (cf. 2.110 to 2.113); correspondingly, this leads to a reduction of the costs of these products or goods.

3.56. The method of valuation of output at basic prices requires a fundamental distinction between subsidies on products and other subsidies on production. Subsidies on agricultural products (<sup>48</sup>) can be paid either to agricultural producers or to other economic operators. Only subsidies on products which are paid to agricultural producers are added to the market price received by producers to obtain the basic price. Subsidies on agricultural products paid to economic operators other than agricultural producers are not entered in the EAA.

<sup>(48)</sup> Subsidies on agricultural products paid to agricultural producers include any subsidy in the form of a deficiency payment to holders (i.e. in cases where general government pays the producers of agricultural products the difference between the average market prices and the guarantee prices of agricultural products).

3.57. Subsidies on products should be recorded at the time when the transactions or events which give rise to them (production, sale, import, etc.) take place, so as to preserve the consistency with the other accounts (i.e. the measurement of output at basic prices). Thus, compensatory aid for arable crops should be recorded at the time of harvest whereas special premiums for cattle and suckler cows and premiums for ewes are recorded at the time the animals are kept and/or the date of the grant application.

### **BOX 64 SUBSIDIES ON PRODUCTS**

#### **Common Agricultural Policy (CAP)**

The CAP launched in 1962, is a common policy for all EU countries. It is managed and funded at European level from the resources of the EU's budget. The CAP is a partnership between agriculture and society, and between Europe and its farmers.

As the CAP has undergone several major reforms, the volume and composition of subsidies on agricultural products has changed considerably over the course of time. The first radical change to the CAP was introduced by the 1992 MacSharry reform by replacing the system of protection through prices with a system of compensatory income support. Direct aids per hectare for arable crops as well as headage payments for cattle were introduced to compensate loss in income due to a significant reduction in guaranteed prices. Following the decoupling of most payments by the 2003 reform (introducing the single payment scheme) and the 2009 Health Check, the volume of payments classified as subsidies on products has decreased significantly. In line with their definitions, subsidies on agricultural products include in particular the following grants:

#### Subsidies on agricultural products paid to agricultural producers

Subsidies on agricultural products granted under former CAP regimes, such as

- certain grants introduced with the 1992 MacSharry reform as compensatory aid for arable crops (cereals, protein crops and oilseeds) and premiums for cattle (for suckler cows and special premiums). This classification was based on the following three considerations:
- the concept of subsidies on products was enlarged in the ESA 95 to include subsidies in the form of "deficiency payments". Compensatory payments for arable crops were similar in application to forms of deficiency payments. Moreover, the amounts of these payments was strictly linked to the quantities produced (at macro-economic level),
- the working and economic effects of the MacSharry reform: these grants were part of a policy which had always been aimed at products, combining market support and direct aid, and accompanied by measures to curb production. This policy had been maintained despite a degree of "decoupling" between the level of grants and agricultural production or the level of use of the means of agricultural production (only the breakdown of the various types of support (aid in the form of export subsidies, intervention aid and direct aid) had been changed),
- the price-based part of the premium for cattle adopted under the CAP reform was a form of compensatory aid for declines in cattle intervention prices. It was classified as subsidies on products, in line with compensatory payments for arable crops. Despite the more complicated treatment of the premiums prior to the reform of the CAP, it has been agreed not to divide them into two, in order to provide a degree of consistency with the compensatory payments for arable crops.
- grants for olive oil production,
- grants for the production of textile crops (fibre flax and hemp),
- grants for silkworm production,
- grants for banana production (B1-1508, only the part relating to compensatory aid),
- grants for dried grape production,
- grants for seed production,

- grants for hop production,
- premiums for ewes and she-goats,
- any subsidy in the form of a deficiency payment to holders (i.e. in cases where general government pays to the producers of agricultural products the difference between the average market prices and the guarantee prices of agricultural products).

### Subsidies on agricultural products paid to other economic operators

- refunds for the export of cereals, fresh fruit and vegetables etc.,
- grants for the production of oleaginous products (before 1992), protein products and flax (before 1993),
- grants for potato starch production,
- grants for dried fodder production,
- grants for cotton production,
- grants for the use of musts,
- premiums on tobacco production.

All the above-mentioned subsidies constitute subsidies on agricultural products. However, only grants paid to agricultural producers (i.e. the first group) are added to the market price received by producers to obtain the basic price. Subsidies on agricultural products paid to economic operators other than agricultural producers (i.e. the second group) are not entered in the EAA (cf. <u>3.56</u>). When the agricultural products concerned constitute intermediate consumption of the agri-food industries, the amount of the aid is deducted from the intermediate consumption of the agri-food industries.

#### CAP 2023-27

For the period 2023-27, the CAP will be built around ten key objectives. Focused on social, environmental and economic goals, these objectives will be the basis upon which EU countries design their CAP strategic plans. The objectives are:

- to ensure a fair income for farmers;
- to increase competitiveness;
- to improve the position of farmers in the food chain;
- climate change action;
- environmental care;
- to preserve landscapes and biodiversity;
- to support generational renewal;
- vibrant rural areas;
- to protect food and health quality;
- fostering knowledge and innovation.

### **Coupled direct payments**

Coupled direct payments shall be the following: (a) the coupled income support; (b) the crop-specific payment for cotton.

Member States may grant coupled income support to active farmers to help the supported sectors and productions or specific types of farming to address the difficulties encountered by improving competitiveness, sustainability or quality. Coupled income support shall take the form of an annual payment per hectare or animal (Regulation (EU) 2021/2115, Article 32).

Coupled income support may only be granted to the following sectors and productions or specific types of farming therein where they are important for socio-economic or environmental reasons:

a) cereals;

b) (b) oilseeds excluding confectionary sunflower seeds;

c) protein crops, including legumes and mixtures of legumes and grasses provided that legumes remain predominant in the mixture;
d) flax;
e) hemp;
f) rice;
g) nuts;
h) starch potatoes;
i) milk and milk products;
j) seeds;
k) sheep meat and goat meat;
l) beef and veal;
m)olive oil and table olives;
n) silk worms;
o) dried fodder;
p) hops;
q) sugar beet, cane and chicory roots;
r) fruit and vegetables;
s) short rotation coppice.

## 3.5.2 Other subsidies on production

3.58. Other subsidies on production consist of subsidies other than subsidies on products, which resident producer units may receive as a consequence of engaging in production. For their other non-market output, other non-market producers can receive other subsidies on production only if these payments from general government depend on general regulations applicable to both market and non-market producers (cf. ESA 2010, 4.36). The ESA 2010 refers to four other subsidies on production (cf. ESA 2010, 4.37): subsidies on payroll or workforce, subsidies to reduce pollution, grants for interest relief, and over-compensation of VAT. These payments relate mainly to the assumption of production costs or support for changes in the method of production.

3.59. Since output is valued at basic prices, only other subsidies on production are recorded in the generation of income account (as negative uses).

### A. Type of beneficiary

3.60. Beneficiaries of subsidies must normally produce market goods and services or goods and services for own final use. Market goods and services are all the goods and services which are released or intended for release on the market. They include products sold, bartered, used for payment in kind or stored prior to being put to one or more of the above uses at a later date. Production for own final use involves products which are preserved for purposes of final consumption or GFCF by the same unit. Nevertheless, non-market producers may benefit from other subsidies on production if they are payable under general regulations applicable to market and non-market producers alike.

3.61. The production of market services also includes commercial and storage services. Subsidies can therefore also be granted to the trade and market-regulating agencies whose function is to buy, store and resell agricultural products (cf. 4.068 and 4.069 on market-regulating agencies).

### B. Purposes of other subsidies on production

3.62. Other subsidies on production can, under the ESA 2010, be granted in cases where their impact on selling prices or adequate remuneration of the factors of production are not necessarily the main purpose of the subsidies. For example, financial aid may be granted to agricultural production in order to safeguard the cultural and natural heritage, promote tourism in a particular region or to protect the soil against erosion, regulate the natural water balance or influence the climate.

### C. Payment criterion

3.63. With the exception of interest-rate subsidies, which are a special type of subsidy, other subsidies on production are attributed to the generation of income account of the production branches or the sectors to which they are paid. As a result of this method of attributing subsidies, the EAA do not account for all grants made to agriculture. Apart from direct aid, agricultural production units benefit from subsidies (within the meaning of the ESA 2010) paid to up- and downstream production branches and, especially, market- regulating agencies (<sup>49</sup>).

3.64. In the case of agriculture, the most important types of other subsidy linked to production are:

- wage and payroll subsidies,
- grants for interest relief (cf. ESA 2010, 4.37(c) made to resident producer units, even when they are intended to encourage capital formation (<sup>50</sup>). In effect, these are current transfers designed to reduce producers' operating costs. They are treated in the accounts as subsidies to the producers benefiting from them, even when the difference in the interest is, in practice, paid directly by the government to the credit institution making the loan (by way of derogation from the payment criterion),
- over-compensation of VAT resulting from the application of the flat-rate systems (cf. 3.041 and 3.042),
- the assumption of social security contributions and real-estate taxes,
- the assumption of other costs such as private storage aid for wine and grape must and the re-storage of table wines (in so far as the stocks are owned by an agricultural unit),
- various other subsidies on production:
- grants for land set-aside (compulsory set-aside linked to acreage-based grants and voluntary set-aside),
- financial compensation for withdrawals of fresh market fruit and vegetables. These payments are often made to groups
  of market producers, and should be treated as subsidies to agriculture, since they are direct compensation for loss of
  production,
- cattle premiums for seasonal adjustment (deseasonalisation) and extensification,
- grants for agricultural production in less-favoured and/or mountainous areas,
- other grants intended to influence methods of production (extensification, techniques designed to reduce pollution, etc.),
- amounts paid to holders as compensation for recurrent losses of goods in inventories such as crop or livestock products which are considered to be work-in-progress and plantations in so far as they are still in their growth period (see 2.040 to 2.045). By contrast, compensatory transfers for losses of goods in inventories and/or plantations used as factors of production are recorded as other capital transfers in the capital account.

### **BOX 65 TYPES OF OTHER SUBSIDIES LINKED TO PRODUCTION**

Below are types of other subsidy linked to production in addition to those listed in the Regulation:

- direct payments granted to farmers in the form of a basic income support based on the number of hectares farmed such as the 'basic payment' granted under the first pillar of the CAP regime 2014-2020 and the former single farm payment introduced by the 2003 CAP reform,
- direct payments for agricultural practices beneficial for the climate and the environment such as the 'greening payments' granted under the first pillar of the current CAP regime 2014-2020 and agrienvironment-climate measures under the second pillar of the CAP (rural development policy),
- support for farmers in areas facing natural or other specific constraints.
- (49) An important example are subsidies paid to non-life insurance companies which enable these companies to charge lower (gross) premiums from the insurance policy holders (e.g. agricultural enterprises taking out insurance to cover risks such as damage by hail, frost etc.). As these subsidies are subsidies on products, the product being the insurance service, they are not recorded in the generation of income account of the policy holder (and thus not, in the above example, in the EAA). However, in as much as these subsidies reduce the costs of the insurance services (to the insurance policy holder), their effect is reflected in the production account (by a lower value of intermediate consumption, cf. 2.108(g)) of the insurance policy holder.
- (<sup>50</sup>) However, when a grant serves the dual purpose of financing both the amortisation of the debt and the payment of interest on it, and when it is not possible to apportion it between the two elements, the whole of the grant is treated as an investment grant.

In accordance with the objectives of the CAP 2023-27 Member States shall grant the next types of decoupled direct payments to active farmers ((Regulation (EU) 2021/2115, Article 21, 29, 30, 31):

- basic income support for sustainability ('basic income support') in the form of an annual decoupled payment per eligible hectare and for each eligible hectare declared by an active farmer. (Regulation (EU) 2021/2115, Article 21),
- complementary redistributive income support for sustainability ('redistributive income support')
  with the objective of fairer distribution and more effective and efficient targeting of income support
  by redistribution of direct payments from larger to smaller or medium-sized holdings (Regulation
  (EU) 2021/2115, Article 29),
- complementary income support for young farmers,
- schemes for the climate, the environment and animal welfare.

3.65. Applying the accrual principle to the recording of other subsidies on production can be a delicate matter. As it is difficult to draw up a general rule, this principle should be applied with consistency, flexibility and pragmatism. Because a large number of subsidies to agriculture are linked to production and the factors of production (acreage, herd, etc.), these subsidies should usually be recorded at the time of production or when the factors of production are acquired (especially in the case of land and livestock). In the case of subsidies which are not directly linked to production or the factors of production or the factors of when the subsidies are paid. In this particular case, subsidies are recorded when they are received.

3.66. The following special treatments are recommended:

- compensatory payments for arable land which is set aside: at the time when the area to be set aside is stated,
- withdrawals of products (fruit/vegetables): at the same time as the physical withdrawal during the crop year and not the calendar year, in order to ensure consistency between the estimation of output, less withdrawals during the crop year, and the recording of subsidies (as negative uses) in the generation of income account,
- grants for cattle production (extensification premium, etc.): the moment when the animals are acquired by the holders and the date of the grant application,
- assumption of costs (including interest relief): the time when the expenditure and interest are due,
- compensation for recurrent losses affecting output (crops, livestock and plantations which are still in their growth period, cf. 3.064): at the moment when the output is recorded in the EAA (if the exact amount of the compensation is known with certainty),
- other subsidies not directly on products or factors of production (direct income support, aid to less-favoured areas, etc.): it is recommended that the criterion depending on the time of payment continues to be used, because it is difficult to determine when the application for compensation was filed and whether the amounts in question are accurate.

### **BOX 66 ACCRUAL PRINCIPLE VS TIME OF THE PAYMENTS**

Following the same logic as in the last item of the list above, in cases where the accrual principle cannot be properly applied to the calculation of other subsidies on production, the criterion depending on the time of payment could be used.

3.67. The EAA does not treat the following as subsidies:

- current transfers which, although they are subsidies within the meaning of the EAA, are not paid to agricultural
  production units. Most of these transfers are subsidies paid to market-regulating agencies. Although the amounts paid
  can affect the selling prices of agricultural products and therefore constitute a stimulus to agriculture, they should be
  recorded according to the payment
- current transfers to agricultural producer units by a market-regulatory agency. These should be recorded as components of output of the product in respect of which the transfer is paid insofar as the market-regulatory agency is involved only in

the purchase, sale or storage of the goods. If, however, the agency is involved only in paying subsidies, then current transfers to producer units should be recorded as subsidies (cf. 3.068 and 3.069),

- exceptional transfers by professional bodies to agricultural production units. These transfers cannot constitute subsidies since professional bodies are not general government,
- current transfers by general government to households in their capacity as consumers. They are treated either as social benefits or as miscellaneous current transfers. The former include certain public grants for structural change, such as financial aid for the vocational retraining of holders,
- capital transfers: these are different from current transfers in that they involve the acquisition or disposal of an asset or assets by at least one of the parties to the transaction. Whether made in cash or in kind, they should result in a commensurate change in the financial, or non-financial, assets shown in the balance sheets of one or both parties to the transaction (cf. ESA 2010, 4.145). Capital transfers cover capital taxes, investment grants and other capital transfers (cf. ESA 2010, 4.147). They are recorded in the capital account of the sector/industry as changes in liabilities and net value. Some types of aid to agriculture are capital transfers. The most important of these are:
  - grants for converting orchards/vineyards (not subject to a replanting obligation), which constitute other capital transfers,
  - grants for restructuring orchards/vineyards (subject to a replanting obligation), which are investment grants,
- grants for the cessation of or reduction in milk production: these are recorded as other capital transfers in so far as they have an explicit or implicit impact on the value of quotas,
- transfers by general government to agricultural corporations and quasi-corporations intended to cover losses accumulated during several financial years or exceptional losses due to factors beyond the enterprise's control. These transfers should be classified as other capital transfers,
- compensation paid by general government or the rest of the world (i.e. from abroad and/or by the institutions of the European Union) to the owners of fixed capital goods engaged in the production of agricultural products, as a result of exceptional and catastrophic losses such as the destruction of or damage to these goods caused by acts of war, other political events or natural disasters (cf. 2.045). These payments should be classified as other capital transfers (cf. 3.096),
- cancellations of debts which the producers of agricultural products have contracted with general government (e.g. advances from general government to a producer enterprise which has accumulated operating losses over several financial years). The ESA 2010 states that these transactions should also be classified as capital transfers,
- the abatement or lowering of taxes on production, income or wealth is not explicitly stated in the ESA 2010 or, consequently, in the EAA, since only taxes which are actually levied are accounted for,
- shares and participating interests held by general government in the capital of agricultural corporations and quasicorporations. These are recorded as shares and other participating interests.

### **BOX 67 MILK QUOTAS IN THE EU**

It should be noted that the milk quotas were removed in the EU in 2015 (see 3.32, Box 60).

### D. Market-regulatory agencies

3.68. In a breakdown of the economy, market-regulatory agencies are assigned as follows:

a) where concerned exclusively with the purchase, sale or storage of goods:

- i. by industry, to trade; this activity is deemed by convention to be the output of non-financial market services;
- ii. by sector, to non-financial corporate and quasi-corporate enterprises, if these market-regulating agencies are considered as institutional units within the meaning of the ESA 2010, and if not, to the sector to which the larger unit belongs;
- c) where concerned exclusively with the payment of subsidies:
  - i. by industry, to the branches of non-market output of general government, since only the government (apart from institutions of the European Union) can pay subsidies according to ESA 2010 ruling;
  - ii. by sector, to the sector general government (cf. preceding indent);
- c) where concerned with both purchase, sale and storage of goods and the payment of subsidies:

- i. by industry, to the branch trade, as regards their units of production (of the local KAU type) which buy, sell or store goods, and to the branches of non-market output of general government, together with its production units;
- ii. by sector, to the sector general government, since only general government can pay subsidies. Assignment to another sector would mean that the subsidies paid by the market-regulating agency no longer constituted subsidies within the meaning of the ESA 2010.

3.69. A consequence of the strict application of the payment criterion is that various subsidies within the meaning of the ESA 2010 do not appear in the EAA, since they are recorded under the branches and sectors to which the subsidies are paid. In particular, if market-regulatory agencies are assigned to the sector general government, subsidies paid to the agencies in connection with market-regulating processes (purchase, storage and resale) appear as 'Uses' but also as 'Resources' in the sector general government. Consequently, subsidies (i.e. other subsidies on production) may be made by general government to other general government agencies.

## **3.6 Property income (**<sup>51</sup>**)**

## 3.6.1 Definition

3.70. Property income is the income receivable by the owner of a financial asset or *natural resources* in return for providing funds to, or putting the *natural resources* at the disposal of, another institutional unit (ESA 2010, 4.41).

### **BOX 68 PROPERTY INCOME**

Property income (D.4) accrues when the owners of financial assets and natural resources put them at the disposal of other institutional units. The income payable for the use of financial assets is called investment income, while that payable for the use of a natural resource is called rent. Property income is the sum of investment income and rent (ESA 2010, 4.41).

3.71. The ESA 2010 classifies property incomes (D.4) in the following way:

- interest (D.41),
- distributed incomes of corporations (dividends and withdrawals from income of quasi-corporations) (D.42),
- reinvested earnings on foreign direct investment (D.43),
- other investment income (D.44): investment income attributable to insurance policy holders (D.441), investment income payable on pension entitlements (D.442); investment income attributable to collective investment funds shareholders (D.443),
- rents (D.45).

3.72. The EAA are concerned only with property income accounted for in the entrepreneurial income account (cf. sequence of accounts, 1.38 to 1.48). This account records on the resources side income received by units as a result of their direct participation in the production process (operating surplus/mixed income) and receivable property income received. It records on the uses side payable property income linked to agricultural activities (and inseparable non-agricultural secondary activities). Generally speaking, the entrepreneurial income account can only be calculated for the institutional sectors, although it may be calculated for an industry if certain property income can be attributed to local KAUs.

3.73. Only three types of property income can be of relevance to the EAA:

- interest (D.41),
- rents (D.45) and
- investment income attributable to insurance policy holders (D.441).

### (<sup>51</sup>) (cf. ESA 2010, 4.41 to 4.76)

## 3.6.2 Interest (<sup>52</sup>)

3.74. Interest (*D.41*) is the charges payable on a capital loan. It includes payments to be made at intervals, fixed in advance, of a percentage (fixed or otherwise) of the value of the loan. In the EAA, interest is the counterpart of loans granted to meet the needs of agricultural holdings (for example, with a view to acquiring land, buildings, machines, vehicles or other equipment, even if these are used in the context of inseparable non-agricultural secondary activities).

3.75. Interest also includes payments relating to leasing of fixed capital goods for their use in agriculture (possibly including land). Only the rent part (treated as an imputed loan granted by the lessor to the lessee) paid by the lessee is included under payment of interest (the capital part is recorded in the financial account).

3.76. It should be noted that notional interest on fixed equity capital in agricultural holdings is not recorded under this heading; it appears as a component of the income of the agricultural enterprise (cf. 5.06). Similarly, the amount to be recorded as interest payable includes interest-rate subsidies to agriculture.

3.77. Interest receivable in connection with agricultural activities by units belonging to corporate agricultural enterprises should also be recorded. Interest receivable by individual enterprises is excluded from the measure of entrepreneurial income of the agricultural industry, since it was felt that the majority of interest-bearing assets are not linked to the agricultural activity of the units and because it is very difficult to distinguish family assets from assets used in production (<sup>53</sup>).

### **BOX 69 FINANCIAL ACCOUNT NOT PART OF EAA**

### As it was mentioned in chapter 1, the financial account is not covered by EAA (see 1.44).

3.78. Interest is recorded in line with the accrual principle, i.e. as accrued interest (not as interest paid).

3.79. The value of the services provided by financial intermediaries being allocated among different customers, the actual payments or receipts of interest to or from financial intermediaries need to be adjusted to eliminate the margins that represent the implicit charges made by financial intermediaries. The estimated value of these costs should be subtracted from the interest paid by borrowers to financial intermediaries and added to the interest received by depositors. The costs are regarded as remuneration for services rendered by financial intermediaries to their clients and not as an interest payment (see 2.107.1 and 2.108(i); ESA 2010, 4.51).

### BOX 70 INTEREST AND FISIM

The amounts of interest on loans and deposits payable to and receivable from financial institutions include an adjustment for a margin that represents an implicit payment for the services provided by the financial institutions in providing loans and accepting deposits. As the values of the service charges are treated as payments for services rendered by financial intermediaries to their clients and not as an interest payment, the actual payments or receipts to and from financial institutions have to be adjusted to eliminate the these charges. The amounts of interest paid by borrowers to financial intermediaries must be reduced by the estimated values of the charges payable, and on the contrary the amounts of interests receivable by depositors must be increased by the amount of the service charge payable (see 2.107.1 and 2.108(i); ESA 2010, 4.43 and 4.51).

(52) (cf. ESA 2010, 4.42 to 4.52)

(<sup>53</sup>) Interest receivable corresponds to 'Other accounts receivable' (F.8) in the financial account.

## 3.6.3 Rents (on land and subsoil assets)

3.80. Rents (*D.45*) correspond to payments made to the owner of *natural resources* (land and subsoil assets) in return for making assets available to another unit. In the EAA, this item corresponds mainly to rents paid on land by holders to the landowners (<sup>54</sup>).

### **BOX 71 DEFINITION OF RENT**

Rent is the income receivable by the owner of a natural resource for putting the natural resource at the disposal of another institutional unit. There are two different types of resource rents: rent on land, and rent on subsoil resources (cf. ESA 2010, 4.72).

3.81. Where the owner pays certain charges directly linked to agricultural activity (property tax, the cost of maintaining land, etc.), the rents to be recorded should be reduced accordingly. These charges are accounted for as other taxes on production (in the case of property tax) or intermediate consumption (in the case of land maintenance).

3.82. Rents on land do not include the rentals of buildings or dwellings situated on it; those rentals are treated as the payment for a market service provided by the owner to the tenant of the building or dwelling, and are to be recorded in the accounts as the intermediate consumption of services or as final consumption expenditure (household accounts), depending on the type of tenant unit. If there is no objective basis on which to split the payment between rent on land and rental on the buildings situated on it, the whole amount is to be recorded as rent on land. This rule is an adapted version of the ESA recommendation (cf. ESA 2010, 4.73) ( $^{55}$ ).

3.83. All rent on land should be recorded under this heading whether the land is rented for less or more than one year.

3.84. Rents do not include:

- the rental value of dwellings contained in these buildings; this is remuneration for a market service which is a component of private consumption (i.e. the occupant pays the rent from his net residual income),
- rents paid for the professional use of non-residential buildings (cf. 2.108(a),
- · depreciation of buildings,
- current maintenance expenditure on buildings (cf. 2.106),
- property tax (cf. 3.048(a),
- expenses relating to buildings insurance (cf. 2.108(g).

3.85. In the case of land and buildings used by the owner, there is no need to account for notional rents. The rents corresponding to non-produced *non-financial* assets such as patented assets and production rights (milk quotas), should be recorded as intermediate consumption (cf. 2.108(n).

### BOX 72 MILK QUOTA IN THE EU

It should be noted that the milk quotas were removed in the EU in 2015 (see <u>3.32</u>, <u>Box 60 Sugar and</u> <u>milk quotas regime expired in the EU</u>).

<sup>(&</sup>lt;sup>54</sup>) Note that rents received are not relevant to the EAA due to the use of the agricultural industry concept (cf. 1.44).

<sup>(&</sup>lt;sup>55</sup>) The ESA 2010 proposes that the full amount be recorded as rent on land if the value of the land is thought to be higher than that of the building, and as rent on buildings if the opposite is the case.
# **3.6.4** Investment income attributable to insurance policy holders (not covered by the EAA)

3.86. Investment income attributable to insurance policy holders corresponds to total primary incomes received from the investment of insurance technical reserves and pension funds (cf. ESA 2010, 4.68). These technical reserves are treated as assets belonging to the insured. The ESA 2010 provides for the calculation of entrepreneurial income to include, as resources, incomes received from the investment of insurance technical reserves. This income is attributed to the insured as property income attributed to insurance policy holders. The latter is treated as being paid back to the insurance enterprises in the form of additional premiums, since, in practice, the income is retained by them (cf. ESA 2010, 4.69).

3.87. Investment income attributable to insurance policy holders is not covered by the EAA. In fact, in order to be meaningful, a measure for the income of agricultural activity should:

- include all flows related to non-life insurance (value of the service, income attributed to insurance policy holders, net premiums and claims): in this case, the income measured appears after description of all transactions of redistribution (between insurance policy holders and insurance enterprises and between periods) linked to non-life insurance, or
- only take into account the value of the service (which is definitely acquired from the insurance enterprise) (cf. 2.108. (g): in this case, the income measured appears before description of all these transactions of redistribution.

The EAA have opted for the second solution.

# 3.7 Capital transfers (56)

# BOX 73 FADN AS A POTENTIAL SOURCE TO COMPILE SUBSIDIES (D.3) AND CAPITAL TRANSFERS (D.9)

Apart from administrative data, FADN/FSDN (<sup>57</sup>) is a further possible source for subsidies and capital transfers. This box is an indication to help data compliers that use or plan to use FADN/FSDN to compile subsidies and/or capital transfers. It should not be understood as a guideline or a recommendation to use this source.

<u>Table 15</u> illustrates the different kind of subsidies and capital transfers recorded in FADN, which can be used during the compilation of EAA. This is a general mapping to help data compliers, meanwhile it should be borne in mind that the reality of the country can be more complex so it should always be taken into account the concrete implementation of the individual schemes in the Member States and the classification also has to be done in coordination with the National Accounts.

#### TABLE 15

# Mapping of the codes recording subsidies / capital transfers in FADN and in EAA

	FADN/FSDN Category of subsidies	ESA/EAA Category of subsidies			
	DECOUPLED PAYMENTS		DECOUPLED PAYMENTS		
Code	Description	Code	Description		
1150	Basic Income Support for Sustainability	D.39	Other subsidies on production		

(<sup>56</sup>) (cf. ESA 2010, 4.145.-4.167.)

(57) https://agriculture.ec.europa.eu/data-and-analysis/farm-structures-and-economics/fadn\_en

FADN/FSDN Category of subsidies			ESA/EAA Category of subsidies
	DECOUPLED PAYMENTS		DECOUPLED PAYMENTS
Code	Description	Code	Description
1300	Complementary redistributive income support for sustainability	D.39	Other subsidies on production
1400	Schemes for the climate, the environment and animal welfare (eco-schemes)	D.39	Other subsidies on production
1600	Complementary income support for young farmers	D.9	Investment grants/Other capital transfer
1700	Payments for small farmers	D.39	Other subsidies on production
Coupli Cop (ce	ED SUPPORT reals, oilseeds and protein crops)	Couple Cop (ce	ED SUPPORT ereals, oilseeds and protein crops)
23111	Cereals	D.31	Subsidies on products
23112	Oilseeds	D.31	Subsidies on products
23114	Protein crops & grain legumes	D.31	Subsidies on products
2312	Potatoes	D.31	Subsidies on products
23121	of which potatoes for starch	D.31	Subsidies on products
2313	Sugar beet	D.31	Subsidies on products
Industr	ial crops	Industr	ial crops
23141	Flax	D.31	Subsidies on products
23142	Hemp	D.31	Subsidies on products
23143	Hops	D.31	Subsidies on products
23144	Sugar cane	D.31	Subsidies on products
23145	Chicory	D.31	Subsidies on products
23149	Other industrial crops	D.31	Subsidies on products
2315	Vegetables	D.31	Subsidies on products
2316	Fallow land	D.31	Subsidies on products
2317	Rice	D.31	Subsidies on products
2319	Arable crops not defined	D.31	Subsidies on products
2320	Permanent grassland	D.31	Subsidies on products
2321	Dried fodder	D.31	Subsidies on products
2322	Crop specific payment for cotton	D.31	Subsidies on products
2323	National restructuring programme for the cotton sector	D.31	Subsidies on products
2324	Seed production	D.31	Subsidies on products
Permar	nent crops	Permar	nent crops**
23311	Berries	D.31	Subsidies on products
23312	Nuts	D.31	Subsidies on products
2332	Pome and stone fruit	D.31	Subsidies on products

	FADN/FSDN Category of subsidies	ESA/EAA Category of subsidies	
	DECOUPLED PAYMENTS		DECOUPLED PAYMENTS
Code	Description	Code	Description
2333	Citrus plantations	D.31	Subsidies on products
2334	Olive plantations- olive oil and table olives	D.31	Subsidies on products
2335	Vineyards	D.31	Subsidies on products
2339	Permanent crops not mentioned elsewhere	D.31	Subsidies on products
Animal	s	Animal	s
2341	Dairy	D.31	Subsidies on products
2342	Beef and veal	D.31	Subsidies on products
2343	Cattle (type not specified)	D.31	Subsidies on products
2344	Sheep and goat	D.31	Subsidies on products
2345	Pigs and poultry	D.31	Subsidies on products
2346	Silkworms	D.31	Subsidies on products
2347	Apiculture products	D.31	Subsidies on products
2349	Animals not mentioned elsewhere	D.31	Subsidies on products
2410	Short rotation coppices	D.31	Subsidies on products
2490	Other coupled payments not mentioned elsewhere	D.31	Subsidies on products
GRANT	S AND SUBSIDIES OF EXCETIONAL CHARACTER	3	
Grants	and subsidies of exceptional character	Grants	and subsidies of exceptional character
2810	Disaster payments	D.39	Other subsidies on production
2890	Other grants and subsidies of exceptional character	D.39	Other subsidies on production
2900	Other direct payments not mentioned elsewhere	D.39	Other subsidies on production in case it is relevant in EAA
RURAL	DEVELOPMENT		
3100	Investment, including in irrigation	D.92	Investment grants except concerning the irrigation
3200	Setting-up of young farmers and new farmers and rural business start-up	D.92	Investment grants
3300	Agri-environment and animal welfare payments	D.39	Other subsidies on production
3310	Management commitments (environmental, climate-related and other) (excluding animal welfare and organic farming)	D.92	Investment grants
3320	Animal welfare payments	D.39	Other subsidies on production
3350	Organic farming	D.39	Other subsidies on production

	FADN/FSDN Category of subsidies	DN/FSDN ESA/EAA ry of subsidies Category of subsidies			
	DECOUPLED PAYMENTS		DECOUPLED PAYMENTS		
Code	Description	Code	Description		
3400	Area-specific disadvantages resulting from certain mandatory requirements (e.g. Natura 2000, Water Framework Directive)	D.39	Other subsidies on production		
3500	Natural or other area-specific constraints	D.39	Other subsidies on production		
Forestr	y / non-productive investments				
3610	Investments in forest area development and improvement of the viability of forests		Not registered in the EAA.		
3620	Natura 2000 payments for forestry and forest-environmental and climate services and forest conservation support		Not registered in the EAA.		
3750	Support to restoring agricultural production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions	D.39	Other subsidies on production		
3760	Risk management tools	D.31	Subsidies on products		
3900	Other payments for rural development	D.39	Other subsidies on production		
GRANT	S AND SUBSIDIES ON COSTS				
4100	Wages and social security	D.39	Other subsidies on production		
4200	Motor fuels		Not registered in the EAA, only by valuation of IC		
Livesto	ck	Livesto	ck		
4310	Feed for grazing livestock		Not registered in the EAA, only by valuation of IC		
4320	Feed for pigs and poultry		Not registered in the EAA, only by valuation of IC		
4330	Other livestock costs		Not registered in the EAA, only by valuation of IC		
Crop		Crop			
4410	Seeds		Not registered in the EAA, only by valuation of IC		
4420	Fertilisers		Not registered in the EAA, only by valuation of IC		
4430	Crop protection		Not registered in the EAA, only by valuation of IC		
4440	Other specific crop costs		Not registered in the EAA, only by valuation of IC		
	Farming overheads				

	FADN/FSDN Category of subsidies		ESA/EAA Category of subsidies
	DECOUPLED PAYMENTS		DECOUPLED PAYMENTS
Code	Description	Code	Description
4510	Electricity		Not registered in the EAA, only by valuation of IC
4520	Heating fuels total		Not registered in the EAA, only by valuation of IC
4521	of which natural gas and manufactured gases		Not registered in the EAA, only by valuation of IC
4522	of which oil and petroleum products		Not registered in the EAA, only by valuation of IC
4523	of which solid fossil fuels		Not registered in the EAA, only by valuation of IC
4524	of which renewable fuels		Not registered in the EAA, only by valuation of IC
4530	Water		Not registered in the EAA, only by valuation of IC
4540	Insurance		Not registered in the EAA, only by valuation of IC
4550	Interest	D.39	Other subsidies on production
4600	Supports for other gainful activity (OGA)		Not registered in the EAA, only by valuation of IC, in case it is relevant in EAA
4900	Other costs		Not registered in the EAA, only by valuation of IC
Grants	and subsidies on livestock purchases	Grants	and subsidies on livestock purchases
5100	Dairy purchases	D.92	Investment grants
5200	Beef purchases	D.92	Investment grants
5300	Sheep and goat purchases	D.92	Investment grants
5400	Pigs and poultry purchases	D.92	Investment grants
5900	Other animals purchases	D.92	Investment grants
9000	Differences from previous accounting years		Not applicable

Source of the items concerning FADN Regulation (EU) 2015/220.

\*According to Reg. 138/2004, <sup>2</sup> other gainful activities" are out of scope of the EAA, unless they are carried out as inseparable nonagricultural activities. In that case, subsidies aimed to reduce the costs of these kind of activity are taking into account during the valuation of IC.

\*\* Subsidies on permanent crops can be subsidies on products (D.31) or capital transfers (D.9) depending on the aim of the measure. - 2810 Disaster payments: classification depends on whether these are paid for losses in inventories (recurrent losses: other subsidies on production) or capital goods (other capital transfers; see <u>Box 23</u> subheading recording of payments for compensating for losses) - 3750 Support to restoring agricultural production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions and 3900 Other payments for rural development: depends on the type of measure, could also be capital transfers

- grants and subsidies on costs: depends on the type of measure, could also be classified as other subsidies on production

- grants and subsidies on livestock purchases: the classification depend on the type of animal (inventory or asset)

3.88. The only capital transfers recorded in the EAA are receivable capital transfers, i.e. investment grants and other capital transfers. These distributive transactions are recorded in the capital account (cf. 1.41 and 1.48).

#### **BOX 74 DEFINITION OF CAPITAL TRANSFERS (D.9)**

According to ESA 2010, capital transfers require the acquisition or disposal of an asset, or assets, by at least one of the parties to the transaction. Whether made in cash or in kind, they result in a commensurate change in the financial, or non-financial, assets shown in the balance sheets of one or both parties to the transaction (see ESA 2010, 4.145). Capital transfers include capital taxes (D.91), investment grants (D.92) and other capital transfers (D.99) (see ESA 2010, 4.147).

## 3.7.1 Investment grants

3.89. Investment grants are capital transfers, in cash or kind, effected by general government or the rest of the world to other resident or non-resident institutional units with the aim of financing, in part or in full, the cost of acquiring fixed capital goods (cf. ESA 2010, 4.152). Investment grants from the rest of the world comprise those granted directly by the institutions of the European Union via the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD).

#### **BOX 75 USE OF INVESTMENT GRANT**

The recipients are obliged to use investment grants for the purposes of gross fixed capital formation, and the grants are often tied to specific investment projects (2008 SNA, 10.208).

3.90. Interest subsidies are not included under investment grants (cf. 3.064), even if they are intended to facilitate investment transactions. It should be remembered, however, that if a grant also contributes to financing debt retirement and the payment of interest on the capital and if it is not possible to separate it from these two components, then the grant should be recorded in its entirety as an investment grant.

3.91. The most important types of other grants made by the EAGF, EAFRD and investment grants for agriculture are:

- grants for restructuring orchards or vineyards, in so far as they are the subject of a replanting obligation (cf. 4.067),
- reimbursement, for account of general government, of loans contracted by production units to finance their investment,
- start-up grants to young farmers to help them finance the acquisition of assets.

3.92. Investment grants in cash should be recorded when payment is due to be made. Investment grants in kind are recorded when the ownership of the asset is transferred (cf. ESA 2010, 4.162).

# 3.7.2 Other capital transfers

3.93. Other capital transfers cover transfers other than investment grants and capital taxes which do not themselves redistribute income but redistribute saving or wealth among the different sectors or subsectors of the economy or the rest of the world. They can be made in cash or in kind (cases of debt assumption or debt cancellation) and correspond to voluntary transfers of wealth (ESA 2010, 4.164).

3.94. Other capital transfers differ from investment grants in two aspects:

- only general government may pay out investment grants whereas all institutional units may pay out other capital transfers,
- investment grants are limited to payments associated with the acquisition of a fixed asset whereas other capital transfers can be linked to any form of transfer of saving or assets between units.

3.95. Other capital transfers may take the form of compensation, by general government or by the rest of the world, to owners of capital goods that had been destroyed by acts of war or natural disasters, such as floods, etc. They also include transfers from general government to cover losses accumulated over several financial years or exceptional losses from causes beyond the control of the enterprise (cf. ESA 2010, 4.165).

3.96. In the case of agriculture, other capital transfers also include:

- grants for the permanent abandonment of orchards or vineyards,
- grants for the cessation or reduction of milk production (in so far as they affect, explicitly or implicitly, the value of quotas),
  compensation for exceptional and catastrophic losses of fixed capital goods used in the production of agricultural goods (e.g. animals and equipment) (cf. 2.045 and 3.067),
- start-up grants to young farmers for purposes other than financing the acquisition of assets,
- grants to compensate for reduction of the value of assets or to reduce debts,

major payments in compensation for damage or injuries not covered by insurance policies (except payments by general government or by the rest of the world described in ESA 2010 under 4.165 (a) awarded by courts of law or settled out of court, for example payments for compensation for damage caused by major explosions, oil spillages, etc. (ESA 2010, 4.165 (h).

#### **BOX 76 MILK QUOTAS IN THE EU**

It should be noted concerning the second item in the list above that the milk quotas were removed in the EU in 2015 (see <u>3.32</u>).

3.97. Other capital transfers in cash are recorded when payment is due (and, in the case of transfers in kind, when ownership of the asset is transferred or when the debt is cancelled by the creditor).

## 3.7.3 Consumption of fixed capital (58)

3.98. The foreseeable wear and tear and obsolescence of fixed capital goods over the accounting period represent a charge which is implicit so long as the item is not replaced by a new acquisition. This wear and tear and obsolescence are measured by *consumption of* fixed capital (*P.51.c*). Its inclusion under 'uses' in the production account allows expenditure on fixed capital formation to be distributed over the entire period of use.

3.99. If the economic life of the means of production is more than one year, the consumption of fixed capital represents the amount of fixed capital used up in the production process during the accounting period as a result of normal wear and tear and foreseeable obsolescence (<sup>59</sup>). If, on the other hand, the means of production used have an economic life of less than one year, the wear and tear is recorded as intermediate consumption.

3.100. All fixed capital goods (i.e. products) are the subject of consumption of fixed capital (although some flexibility is required in specific cases; cf. 3.105). This includes *produced non-financial* fixed assets, major improvements to non-produced assets and the costs associated with the transfer of ownership. The consumption of fixed capital is not calculated for either *inventories* or work-in-progress, or for non-produced assets such as land, underground deposits and patented assets.

#### **BOX 77 ANIMALS CLASSED AS FIXED ASSETS**

Consumption of fixed capital should not be calculated for animals classed as fixed assets (cf. 3.105 and 3.106).

(58) (cf. ESA 2010, 3.139.-3.145)

<sup>(&</sup>lt;sup>59</sup>) Including a provision for losses of fixed capital goods as a result of accidental damage which can be insured against. The value of these provisions to be recorded is the value of the net premiums paid in respect of insured fixed capital goods.

3.101. The consumption of fixed capital is only one component of the change in the value of assets (together with GFCF, other changes in volume and nominal holding gains (net of losses); cf. 2.134). In particular, the consumption of fixed capital does not include other changes in the volume of assets (other than those due to GFCF):

- exceptional losses due to disasters (earthquakes, war, drought, epidemics, etc.),
- unforeseeable obsolescence, which is the difference between provisions made in the consumption of fixed capital for normal wear and tear and actual losses, accidental events causing depreciation greater than that accounted for on the basis of the anticipated consumption of fixed capital,
- changes in the classification of fixed assets, i.e. changes in their economic use, as in the case of farming land or buildings converted for private use or a different economic use.

3.102. The consumption of fixed capital, which has to be distinguished from depreciation calculated for fiscal purposes and that appearing in the company accounts, should be evaluated on the basis of stocks of fixed capital goods and the (average) probable economic life of the various categories of goods in question. If no information on the stock of fixed capital goods is available, it is recommended that it be calculated using the perpetual inventory method and that its acquisition price in the reference period be evaluated (i.e. the replacement value of the assets during the reference year, not on the basis of historic values). The replacement value is ascertained from the prices which holders have to pay, during any given reference period, to replace a fixed capital good by a new one which resembles it as closely as possible. It is necessary to proceed in this manner in order to calculate net domestic product correctly.

3.103. The consumption of fixed capital is calculated using the linear depreciation method, i.e. by attributing the value of the fixed capital good in question evenly throughout the period in which it is used. The rate of depreciation is defined by the formula 100/n, where 'n' represents the probable economic life of this category in years ('n' may vary from one country to another and over time). The rate of depreciation can, in certain cases, be geometric. In view of the use of the current replacement price and the fixed rate of consumption of fixed capital, the consumption of fixed capital varies from year to year unless the purchaser prices remain unchanged throughout the entire normal economic life of the asset.

3.104. The consumption of fixed capital in the form of the costs associated with the transfer of the ownership of produced *non-financial* assets should be calculated on the basis of an average economic life, conventionally put at one year.

3.105. The consumption of fixed capital in animals corresponds to the anticipated decline in the productivity of animals if they are used for production purposes (milk, wool, etc.), which is reflected in the current value of future income obtainable form these animals. As the value of future income from productive animals declines over time, the animals will have to become the object of consumption of fixed capital. Given the practical difficulties of calculating the consumption of fixed capital for this type of asset, however, *in line with ESA 2010* the consumption of fixed capital should not be calculated for productive animals. The decision to exclude animals from this calculation was based on the following considerations:

- depreciation in terms of productivity and economic value is linked to age but is not a direct, regular and continuous function of it, as is otherwise implicitly the case for depreciation,
- the withdrawal of animals from the productive herd may be a function of the economic environment (changes in the prices obtainable for slaughtered animals and the prices of animal feedingstuffs, etc.).

3.106. Although these considerations are not a hindrance to calculating the consumption of fixed capital for livestock, they do make such calculations very complicated in terms of adequate definitions of average life and rates of consumption of fixed capital. Otherwise, it would be difficult to ensure consistency between forecast and actual average depreciation of animals. This treatment also ensures compatibility between the EAA and the ESA 2010 (cf. ESA 2010, 3.140) and microeconomic accounts of the farm accountancy data network and obviates the need to distinguish between livestock having the character of fixed capital goods and livestock having the character of stock.

# **Agricultural Labour Input**

This chapter provides detailed methodological recommendations to compile agricultural labour input (ALI) statistics beyond the points laid down in the EAA Regulation (Annex I, chapter IV). In this sense, section 4.1 reflects the points exactly as in the Regulation while sections 4.2, 4.3 and 4.4 elaborate the above-mentioned methodological recommendations. These points follow the same logic as in the Regulation but they are not parts of the legal text.

# 4.1 Agricultural Labour Input in the EAA Regulation

4.01. Agricultural employment covers all persons—both employees and self-employed—providing salaried and nonsalaried labour input to the resident units performing characteristic activities (agricultural and inseparable non-agricultural secondary activities) of the agricultural industry of the EAA. All persons of retiring age who continue to work on the holding are included in agricultural employment. Persons having not reached school-leaving age are not included.

4.02. Employees are defined as all persons who, by agreement, work for another resident institutional unit (which is an agricultural unit) and receive a remuneration (recorded as compensation of employees, cf. Section C of Chapter III). The labour input provided by employees is referred to as salaried labour input. By convention, labour of non-family workers is classified as salaried labour input. When an agricultural unit is organised as a conventional company (cf. 5.09), all the labour input performed is classified as salaried labour input.

4.03. Self-employed persons are defined as persons who are the sole owners, or joint owners, of the unincorporated enterprises in which they work. The labour input provided by self-employed persons is referred to as non-salaried labour input. Members of the holder's family who do not receive a compensation which is predefined and calculated according to their actual work are classified as self-employed.

4.04. In the case of specific companies (cf. Section B of Chapter V), the labour input of workers is treated in the same manner as in unincorporated enterprises (sole proprietorships). The directors/shareholders share in the mixed income of the unit (non-salaried labour input), whilst their employees receive a remuneration (salaried labour input).

4.05. Total hours worked represent the aggregate number of hours actually worked as an employee or self-employed for resident agricultural units, during the accounting period.

4.06. A description of what total hours worked include and exclude can be found in ESA 2010 (11.27 and 11.28). Total hours worked do not cover work for the private household of the holder or manager.

4.07. Annual work units (AWUs) are defined as full-time equivalent employment (corresponding to the number of full-time equivalent jobs), i.e. as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory.

4.08. One person cannot represent more than one AWU. This constraint holds even if someone is working in the agricultural industry for more than the number of hours defining full time.

4.09. The agricultural labour input of persons who work less than full time on agricultural holdings is calculated as the quotient of the number of hours actually worked (per week or per year) and the number of hours actually worked (per week or per year) in a full-time job.

4.10. The number of hours actually worked in a full-time job is not necessarily the same for all categories of labour. It is possible that the number of hours comprising a full-time job used for self-employed persons is greater than that used for employees. For in the latter case, the maximum number of hours to be worked are laid down in a contract.

#### BOX 78 ANNUAL FULL-TIME JOB HOURS PER AWU IN AGRICULTURE BY COUNTRIES

The number of hours comprising a 'full-time job' also varies from one country to another. Some countries do not use the same full time for all employment, but different for employees and for self-employed.

#### TABLE 16

# Annual full-time job hours per AWU in agriculture by countries

BE: 1800	BG: 1856	CZ: 1800	DK: 1665	DE: 1800	EE: 1800	IE: 1800	EL: 2200
ES: 1800	FR: 1970	HR: 1800	IT: 1925	CY: 1960	LV: 1840	LT: 2016	LU: 2200
HU: 1800	MT: 1800	NL:1900	AT: 2000	PL: 2120	PT: 1920	RO: 1800	SL: 1800
SK: 1800	FI: 1900	SE: 1800	IS:1800	NO: 1845	CH: 2800		

\* AT: 2000 non-salaried/self-employed; \*\* FR: 1970 non-salaried/self-employed; \*\*\* CH: Records overtime in the annual full-time job, thus the number of hours is very high as compared to the rest of countries.

4.11. The number of hours worked by a person is not to be adjusted by some coefficient because of age (i.e. under 16 or over 65) or gender. Equality must be applied. 'Full-time' is determined by the number of hours worked and not as an evaluation of an amount and/or a quality produced.

4.12. Unless there are reasons for preferring alternative sources, the AWU representing full-time work in agriculture should be based on the current definition in the Community surveys on the structure of agricultural holdings, as the minimum hours required by the national provisions governing contracts of employment. If these do not indicate the number of annual hours then 1 800 hours is to be taken as the minimum figure (225 working days of eight hours per day).

#### **BOX 79 INFORMATION ABOUT THE NEXT SECTIONS CONCERNING ALI**

As stated in the introduction to this chapter, the next sections (4.2, 4.3 and 4.4) and points below (4.13 to 4.69) elaborate on methodological guidelines to compile ALI statistics. These points are not parts of the EAA Regulation. This manual has included them as points following the same logic and structure as other chapter in the Regulation but they do not contain a legal mandate.

# 4.2 General features of agricultural labour input data

## 4.2.1 Introduction

4.13. Labour is one of the factors of production, alongside land and capital. Comparisons between countries are more useful for some purposes when aggregates in the EAA are considered in relation to labour input variables. Labour input variables are also needed to compute productivity measures. Comparable and complete data of the volume of labour in the agricultural industry further serve as a basis for analyses, forecasts, policy making and policy monitoring.

4.14. Aggregates in the EAA are considered in relation to the agricultural labour input variables. In order to establish the correct measure of the income indicators (see Chapter 5 which presents the main agricultural income indicators), definitions of labour inputs have to be consistent with the concepts of EAA.

4.15. This chapter sets out general criteria concerning activities, working time and units as regards agricultural labour input. This is particularly challenging due to the remarkable differences in the structure of the agricultural industry among EU Member States.

# **4.3** Definitions, methods and features of agricultural labour input statistics

## 4.3.1 The definition of agricultural labour input

4.16. Agricultural labour input includes the total amount of work actually performed within the production boundary of EAA. That means ALI should include all work actually performed in connection with the production from agricultural and inseparable non-agricultural activities of the units defining that industry. Chapter I (1.20 to 1.32) sets out the scope of the agricultural industry in which this labour operates.

4.17. The total amount of work actually performed within the production boundary of EAA is defined through the total number of hours worked in agriculture. According to ESA 2010, total hours worked represents the aggregate number of hours actually worked as an employee or a self-employed person during the accounting period, when their output is within the production boundary (cf. ESA 2010, 11.27). In the EAA, the accounting period is the calendar year while the production boundary is the agricultural industry.

4.18. All persons of retiring age who continue to work on the holding are included in agricultural employment. Persons having not reached school-leaving age are not included (cf. 4.01). If national legislation does not indicate the minimum age of full-time and part-time compulsory education, 15 years is to be taken as the conventional school-leaving age, which is in line with Minimum Age Convention from ILO (<sup>60</sup>).

4.19. Statistics for hours actually worked should include (ESA 2010 11.28 (3):

- hours actually worked during normal periods of work and directly contributing to production;
- paid time spent on training;
- time worked in addition to hours worked during normal periods of work, known as overtime. Note that overtime hours worked shall be included even if they are unpaid;
- time spent working on tasks such as the preparation of the workplace, repairs and maintenance, preparation and cleaning of tools, and the preparation of receipts, time sheets and reports;
- time spent waiting or standing-by during short-term disruptions during the workday for such reasons as lack of supply of work, breakdown of machinery, or accidents, or time spent at the place of work during which no work is done but for which payment is made under a guaranteed employment contract;
- time corresponding to short periods of rest during the workday, including tea and coffee breaks;

(60) Convention C138–Minimum Age Convention, 1973 (No. 138) (ilo.org)

- on-call work arrangements. Where this occurs away from the work-place, for example at home, the time is included in
  hours actually worked according to the degree to which the person's non-work activities and movements are restricted;
- hours worked by defence force personnel, including conscripts, shall be included even if they are outside the scope of a country's labour force survey.

#### **BOX 80 WORKING HOURS DEFINED BY ESA VS EAA**

Point 4.19 of this manual describes the categories included in hours actually worked according to ESA 2010. The last point of the list, concerning defence force personnel may not be relevant for the EAA.

4.20. Statistics for hours actually worked should exclude (ESA 2010 11.28 (4):

- hours which are paid but not worked, such as paid annual leave, paid public holidays, paid sick-leave, parental leave, strikes, 'short leave' for medical visits etc., bad weather shutdowns;
- breaks for meals;
- time spent on travel between home and the place of work, although any work undertaken while commuting shall be included;
- education other than training.

## 4.3.2 The unit of measurement

4.21. The EAA Regulation provides for that labour input is measured in AWU:

- The AWU are computed as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory (cf. 4.07).
- The AWU for persons working less than full-time are computed in the same way: number of hours actually worked per week or per year divided by number of hours actually worked per week or per year in a full-time job (cf. 4.09).
- One person cannot represent more than one AWU even if someone is working for more than the number of hours defining full time (4.08).

#### **BOX 81 DEFINITION OF AWU**

In the EAA Regulation (cf. 4.07) AWUs are defined as full-time equivalent employment (corresponding to the number of full-time equivalent jobs), i.e. as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory.

Similarly, in the ESA 2010 (11.32), full-time equivalent employment is defined as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory. The ESA 2010 also specifies that full-time equivalent employment equals the number of full-time equivalent jobs.

## 4.3.3 The method of measurement

4.22. The method of measurement depends on particularities or characteristics of the employment in a country. Each country should consider those features in the application of the relevant methods.

4.23. The number of hours actually worked in a full-time job is not necessarily the same for all categories of labour. It is possible that the number of hours comprising a 'full-time job' used for self-employed persons is greater than that used for employees. For in the latter case, the maximum number of hours to be worked are laid down in a contract. It is also the case

that the number of hours comprising a 'full-time job' is partly determined by the social factors at play in the country concerned. Together these reasons explain why the definition of an AWU often varies from one Member State to another.

4.24. The theoretical and practical definitions of the AWU imply that the number of hours comprising an AWU can change over time, that it is not necessarily the same for all sectors of the economy within any given country (the coefficient used to convert hours into AWU or vice-versa may be different in agriculture from the average of the whole economy) and that it is likely to vary from one country to another.

4.25. A revision in the number of hours defining an AWU can create a discontinuity in the time series, especially if this methodological change is introduced in an abrupt manner. It could result in an underestimate/overestimate of the rate of change in the volume of agricultural labour for the given year, with the associated impact on the estimates of agricultural income per AWU.

4.26. Changes in the definition of AWU should be introduced in a way that they do not represent a discontinuity in the agricultural labour input time series. For these purposes, when such change occurs, the back data could be revised distributing the impact of the changes throughout the previous years. This operation could be performed by computing a chain-link index and applying the yearly rates of change to each ALI value.

4.27. The revisions should go as far back as the beginning of the series.

4.28. In case introduction of such 'definitional' changes step-wise is not feasible, the data should be flagged as 'break in the series'. The metadata should explain the changes in the definition of the AWU.

#### BOX 82 EXAMPLE: CHANGE IN THE DEFINITION OF THE AWU

This box provides example to the methodological constrain described in points 4.25–4.27. Namely, it shows how to recalculate the ALI series to avoid breaks when there is a change in its definition. In the example, the definition of an AWU changes in the following way:

- Year n to n+5: 1 AWU = 2000 working hours
- Year n+6 to n+10: 1 AWU = 1800 working hours

#### TABLE 17

# Example on the recalculation of AWU in case of structural change

Veeve	Definition	s of 1 AWU	Chain indices	Recalculated	
rears	2000 hours	1800 hours	(previous year =100)	AWU=1800 hours	
n	150.00			166.67	
n+1	148.50		99.00	165.00	
n+2	147.00		98.99	163.33	
n+3	145.50		98.98	161.67	
n+4	144.00		98.97	160.00	
n+5	142.50	158.33	98.96	158.33	
n+6		156.67	98.95	156.67	
n+7		155.00	98.94	155.00	
n+8		153.33	98.92	153.33	
n+9		151.67	98.91	151.67	
n+10		150.00	98.90	150.00	

Labour input for n+5 should be calculated in both AWUs defined as 2000 hours/year and as 1800 hours/ year. Chain indices are calculated until the year n+5 based on 1 AWU=2000 hours, then 1 AWU = 1800. Namely, the chain index for n+5=142.50/144.00\*100=98.97; and for n+6=156.67/158.33\*100=98.95.

**Recalculation of AWU for the back series** 

Year n+4 (1800 hours) = Year n+5 (1800 hours)/Chain index (n+5)\*100 = 158.33/98.96\*100 = 160.00; Year n+3 (1800 hours) = 160.00/98.97\*100 = 161.67 and so on. For Years after n+5, AWUs remain the same (as it is in 1800 AWUs).

Using this method, the income indicators (as defined in chapter 6), to which the changes in labour input figures are related, are not affected by the effects of large and sudden changes in the definition of an AWU.

# 4.3.4 The definitions of salaried and non-salaried labour

4.29. Agricultural labour input is classified according to non-salaried, salaried and total agricultural labour input. This information is required to compute the income indicators described in 5.12. The ESA classifies labour input into employee and self-employed. Even if those concepts are laid down in the EAA Regulation (cf. 4.02 and 4.03), ALI data are required as salaried and non-salaried.

#### **BOX 83 FORMER CLASSIFICATION: FAMILY / NON-FAMILY**

Historically, labour input data was based on family links with the holder (family and non-family labour). In other agricultural statistics, such as the IFS, this is still the case. In the context of the EAA, the classification of agricultural labour is made on the basis of employees and self-employed (and required as salaried / non-salaried work). That was the case already in 2004, when the EAA Regulation entered into force.

4.30. Employees are defined as persons who, by agreement, work for a resident institutional unit and receive a remuneration recorded as compensation of employees (ESA 2010, 11.12). The labour input provided by employees is referred to as salaried labour input. By convention, labour of non-family workers is classified as salaried labour input. In the context of the EAA, the institutional units within the scope are agricultural units. When an agricultural unit is organised as a conventional company (cf. 5.09), all the labour input performed is classified as salaried labour input (cf. 4.02).

#### **BOX 84 CIVIL SERVANTS AND OTHER GOVERNMENT EMPLOYEES**

Civil servants and other government employees whose terms and conditions of employment are laid down by public law (ESA 11.13) and working in an agricultural unit should be considered as salaried labour input.

4.31. Self-employed persons are defined as persons who are the sole owners, or joint owners, of the unincorporated enterprises in which they work (ESA 2010,11.15). The labour input provided by self-employed persons is referred to as non-salaried labour input. Members of the holder's family who do not receive a compensation which is predefined and calculated according to their actual work are classified as self-employed (cf. 4.03).

#### **BOX 85 VOLUNTARY WORK**

Information on voluntary work may be available from the sources which are a basis for the EAA, such as the IFS which is usually the main source for ALI in the EAA. This type of work should be recorded as non-salaried work. According to ESA, unpaid voluntary workers are included with self-employed persons if their volunteer activities result in goods; for example the construction of a dwelling, church or other building. But if their volunteer activities result in services, for example caretaking or cleaning without payment, they are not included under employment, because those volunteer services are excluded from production (ESA 11.16).

In cases where this information is not available from existing data sources, it should not be considered for the purpose of compiling EAA.

4.32. Total agricultural labour input is the sum of the labour input of both the non-salaried and salaried labour input in the agricultural industry.

## 4.3.5 The treatment of the labour input in various units

4.33. There are three general types of enterprise within the boundary of agricultural industry: sole proprietorships or family holdings (unincorporated enterprises), "conventional" companies, companies specific to the agricultural industry (cf. 5.09.).

4.34. The labour input of these three general types of enterprise need to be classified as either "non-salaried" or "salaried" work.

4.35. In the case of unincorporated enterprises (sole proprietorships or family holdings), the labour of the holder should be treated as non-salaried labour input. The labour input of family workers may be considered salaried or non-salaried:

- If the compensation is predefined and calculated according to their actual work rather than according to the income generated on the holding, then such labour should be considered salaried labour input.
- If their income is a share of the income generated by the holding, then their remuneration will be recorded as part of mixed income and the labour input as non-salaried.

4.36. In the case of "conventional" companies, all the labour input performed on the holding would be considered as salaried labour input.

4.37. In the case of "specific" companies, the labour input of workers would generally be treated in the same manner as sole proprietorships. For example, a specific company might employ salaried workers (salaried labour input), whilst the directors / shareholders share in the mixed income of the unit (non-salaried labour input). Persons whose income depend on the income generated by the holding would be non-salaried.

4.38. There should be coherence between the treatment of the compensation of employees and the classification of salaried labour input in these various forms of agricultural unit. Where the compensation of employees is calculated for various forms of enterprise, then the corresponding part of the agricultural labour of these enterprises must be recorded as salaried labour input.

# 4.4 Source of labour data

4.39. The Regulation does not set out the data source or data sources that are to be used to compile ALI. However, this section describes data sources that may be used for those purposes and provides guidelines to carry out this exercise. Countries can use other data sources that ensure quality of the data. In most cases, the main source to compile ALI are the integrated farm statistics (IFS). The first sub-section below sets out the ways in which IFS differs from the requirements set for ALI statistics and provides recommendations to address these issues. Furthermore, national accounts, labour force survey,

administrative records or Farm Accountancy Data Network (FADN) could be considered for compiling ALI as a complement to the IFS.

# 4.4.1 Integrated Farm Statistics – IFS

4.40. The IFS provide micro data at farm level. In this sense, every 10 years, EU countries collect data on all farms and farmers, as advised by the Food and Agriculture Organization of the United Nations. This statistical operation is called the agricultural census, which is complemented by sample data collections organised every 3-4 years in-between. A module of this survey contains questions on labour input and is collected three times per decade.

#### **BOX 86 FARM STRUCTURE DATA, CURRENTLY, INTEGRATED FARM STATISTICS**

The EAA Regulation refers to structural statistics related to farms and farmers. Currently, those statistics are provided under the umbrella of the IFS, formerly known as farm structure surveys (FSS). For more details see: Regulation (EU) 2018/1091 of the European Parliament and of the Council of 18 July 2018 on integrated farm statistics: <u>https://eur-lex.europa.eu/legal-content/EN/TXT/</u>HTML/?uri=CELEX:32018R1091#d1e442-1-1

Data on farm structure has been collected at regular intervals at least since 1966. The main aim of the IFS is to provide comparable data on the agricultural holdings of the EU. The IFS 2023 handbook introduces its current methodology: <u>https://wikis.ec.europa.eu/display/IFS/</u>

4.41. In years when the labour force module of the IFS is not performed, there may be a structure survey on agricultural holdings carried out for national purposes specific to labour. The scope and the substance of these national surveys are partly the same as for the EU-level IFS. If they exist, those surveys may be used to compile agricultural labour input statistics in years when IFS data are not available.

4.42. The IFS gather information on the volume of agricultural labour and measures this in terms of AWU. EAA has adopted the definition of the AWU that is used in the IFS.

4.43. Farm structure statistics may not collect data on non-salaried / salaried labour input. In such case, the volume of agricultural labour recorded as family and non-family should be adjusted to conform with ALI requirements. Member States are requested to inform Eurostat of the methods and figures used in such adjustments. The objective is to record that part of the family employed on the holding as salaried labour (as explained in point 4.33 above). All non-family labour is also identified as salaried labour input by convention. As a consequence, the total wage bill for salaried labour is synonymous with the item compensation of employees in the EAA.

4.44. In general, the coverage of agriculture in the EAA corresponds well to the scope of the IFS. There are some differences explained in the Box 87 Coverage and labour concepts in IFS vs EAA below. The points 4.45 to 4.49 provide recommendations to address the issues stemming from those differences.

#### **BOX 87 COVERAGE AND LABOUR CONCEPTS IN IFS VS EAA**

#### **Coverage in IFS vs EAA**

In the IFS (Reg. (EU) 2018/1091), the whole frame is formed by the agricultural holding, which is a single unit, both technically and economically, operating under a single management and which undertakes economic activities within the economic territory either as its primary or secondary activity.

The EAA have a definition of agricultural activity, derived from the NACE Rev. 2 Division 01. The IFS is slightly smaller than EAA, more precisely, the IFS do not include the following activities:

- Activities of raising and breeding of semi-domesticated or other live animals except ostriches, emus, poultry, rabbits and other fur animals;
- Production of fur skins, reptile or bird skins from ranching operation;
- Operation of worm farms, land mollusc farms, snail farms etc;
- Raising of silk worms, production of silk worm cocoons;
- Raising and breeding of pet animals (except fish);
- Raising of other animals (NACE Rev. 2 01.49);
- Agricultural activities on a fee or contract basis (NACE Rev. 2 01.61);
- Support activities for animal production: agricultural and animal husbandry service activities (NACE Rev. 2 01.62);
- Post-harvest crop activities (NACE Rev. 2 01.63);
- Hunting, trapping and related service activities (NACE Rev. 2 01.7) and;
- Holdings producing farming goods only for its own subsistence, without market activity (NACE Rev. 2 T98.10)

#### Labour concepts in IFS vs EAA

In IFS, the term farm labour refers to direct labour i.e. persons directly employed by the holding. Within the farm labour on the holding, IFS distinguish the work of the manager, the work of the holder and their family members and non-family labour force directly employed by the holding (which is either regularly employed or non-regularly employed).

The distinction between family workers and employees does not follow the guidelines used in the EAA. In the EAA, if a family member receives a salary, they are considered as salaried, if not they are considered self-employed (non-salaried).

4.45. Member States using the IFS to supply ALI data for the EAA should estimate / impute the associated labour input for activities excluded from IFS but covered by EAA. As those activities contribute to the output of the agricultural industry under the framework of EAA. See the activities excluded from IFS in the Box 87 above.

4.46. The definition of "work which contributes to production" includes secondary non-agricultural activities that are inseparable from agricultural activity and excludes separable non-agricultural secondary activities.

4.47. There may be persons working on the holding carrying out "farm work" but employed by a third party or under mutual-aid arrangements (e.g. labour supplied by agricultural contractors or cooperatives). The IFS provide an estimate of the number of hours converted into numbers of days or weeks working full-time of this "farm work".

4.48. The EAA should use the threshold defined by the IFS, while exceptions to this recommendation should be justified. Units are included in the IFS if their agricultural activities are of a certain minimum size. The lower limit varies from one Member State to another. The value of agricultural output as recorded in the EAA could be more comprehensive than that which would have been taking the threshold from the IFS. In such case, the relevant labour input for the EAA should be (re) estimated to be as comprehensive.

#### **BOX 88 MINIMUM SIZE OF ACTIVITIES COVERED BY IFS**

Units are included in the IFS if their agricultural activities are of a certain minimum size, they meet at least one of the physical thresholds listed in Annex II of Regulation (EU) 2018/1091 with regard to the size of agricultural land or the number of livestock units. The data required by IFS shall cover 98 % of the total UAA (excluding kitchen gardens) and 98 % of the livestock units of each Member State. If the included units represent more than 98 % of the national agricultural production, measured by the Standard Output, Member States may reduce the frame, as long as the 98 % coverage of the total UAA (excluding kitchen gardens) and 98 % of the livestock units of the Member States is reached. Where the units, which meet at least one of the physical thresholds listed in Annex II of Reg. (EU) 2018/1091 does

not represent 98 % of the UAA and 98 % of the livestock units, Member States shall extend the frame of units included by the survey (see Regulation (EU) 2018/1091, Article 3 Coverage paragraph 1. – 4.). This requirement applies to the 2020 agricultural census but frame extension may not be mandatory in subsequent IFS data collections.

4.49. The period covered by the IFS does not always coincide with a calendar year (which is the reference in the EAA). The questions about the labour force module in the IFS refer to work performed in the 12-month period ending on a reference day within the reference year. This can be the period from April of one year to March of the next or from June of one year to May of the next. As it covers a complete agricultural production cycle, this difference with the EAA is not viewed as a problem.

## 4.4.2 Labour accounts – National Accounts employment data

4.50. The 2008 System of National Accounts is under review (<sup>61</sup>). The United Nations Statistical Commission officially launched the update process in March 2020 and the expected release of the revised standard is March 2025. While no changes in the scope and definition of employment types are foreseen, the SNA research agenda includes several issues that aim at enhancing labour market data in the core accounts. It also aims to highlight certain aspects of employment through supplementary tables or additional breakdowns. The revised System of National Accounts would include labour accounts as part of the central framework.

4.51. The labour accounts will apply the SNA production and residency conventions, i.e., the accounts will cover the activities of all establishments 'resident within the economic territory and engaged in the production of goods and services that fall within the scope of the national accounts production boundary.

4.52. The proposed labour accounts (<sup>62</sup>) will pull together in one place aggregates and concepts that are currently presented across different accounts and will complement them with additional items to allow for better analysis of the labour market.

4.53. There will be reference to the possibility of extending the accounts to also include elements that go beyond the boundaries of the SNA such as the relevance of unpaid household activities (in terms of hours worked).

4.54. The items presented in the labour market tables framework need to be completely aligned with existing national accounts definitions where they currently exist. They should complement these existing definitions with additional items (such as those for filled and vacant jobs) to provide a more complete and comprehensive picture of the labour market.

4.55. The labour market tables framework brings together in one place concepts that in the current SNA are presented across different accounts. These concepts are linked through a set of defined accounting identities and enable users to analyse the data through different economic perspectives such as payments from both an employer and employee perspective.

4.56. A number of countries already publish labour accounts. While countries have adopted slightly different approaches, broadly, labour accounts consist of four quadrant tables: jobs, persons (both employees and self-employed), volume (i.e. hours worked) and payments.

#### **BOX 89 COVERAGE IN LABOUR ACCOUNTS VS EAA**

The Labour Account provides a conceptual framework through which existing labour market data from diverse sources can be confronted and integrated, with the aim of producing a coherent and consistent set of labour market statistics. These statistics provide detailed information on various aspects of the

(<sup>61</sup>) Annex 0: Employment in National Accounts

<sup>(62) 2025</sup> SNA Chapter 16 Labour: Annotated Outline

labour market, linked to the information included in Supply and Use Tables (by industry as according to the National Accounts concepts).

The agricultural industry of the EAA differs in some respects from the branch as defined for national accounts purposes. The differences relate to the definition of both characteristic activities and units and they can be summarised as follows (see 1.93):

EAA agricultural industry = NA agricultural branch (NACE Rev. 2 Division 01)

- Production of units providing associated agricultural services other than agricultural contract work (i.e. the operation of irrigation systems)

- Units for which the agricultural activity represents solely a leisure activity and which are included in national accounts, cf. ESA 2010, 3.08

+ Production of units producing wine and olive oil (exclusively using grapes and olives grown by the same unit *including production of wine and olive oil by* grouping of producers, cooperatives, etc.)

+ Agricultural separable secondary activities of units whose principal activity is not agricultural (cf. 1.18).

### 4.4.3 EU Labour Force Survey (EU-LFS)

4.57. The EU labour force survey (EU-LFS) (<sup>63</sup>) is a comprehensive and well-established source for information on the composition and characteristics of the labour force. LFS include questions on the number of hours actually and usually worked in the reference period, i.e. questions concerning the differences between the time usually spent working and the time actually worked during the reference week.

4.58. Additional LFS questions concerning working time components such as hours worked at home, commuting time, short breaks, overtime and absences from work are also often available. International harmonisation is achieved by complying with definitions set out by the International Labour Organisation (ILO, 1982 and 2013), although sample selection, survey techniques, survey responses and the implementation of ILO concepts may vary between countries.

4.59. An advantage of the LFS is that it covers a broad range of employment situations, including the self-employed, unpaid family workers and informal employment, as well as collecting information on multiple-job holdings, hours usually and actually worked, and paid and unpaid overtime.

#### BOX 90 ESTIMATES OF TOTAL HOURS ACTUALLY WORKED USING EU-LFS

The estimation method generally consists of annualising average actual weekly hours worked derived from continuous surveys in all weeks of the calendar year (i.e. multiplying the number of self-reported actual hours worked in the reference week by the number of working weeks in a year) (<sup>64</sup>).

It assumes that full- and part-week absences and extra hours worked in the main and/or additional job/s are well captured in self-reported monthly or quarterly estimates of weekly actual hours worked averaged over the year.

For surveys with fixed monthly reference weeks (i.e. where the survey is not conducted continuously in all weeks of the month or the quarter but in a given week of the month), the method consists of averaging hours worked during those 12 reference weeks after applying adjustments for special events, such as holidays falling outside each reference week.

<sup>(63)</sup> EU-LFS-explanatory-notes-from-2017-onwards.pdf (europa.eu)

<sup>(64)</sup> A continuous labour force survey has the reference weeks spread uniformly throughout the year.

In addition, a number of additional adjustments should be made to correct for annual leave and public holidays, which are the most important reasons for work absences, followed by sickness leave.

# 4.4.4 Farm Accountancy Data Network (FADN)

4.60. Farm Accountancy Data Network (FADN), which is been converted those next years into the Farm Sustainability Data Network (FSDN), can provide useful additional data for the compilation of agricultural labour input, in particular to make the distinction between salaried and non-salaried annual work units. The use of FADN labour force data can be relevant, especially if labour force surveys do not cover completely the agricultural branch.

4.61. If FADN data is applied within EAA for the compilation of agricultural labour input, it is important to remain coherent with other application domains of FADN data within EAA, such as items of intermediate consumption and compensation of employees. The extrapolation methodology for labour data should be coherent as the extrapolation methodology used for other FADN data used for EAA. The coherence between salaried labour input and compensation of employees is an important issue to ensure data quality. Furthermore, it is necessary to take into account the aspects related to the different populations covered by EAA, IFS and FADN (cf. 4.62 and 4.63).

4.62. The first aspect deals with the reality that FADN covers a subset of agricultural holdings observed by IFS, as a minimum economic size is required by FADN, depending on each country, meaning that the lower threshold of holdings according to IFS definition has to be completed. The same gapfilling method applied for the other items using FADN as source should be applied here if possible. In any case, an analysis of the labour structure of the IFS population not covered by FADN will give sound knowledge about the structure of the smaller units (according to their smaller economic size), especially the distribution of family / non-family (as it can be recorded in IFS, cf. 4.43) in regard to the concerned farming types and regions (if those stratification characteristics enable a more precise gapfilling process). As a proxy, if the family portion of labour is overwhelming, it could be estimated that salaried labour is low or inexistent, so the whole labour force of the relevant subset/strata could be recorded as non-salaried.

4.63. The second aspect deals with the reality that neither FADN nor IFS cover some holdings performing specific agricultural activities, for example those specialised units mainly involved in agricultural contractor services (cf. 1.82 to 1.91), meaning that other data sources or assumptions have to be considered. If collected, specific IFS data can inform about labour force not directly employed by the holding. FADN can also provide data which can contribute to indirect approaches, as supply (as secondary activity) and use (purchases) of agricultural services are recorded in accounting data. With assumptions, output can be divided between intermediate consumption, compensation of employees and other uses and balancing item, leading finally to an estimation of the salaried labour force in specialised units. This indirect approach implies the use of other data sources (wage statistics, VAT administrative data, etc.). Depending on the availability of data sources, different combinations can be applied. In any case and if available, the Labour Force Survey should be the priority source for those cases.

4.64. The labour input involved in agricultural contractor services performed as secondary activity within the IFS boundary is already contained. Its structure (salaried / non-salaried) is already evaluated when using the IFS/LFS or IFS/FADN or IFS/LFS/FADN approaches. That contractor services exclude crops and animal husbandry main activities through holdings.

# 4.4.5 Administrative sources

4.65. Administrative data sources are typically collected by government bodies – but also increasingly by private data providers (e.g. associations for specific groups) – based on some form of statutory or voluntary registration.

4.66. For example, statistics from social security institutions and tax administrations can provide information on all persons required to pay income tax or social insurance contributions. Social security records, tax registers, compulsory business registration systems, resident permit registers and migration statistics are the administrative sources most commonly used by countries in compiling estimates of labour input.

4.67. Administrative Sources may include information on wages, entrepreneurial income, taxes, etc. as well as a series of demographic variables describing age, gender, and family ties and their advantage is that they are generally comprehensive, at least with regards to the population that they purport to cover.

# 4.4.6 Recommendation

4.68. The IFS offers a harmonised basis to gather labour input information. However, countries should take into account the impact of the differences in coverage between IFS and EAA. Conceptual adjustments using secondary sources, such as labour accounts, EU-LFS, FADN and/or administrative sources, are needed to ensure an exhaustive coverage. An example of these conceptual adjustments would be to distinguish if a family member receives a salary, to be considered as salaried or to take into account the labour from holdings producing farming goods only for its own subsistence, without market activity (NACE T98.10). While additional adjustments are needed to correct the under-coverage from IFS, the impact of these adjustments are considered minimal and so the method applied is considered a direct approach (<sup>65</sup>).

4.69. However, with IFS not being conducted on an annual basis, it should only be considered as the backbone data source to the annual ALI series. Even as a recommended backbone data source, the IFS figures should be cross-checked against figures and trends available from other data sources (cf. 4.61). For the years in which the IFS is not conducted, extrapolation methods could be used for the estimates, keeping IFS for previous years as benchmark. Benchmarking adjusts the level of a given series to the levels from a less frequent survey that is assumed to be of better quality, while attempting to minimize revisions to the period-to-period changes for the original series. Benchmarking methods can improve the accuracy and reliability minimizing the error between the extrapolated years when IFS is not available. National Accounts employment data, EU-LFS, FADN and/or administrative data could be used as data sources perform this technique as they provide a very detailed information on labour developments in annual basis.

#### **BOX 91 EXAMPLE: EXTRAPOLATION AND BENCHMARK METHOD**

This box provides example to the methodological constrain described in points 4.61–4.62.

For the years where IFS is available, data on AWUs are estimated based on IFS, taking into account the differences between IFS and EAA (column IFS in <u>Table 18</u> below). These data are taking as benchmarks.

For the years when IFS data are not available, benchmark year can be extrapolated using information coming from LFS. LFS data are available for all years. See column LFS, where the bridges between LFS and ALI are taken into account.

#### TABLE 18

# Estimation of AWUs based on IFS using LFS as explanatory variable

#### Thousand AWUs

Year	LFS	IFS	Estimated series
2000	83.8	83.8	83.8
2001	85.8		84.3
2002	86.5		84.8
2003	87.0	85.2	85.2
2004	87.5		85.5
2005	86.8		84.4

(<sup>65</sup>) Ward, A., M. Zinni and P. Marianna (2018), "International productivity gaps: Are labour input measures comparable?", OECD Statistics Working Papers, 2018/12, OECD Publishing, Paris

Year	LFS	IFS	<b>Estimated series</b>
2006	86.3	83.7	83.7
2007	82.9		81.2
2008	78.1		78.1
2009	80.5		80.9
2010	78.2	79.0	79.0
2011	72.5		72.9
2012	71.0		71.4
2013	67.7	68.0	68.0
2014	65.0		67.1
2015	63.3		66.1
2016	62.0	65.2	65.2
2017	61.7		64.9
2018	61.4		64.6

*Source*: own source using a formula for Denton method worked out by the Methodology Department of the Hungarian Central Statistical Office.

As far as IFS data become available, Denton method (<sup>66</sup>) can be used to adjust the estimated series to IFS data in benchmark years (where they are available) and minimise the year-on-year changes to the original series (Denton proportional method). This provides consistent series without meaningful breaks.

To estimate labour input for the "open" years (like 2017, 2018), where no benchmark is still available, simple extrapolation using LFS (or any other previously mentioned sources) year on year volume change taking into account the bridges between LFS (or any other previously mentioned sources) and ALI can be used.

## FIGURE 3



# Benchmark estimation for ALI data based on IFS and LFS data

(66) For more details see: https://www.imf.org/external/pubs/ft/qna/2000/textbook/ch6.pdf



- 5.01. One of the principal objectives of the EAA is to measure agricultural income and changes therein.
- 5.1 Definition of income and balancing items

# BOX 92 INCOME INDICATORS ARE KEY FOR POLICY MAKING AND MONITORING AS WELL AS FOR MACROECONOMIC ANALYSIS

The EAA Regulation sets out 3 income indicators which are laid down in point 5.12. In addition to those income indicators, EAA are a key input to other indicators relevant for policy making and monitoring as well as for scientific purposes.

#### Sustainable development goals (SDG)

As part of SDG number 2 'zero hunger', SDG indicators 2.3.1 and 2.3.2 play an important role by providing relevant information on the income of the farmers as well as the agricultural productivity. Namely, indicator 2.3.1 relates to the agricultural production per labour unit while indicator 2.3.2 refers to the average income. Even if the focus is on small or medium sized agricultural enterprises, EAA can be a relevant source to provide input for the calculation of those indicators in a timely manner. Sustainable development in the European Union–Statistics Explained (europa.eu)

Additionally, Eurostat currently publishes annual data at EU level for the SDG number 2 'zero hunger' using as indicator the "Agricultural factor income per annual work unit". This indicator is based on the EAA "indicator A".

#### **Indicators for CAP**

The income indicators laid down by the EAA Regulation are set as performance indicators to monitor the CAP. Namely:

- Indicator C.25 relates to agricultural factor income (based on indicator A in point 5.12).
- Indicator C.26 relates to agricultural entrepreneurial income

Other CAP indicators that are based or use EAA data are indicator C.29 total factor productivity in agriculture and indicator C.28 gross fixed capital formation in agriculture. Source: <u>https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2021:435:FULL</u>

#### Sustainable agricultural total factor productivity

Traditional total factor productivity (TFP) indicators measure the ability to use less input to produce a given quantity of output. The new trend that the Network on Agricultural TFP and the Environment launched by OECD and other networks seek to improve the measurement of sustainable productivity to also account for the fact that, keeping the level of input and output constant, a reduction in negative externalities, or an increase in positive externalities or non-marketed public goods, also results in an improved performance. The EAA data are relevant input to carry out this exercise and to develop a framework for cross-country agricultural TFP comparisons within the EU and EFTA. <u>EU Agricultural Economic briefs (europa.eu)</u>

5.02. Income can be defined as the maximum amount which the beneficiary can consume over a given period without reducing the volume of his/her assets. It can also be defined as being the total of the consumption and change in value of assets held over a given period, all other things being equal, as income represents what could have been consumed. The distinction made in the ESA 2010 between current accounts and the capital account enables maximum potential consumption to be studied using the measure of consumption and saving in the current accounts and that of the change in the value of assets in the capital account.

5.03. The sequence of accounts (cf. 1.43) of the agricultural industry makes it possible to calculate three balancing items which can be used as an income aggregate for the agricultural industry: net value added, net operating surplus (net mixed income) and net entrepreneurial income. The relationship between these items is set out in the following:

## TABLE 19

# Relationship between net value added, net operating surplus (net mixed income) and net entrepreneurial income

	Production account		Generation income account			Entrepreneurial income account		
P.1		Output	B.1n		Net value added	B.2n B.3n		Net operating surplus/ net mixed income
P.2	-	Intermediate consumption	D.1	-	Compensation of employees	D.41	+	Interest receivable (1)
P.51c	-	Consumption of fixed capital	D.29	-	Other taxes on production	D.41	-	Interest payable
			D.39	+	Other subsidies on production	D.45	-	Rent paid
B.1n	=	Net value added	B.2n B.3n	=	Net operating surplus/ net mixed income	B.4n	=	Net entrepreneurial income
D.29	-	Other taxes on production						
D.39	+	Other subsidies on production						
	=	Net value added at factor cost/factor income						

(1) Only interest received by agricultural units organised as companies.

#### **BOX 93 OUTPUT, IC, NVA AT BASIC PRICES**

#### Output, Intermediate consumption and Net value added are calculated at basic prices.

5.04. Net value added of the industry measures the value created by all the agricultural LKAUs, after the consumption of fixed capital. Given that output is valued at basic prices and intermediate consumption is valued at purchaser prices, net value added contains subsidies on products less taxes on products. Net value added at factor cost (defined as net value added at basic prices less other taxes on production plus other subsidies on production) measures the remuneration of all factors of production (land, capital, labour) and can be termed 'factor income', as it represents all the value generated by a unit engaged in a production activity.

5.05. Net operating surplus measures the yield from land, capital and non-salaried labour. It is the balance of the generation of income account which indicates the distribution of income between the factors of production and the general government sector. The net value added and net operating surplus are calculated for the industries.

5.06. Net entrepreneurial income, obtained by adding the interest received by agricultural units organised as companies to the net operating surplus and then deducting rent (i.e. farm and land rents) and interest payments, measures the compensation of non-salaried labour, remuneration from land belonging to units and the yield arising from the use of capital. It is similar to the corporate-accounting concept of current profit before distribution and taxes on income. Although net entrepreneurial income is not always calculated for industries, it can generally be evaluated for the agricultural industry as it is possible to determine the part of interest and rents linked exclusively to agricultural activity (and to secondary, non-agricultural activities).

#### BOX 94 DIFFERENCE BETWEEN FACTOR INCOME AND NET ENTREPRENEURIAL INCOME

The factor income compensates the production factors land, capital and labour while the net entrepreneurial income compensates the production factors owned by the unit. The environment is not compensated neither by factor income nor by entrepreneurial income.

5.07. In the case of sole proprietorships, entrepreneurial income represents, on the one hand, the compensation of the work performed by the agricultural holder (and the work of non-salaried family members) and, on the other hand, the income remaining with the enterprise, without it being possible to separate these two components (the term 'holder' as used here naturally refers to all persons who run sole proprietorships in this industry). It is, therefore, a mixed income. Like any other industry, however, the agricultural industry comprises production units that belong to different types of institutional units: companies and sole proprietorships. There is a difference between entrepreneurial income generated by sole proprietorships and that generated by units organised as companies. In the latter case, it represents 'straight' (*pure*) entrepreneurial income as it excludes any labour income (compensation of work has to be regarded as compensation of paid labour even if it relates to the administrators and shareholders of the company).

5.08. It has to be borne in mind that the income aggregates, obtained as balancing items of the sequence of accounts of the industry, are not indicators of total income or of the disposable income of households employed in agriculture, because the latter, in addition to their purely agricultural incomes, may also have income from other sources (non-agricultural activities, remuneration, social benefits, income from property). In other words, agricultural income must not be regarded as farmers' income. Moreover, this measure of income relates to the income generated by agricultural activities (as well as inseparable non-agricultural secondary activities) over a given accounting period, even though in certain cases the corresponding revenues will not be received until a later date. It does not, therefore, constitute the income effectively received in the course of the accounting period itself.

# 5.2 Treatment of the income of units organised on a corporate basis

5.09. Sole proprietorships (or family holdings) are the most common form of agricultural units in the European Union. However, some agricultural production units may be organised on a corporate basis and may take the form either of conventional companies (i.e. their organisational set-up is similar to that of companies which exist in other sectors of the economy) or of companies having more specific characteristics (as, for example, in the case of a farmer who, for tax reasons, creates a specific separate company for the commercial part of his economic activity, or of a group of farmers who form an association with the aim of pooling land and labour within the framework of certain types of cooperatives).

#### **BOX 95 "SPECIFIC" COMPANIES**

The SNA lays down that "specific" companies include partnerships whose members enjoy limited liability since these are separate legal entities which behave like corporations. In effect, partners are at the same time both shareholders and managers.

5.10. The net entrepreneurial income of the agricultural industry is thus made up of the following three components:

- the 'mixed' entrepreneurial income of sole proprietorships (unincorporated enterprises),
- the 'straight' (pure) entrepreneurial income of 'conventional' companies,
- the 'mixed' entrepreneurial income of companies specific to the agricultural industry.

These three components are set out in the chart under 5.11.

5.11. 'Straight' (*pure*) entrepreneurial income must exclude any compensation of employees as well as any rents paid prior to the distribution of profits. For most companies specific to agriculture, however, it is difficult to separate the remuneration of shareholders, for land and labour inputs, from profit distribution. It is recommended, therefore, that the yardstick for measuring agricultural entrepreneurial income should refer to 'mixed' income for this type of agricultural unit, i.e. that it should include the compensation of shareholder employees for their work as well as rents. Remuneration and rents should not, therefore, be deducted from the calculation of entrepreneurial income in the case of these specific companies. For the calculation of entrepreneurial income they are thus assimilated to a group of sole proprietorships. On the other hand, in the case of 'conventional' companies the distinction between remuneration and profit distribution must be made clearly.

## FIGURE 4

# Measuring of agricultural entrepreneurial income by different types of agricultural units



\*The EAA sequence of accounts is incomplete as explained in chapter 1 of this manual. Namely, the entrepreneurial income account compiled by the EAA does not cover all the property incomes (especially D.42 is not taken into account). As a consequence, the entrepreneurial income of the subset of units belonging to the institutional sector S.11 (non-financial corporations) may not be "pure", as for example the dividends of the shareholders are not excluded.

# 5.3 Definition of the agricultural income indicators

5.12. The three agricultural income indicators can be described as follows:

• indicator A: index of the real income of factors in agriculture per AWU

This yardstick corresponds to the real net value added at factor cost of agriculture per total AWU (67).

#### **BOX 96 REAL FACTOR INCOME IN EURO PER AWU**

In addition to what the Regulation provides for, real factor income per agricultural labour input can be expressed also in euro/AWU, not only in an index form. The index format is better suited for analysis of the evolution over time, while the euro per AWU indicator can be used to compare country level at a given year. The differences in the hours used to compute AWU by country (see <u>Box 78 Annual full-time</u> job hours per AWU in agriculture by countries) are a limitation to this indicator.

(<sup>67</sup>) In order to take into account part-time and seasonal work, agricultural employment or changes therein are measured in AWUs (see Chapter IV for more details). A distinction is drawn between non-salaried and salaried AWUs, which together make up total AWUs.

• indicator B: index of real net agricultural entrepreneurial income, per non-salaried AWU

This indicator presents the changes in net entrepreneurial income over time, per non-salaried AWU. Converted into the form of an index for each Member State, it provides information on trends rather than on income levels. It is most useful in those countries where agriculture is organised in the form of sole proprietorships. On the other hand, in view of the existence of 'conventional' companies which generate entrepreneurial income exclusively with paid labour, indicator B is overestimated in comparison with a notion of individual income. This drawback may prevent a comparison of income levels between Member States if the proportions of 'conventional' companies differ very much,

• indicator C: net entrepreneurial income of agriculture

This income aggregate is presented as an absolute value (<sup>68</sup>) (or in the form of an index in real terms). It allows comparability over time of the income of the agricultural industry between Member States.

# 5.4 Aggregation of income indicators for the European Union

5.13. Indices and rates of change for the European Union as a whole can be calculated either as weighted averages of the national indices or rates of change, or directly on the basis of EU aggregates obtained by converting national data into euro or into purchasing power standards (PPS). In both cases, a base year has to be chosen; either the year used to determine the shares included from the various countries in the calculation of the Community averages, or the year whose exchange rates were used to calculate the aggregates.

5.14. Slightly different methods and different base years are used depending on whether the calculations represent an analysis of a short-term trend (changes in year 'n' compared with year 'n-1') or of a long-term trend (generally from 1980 to year n).

5.15. For the analysis of a short-term trend, the rates of change of the nominal or real income indicators of the European Union for year n compared with year n-1 are calculated as weighted averages of the corresponding rates of change estimated in the Member States, the weighting coefficients being calculated on the basis of the income aggregates for year n-1, converted into euro at the exchange rates of year n-1; these coefficients are naturally specific for each aggregate. This method based on year n-1 appears the most appropriate for a short-term analysis, and is the one that is most consistent with that used by individual Member States.

5.16. For analysis of the long-term trend, the indices and rates of change of the income indicators for the European Union are calculated on the basis of the EU aggregates expressed in euro at fixed exchange rates: for values expressed in real terms (i.e. after deduction of the effect of the average rise in prices), the deflators used are also based on a fixed base year.

#### **BOX 97 EU AGGREGATES AND DEFLATORS**

Point 5.16 describes that the deflators used for compiling rates of change of the income indicators for the EU are to be calculated on the basis of the EU aggregates expressed in euro at fixed exchange rates. Currently, in line with the SNA 2008 and ESA 2010, national accounts follow chain-linking. Therefore, the GDP deflator that is used for compilation of EAA data at real terms became chain-linked at country level. In the sake of consistency, the aggregation of income indicators at EU level uses chain-linking instead of fixed base year aggregation (see 5.19).

This means that for analysis of the long-term trend, the EU aggregate at a reference year prices should be calculated as chain-linked using EU aggregates at n-1 year prices and at current prices. As a result of the particularity of chain-linking, the additivity "disappears" at reference year prices (with the exception of the reference year and the year following the reference year). This is due to the fact that the weights are those of the previous year, while the price component is that of the reference year.

(68) This measure of income corresponds to the former measure 'net income from family agricultural activity' for sole proprietorships.

# 5.5 Deflation of income indicators

5.17. For each Member State, the indices and the changes, in real terms, of the values of the income indicators are obtained by deflating the corresponding nominal data with the implicit price index of GDP.

5.18. Important factors such as reliability and comparability are points in favour of using this deflator. The implicit price index of GDP is a general price indicator for all goods, products and services throughout the economy. The price index of national final uses also comes into consideration as a deflator. Unlike the GDP price index, it takes the effect of external trade equally and directly into account and thus reflects more quickly and clearly any charges in the prices of imports (e.g. energy price movements). Nevertheless, in order to safeguard comparability with other statistics compiled by the European Commission, it was decided not to introduce a new deflator.

5.19. Real income aggregates for the European Union as a whole are obtained by first deflating the nominal values (at current prices) recorded in the various Member States, applying the implicit price index of GDP of the particular Member State concerned, and then converting them into EURO (at 1995 exchange rates for long-term analysis and at those of year n-1 for the short-term trend, as indicated above). The results are thus added up so as to obtain the real values for the European Union. It is on the basis of these aggregates in real terms that the indices and rates of change for the European Union are calculated, which means that an 'EU deflator' is never explicitly involved.

#### **BOX 98 REFERENCE TO 1995 EXCHANGE RATES**

The EAA Regulation was adopted in 2004, based on a 1997 version of the methodological manual. Point 5.19 should be understood in that context. Namely, the reference to the 1995 exchange rates is outdated.



#### **BOX 99 VALUATION OF CONSTANT PRICES**

Valuation at constant prices means valuing the flows and stocks in an account period at the prices of a previous year. The purpose of valuation at constant prices is to decompose changes over time in the values of flows and stocks into changes in price and changes in volume. Flows and stocks at constant prices are described as being in volume terms (ESA 2010, 1.99).

# 6.1 Price and volume measures

6.01. For the purposes of economic analysis, when looking at how values change, it is useful to distinguish between those value changes due to changes in volume and those due to changes in price. The ESA 2010 (10.13 to 10.23) clearly states that the price component should only include changes relating to prices and that all other changes should be included in the volume component. Thus, differences in quality between products (physical characteristics, types of retail outlet, etc.) are to be taken into account as volume and not price changes.

#### **BOX 100 MEASURING ECONOMIC GROWTH IN VOLUME**

A major concern in economic analysis is to measure economic growth in volume terms between different periods. It is then necessary to distinguish, in the value changes for certain economic aggregates, the changes arising solely from price changes from the remainder, which is called the change in 'volume' (ESA 2010, 10.01).

6.02. For many goods and services there exist several variations which differ in quality. The ESA 2010 defines several factors which give rise to differences in quality, but the most important for the EAA is that linked to physical characteristics. This recognises that within the definition of a given product, there may be physical differences which imply that the physical units (e.g. one tonne) are not identical in an economic sense. An example of this is with two tonnes of grain sold in two consecutive years. In year one all the grain is of milling quality, in year two, less than half is of milling quality, the rest is sold for feed. This means that the average quality of the grain has fallen. The other difference in quality, important for the EAA, is that of a shift in sales of a product between two differently priced markets, e.g. domestic and external, industrial use and sales to consumers (cf. ESA 2010, 10.13 to 10.18).

6.03. The indicators of volume and price used to compile data at constant prices have to take account of changes in quality. It is therefore recommended that work is conducted at the greatest level of detail in order to get as close as possible to entirely homogeneous elementary products. If the elementary products are entirely homogeneous, changes in volume can be estimated on the basis of changes in quantity.

6.04. However, statistical information is often only available at a more aggregated level and therefore no longer concerns strictly homogeneous products. In this case, the ESA 2010 (10.32) states that it is preferable to deflate the value for the current year by a suitable price index to estimate changes in volume (ESA 2010, 10.01).

6.05. The level of detail for which the index used is assumed to be an elementary index (the product under investigation is thus considered as homogeneous) is called the elementary level of aggregation. In the EAA, the elementary level of aggregation corresponds at least to the most disaggregated level of the nomenclature within the data transmission table. A greater level of detail is, however, desirable for compiling price indices.

6.06. For each aggregate of goods and services shown in the accounts, price and quantity measures have to be constructed so that

value index = price index  $\times$  volume index

This means that each and every change in the value of a given flow must be attributed to either a price change or a change in volume or a combination of the two (cf. ESA 2010, 10.12).

6.07. The systematic breakdown of the changes in current value into the components 'changes in price' and 'changes in volume' is restricted to flows representing transactions of goods and services and to elements concerned in the valuation of these transactions (output, intermediate consumption, consumption of fixed capital, gross value added, net value added, GFCF, change in *inventories*, taxes and subsidies on products).

6.08. This point was removed from the EAA Regulation following amending act Regulation (EC) No 219/180. It is kept in this manual to make clear references between the points in Annex I of Regulation and the manual.

# 6.2 Principles and method for compiling EAA at constant prices

# 6.2.1 Choice of index formula

6.09. In accordance with ESA 2010 (10.20), in the EAA, changes in volume are measured using Laspeyres-type indices and changes in price are measured using Paasche-type indices.

## FIGURE 5

Laspeyres volume index

$$L(q) = \frac{\sum p_0 q_n}{\sum p_0 q_0} = \frac{\sum p_0 q_0 \frac{q_n}{q_0}}{\sum p_0 q_0} = \frac{\sum V_0 \frac{q_n}{q_0}}{\sum V_0}$$

FIGURE 6

**Paasche price index** 

 $P(p) = \frac{\sum q_n p_n}{\sum q_n p_0} = \frac{\sum p_0 q_n \frac{p_n}{p_0}}{\sum p_0 q_n}$ 

For each elementary product:

- $p_{o}$ : represents the price recorded in the base year 0,
- p : represents price recorded in year n,
- $q_0$ : represents the quantity recorded in the base year 0,
- q<sub>n</sub>: represents the quantity recorded in year n,
- $V_0$ : represents the value recorded in the base year 0: ( $V_0 = p_0 q_0$ ).

#### **BOX 101 CLARIFICATION OF USING LASPEYRES AND PAASCHE INDEX**

Essentially, Laspeyres uses weights from a base year, Paasche from the current year.

The index numbers within national accounting are designed to decompose changes in value aggregates into their overall change in price and volume components. A price index can be calculated as a weighted average of the proportionate changes in the prices of a specified set of goods and services between two periods in time, say a reference period 0 and current period n. Similarly, a volume index can be calculated as a weighted average of the proportionate changes of the proportionate changes in the volumes of a specified set of goods and services between two periods of time (reference period 0 and current period n). There are many index number formulae different from each other mainly in the weights which they attach to the individual price or quantity relatives and the particular form of average used, whether it is arithmetic, geometric etc. (cf. 2008 SNA, 15.15).

The introduction of the notion of volume in national accounting rests on the desire to eliminate the effect of price variation in the pattern of values expressed in monetary units. The effect of change in price can be offset by calculating what the value of the set of products would have been if there had been no change in prices, i.e. by applying the prices of the base period to the current period. This value at prices of the base period defines the notion of volume.

The value (V) of a set of products in the current period (n) may be written as:

• 
$$V_n = \sum p_n q_n$$

The volume of the set of products for the current period is thus defined in relation to the base period (0) by the formula:

#### • Volume = $\Sigma p_n q_n$

By comparing the volume of the set of products for the current period and their overall value for the base period it is possible to measure a change which is not affected by price variation. A volume index can thus be calculated by the formula of Laspeyres volume index (see Figure 5 above). The volume index which is thus defined is a Laspeyres index of quantities in which each basic index is weighted by the proportion of the basic product in the overall value of the base period.

The price index is defined by the ratio between the value for the current period and the volume, i.e. by the formula of Paasche price index (see <u>Figure 6</u> above).

In Paasche price index each base price index is weighted by the proportion of the base product in the overall value for the current period.

The volume and price indices defined in this way prove the equation:

Value index = price index x volume index

## 6.2.2 Base year

6.10. Changes in volume are measured using Laspeyres-type indices: changes in the quantities of elementary series are therefore weighted by the value in the base year. Changes in price are measured using Paasche-type indices: changes in the prices of elementary series are therefore weighted by the value in the current year at the prices for the base year.

#### **BOX 102 CLARIFICATION ON CHAIN-LINKING**

Point 6.10 should be understood as a general definition and is to be analysed together with point 6.12. That point provides for that the most accurate weight for measuring changes in the EAA is using the weights of the preceding year. That is the basis of chain-linking and it is consistent with the ESA 2010.

Examples under point 6.16 illustrate the technique of chain-linking that is used in the framework of the EAA.

6.11. The base year is the year from which the prices are used to compile the weighting scheme.

6.12. The most accurate way to measure changes in volume from one year to another is to use the most recent base year available. This approach guarantees that weightings are relatively up-to-date and avoids problems linked to weighting products that are no longer produced and new products that have emerged. It is for this reason that the EAA measures changes in volume using the weightings for the preceding year.

## 6.2.3 Presenting series in relation to a reference year

6.13. The year used for submitting and presenting data at constant prices can be different from the base year; it is called the reference year. In a series of indices, the reference year is the one that takes the value 100.

6.14. Series of volume indices in the prices of a reference year are obtained by chaining indices calculated in the prices of the preceding year (cf. ESA 2010, 10.20).

6.15. It is important that a change of reference year has no effect on the changes in volume with respect to the preceding year. It is for this reason that EAA data are presented in relation to a fixed reference year by re-referencing each variable separately, regardless of whether these are aggregates or elementary indices.

#### 6.16. Example:

Let us consider two homogeneous elementary products, A and B. The following series are based on the price structure for the preceding year:

#### TABLE 20

# Data at current prices and at prices of the previous year and their indices

	<b>q</b> _p	$rac{{f q}_{n+1}}{{f q}_n}$ volume index	q <sub>n+1</sub> p <sub>n</sub>	P <sub>n+1</sub> P <sub>n</sub> price index	q <sub>n+1</sub> p <sub>n+1</sub>	$rac{{f q}_{n+2}}{{f q}_{n+1}}$ volume index	<b>q</b> <sub>n+2</sub> <b>p</b> <sub>n+1</sub>	$rac{{f p}_{n+2}}{{f p}_{n+1}}$ price index	<b>q</b> <sub>n+2</sub> <b>p</b> <sub>n+2</sub>
Α	100	105.0	105	110.0	<b>11</b> 6	102.0	<b>11</b> 8	108.0	<b>12</b> 7
В	300	110.0	330	95.0	314	90.0	283	105.0	297
Total	400	108.8	435	<b>98.</b> 8	<b>4</b> 30	<b>93</b> .3	<b>40</b> 1	105.7	<b>42</b> 4

The volume and price indices for the whole (A + B) depend on the weighting given to each product, A and B.

If these series are expressed in relation to a fixed reference year (e.g. n), the only way to retain the same n/n-1 volume indices is to chain the indices separately. This gives the following series (base equal to 100 in n):

## TABLE 21

# Index calculation by chain-linking as compared to the "fixed" reference year, n

	n	n+1	n+2
Α	100	105.0	107.1
В	100	110.0	99.0
Total	100	108.8	<b>101.</b> 5

(101,5 = 108,8 \* 93,3/100)

The values at constant prices expressed in relation to the reference year n are:

## TABLE 22

# Calculation of chain-linked figures at constant prices (at year n reference year prices), where $A+B \neq$ Total

	Ν	n+1	n+2
Α	100	105	107.1
В	300	330	297.0
Total	400	435	<b>405</b> .9

(405,9 = 400 \* 101,5/100 or 435 x 93,3/100)

As a result, the account is no longer additive (at reference year prices). Adding the values at constant prices for A and B gives the following series:

# TABLE 23

# Calculation of the aggregate at constant prices , if it were additive

	n	n + 1	n + 2
A + B	400	435	404.1

Other than in the year following the reference year, the re-referenced series are not additive.

6.17. According to ESA 2010 (10.23), the non-additive constant price data are published without any adjustment (<sup>69</sup>). This is also the approach taken by the EAA. It is to be explained to users, however, that the tables are not additive.

<sup>(&</sup>lt;sup>69</sup>) This does not preclude the possibility that there may be circumstances in which compilers may judge it preferable to eliminate the discrepancies in order to improve the overall consistency of the data.

# 6.2.4 Calculation of value added at fixed year prices

6.18. Value added constitutes the balancing item of the production account. As such, it is not possible to split value added directly into a price component and a volume component. The theoretically correct method for calculating value added at fixed year prices is to carry out 'double deflation' (cf. ESA 2010, 10.31-10.32).

6.19. Gross value added expressed in the prices of the preceding year is therefore defined as the difference between output measured in the prices of the preceding year and intermediate consumption measured in the prices of the preceding year. Net value added in the prices of the preceding year is defined as the difference between gross value added in the prices of the preceding year is defined as the prices of the preceding year. The value added in the prices of a fixed reference year is obtained by re-referencing.

#### 6.20. Example:

A series of current values and values in the prices of the preceding year (volumes) concerning output and intermediate consumption is set out below:

### TABLE 24

# Values of output and IC data at current prices and at prices of the previous year

	<b>q</b> <sub>n</sub> <b>p</b> <sub>n</sub>	$\mathbf{q}_{n+1}\mathbf{p}_{n}$	$\mathbf{q}_{n+1}\mathbf{p}_{n+1}$	$\mathbf{q}_{n+2}\mathbf{p}_{n+1}$	$\mathbf{q}_{n+2}\mathbf{p}_{n+2}$
Output	150	160	170	180	200
Intermediate consumption	40	30	35	40	45

The value added in volume terms is obtained by deducting the volume of intermediate consumption from the volume of output. The following series is derived:

## TABLE 25

# Calculation of value added at current prices and at prices of the previous year

	<b>q</b> <sub>n</sub> <b>p</b> <sub>n</sub>	$\mathbf{q}_{n+1}\mathbf{p}_{n}$	<b>q</b> <sub>n+1</sub> <b>p</b> <sub>n+1</sub>	$\mathbf{q}_{n+2}\mathbf{p}_{n+1}$	$\mathbf{q}_{n+2}\mathbf{p}_{n+2}$
Gross value added	110	130	135	140	155

In this way, the following volume indices in the prices of the preceding year are obtained:

## TABLE 26

# Calculation of volume indices of value added

	n + 1	n + 2
Gross value added	118.2	103.7

(118,2 = 130/110 \* 100) (103,7 = 140/135 \* 100)

The gross value added of a particular year in prices of year n (fixed year prices) is derived by multiplying the current value for n by the volume chain index.

VA n + 1 (in n prices) = 110 \* 1,182 = 130 VA n + 2 (in n prices) = 110 \* 1,182 \* 1,037 = 135.

# 6.2.5 Breakdown of taxes and subsidies on products into volume and price components

6.21. The breakdown of valuations at basic price into respective volume and price components presupposes that this breakdown also applies to the taxes and subsidies on products. The choice made in the EAA is the following one:

6.22. The volume index of the subsidy (or the tax) on product is identical to the volume index of the output at the producer price. In this case, the volume index of the output is the same whether expressed in the producer price or in the basic price.

6.23. This solution has another advantage: the volume index is independent of the method of valuation. Consequently, the interpretation of the price and volume indices at the basic price, is straightforward: for a perfectly homogeneous basic product, the volume index is identical to the quantity index; the price index reflects the change in the average basic price.

6.24. Example:

For a given product, the value of output at the producer price in year n is 1 000; the value of output in year n+1 is 900. The volume index of output is 102.

This product is subsidised. The value of the subsidy for year n is 100; the value of the subsidy for year n+1 is 150.

The volume/price breakdown of the subsidy is carried out in the following way:

## TABLE 27

# Breakdown of subsidy into volume and price components

	q <sub>n</sub> p <sub>n</sub> Value n	$rac{{f q}_{n+1}}{{f q}_n}$ Volume index	q <sub>n+1</sub> p <sub>n</sub> Volume n+1	$rac{{ extsf{P}_{n+1}}}{{ extsf{P}_n}}$ Price index	q <sub>n+1</sub> p <sub>n+1</sub> Value n+1
Output at producer prices	1 000	102.0	1 020	88.2	900
Subsidy on products	100	102.0	102	147.0	150
Output at basic prices	1 100	102.0	1 122	93.6	1 050

The volume index of the subsidy is the same as that of the output at the producer price.

# BOX 103 FURTHER EXAMPLES FOR BREAKDOWN OF TAXES AND SUBSIDIES ON PRODUCTS INTO VOLUME AND PRICE

To ensure the rule in 6.22 in special cases the calculation should be the following:

In the case there are subsidies and taxes on product only in year n.

For a given product, the value of output at the producer price in year n is 1000; the value of output in year n+1 is 900. The volume index of output is 102.

This product is subsidised only in year n. The value of the subsidy for year n=100, for year n+1=0.
There is tax on product only in year n. The value of the tax for year n is 10. The volume/price breakdown of the subsidy is carried out in the following way:

## TABLE 28

Volume and price indices if there are subsidies and taxes on product only in year n.

	q <sub>n</sub> p <sub>n</sub> Value n	$rac{{f q}_{n+1}}{{f q}_n}$ Volume index	q <sub>n+1</sub> p <sub>n</sub> Volume n+1	$rac{{f p}_{n+1}}{{f p}_n}$ Price index	q <sub>n+1</sub> p <sub>n+1</sub> Value n+1
Output at producer prices	1000.0	102.0	1020.0	88.2	900.0
Subsidy on product	100.0	102.0	102.0		
Tax on product	10.0	102.0	10.2		
Output at basic prices	1090.0	102.0	1111.8	80.9	900.0

### There are subsidies and taxes on product only in year n+1

For a given product, the value of output at the producer price in year n is 1000; the value of output in year n+1 is 900. The volume index of output is 102.

This product is subsidised only in year n+1. The value of the subsidy for year n=0, for year n+1=150.

There is tax on product only in year n+1. The value of the tax for year n=0, for year n+1=10.

The volume/price breakdown of the subsidy is carried out in the following way:

### TABLE 29

# Volume and price indices if there are subsidies and taxes on product only in year n+1

	Value n	n+1/n volume index	Volume n+1	n+1/n price index	Value n+1
Output at producer prices	1000.0	102.0	1020.0	88.2	900.0
Subsidy on product	0.0				150.0
Tax on product	0.0				10.0
Output at basic prices	1000.0	102.0	1020.0	102.0	1040.0



# 7.1 General principles

### 7.1.1 Introduction

7.01. Regional accounts play an important role in the formulation, implementation and evaluation of regional policies. Objective, reliable, consistent, coherent, comparable, relevant and harmonised regional statistical indicators provide a firm foundation for policies aimed at reducing economic and social disparities between the regions of the Union.

### **BOX 104 AIM OF REAA**

One of the most important goals of the regional economic accounts for agriculture (REAA) is providing indicators for the performance monitoring and evaluation of CAP.

National figures alone cannot reveal the full and sometimes complex picture of what is happening at a more detailed level. Therefore, regional-level data help to increase the understanding of the diversity that exists between regions, complement information for the Union, the euro area and individual Member States, while responding to the increased need for statistics for accountability, and increase the level of harmonisation, efficiency and consistency regarding Union agricultural statistics.

Statistics are no longer considered to be just one among many sources of information for policymaking purposes but instead play a central role in the decision-making process. Evidence-based decision-making requires statistics that meet high-quality criteria, as set out in Regulation (EC) No 223/2009 of the European Parliament and of the Council ( 4 ), in accordance with the purposes they are serving.

High-quality statistical regional-level data are a central tool for the implementation, monitoring, evaluation, review and assessment of the economic, environmental and social impact of policies related to agriculture in the Union, in particular the common agricultural policy ('CAP'), including rural development measures, the CAP's new delivery model and national Strategic Plans, as well as Union policies relating to, inter alia, the environment, climate change, biodiversity, the circular economy, land use, balanced and sustainable regional development, public health, animal welfare, food safety and security and the United Nations sustainable development goals. The REAA are also crucial for assessing accurately the contribution of the agricultural sector to the achievement of the European Green Deal, in particular the Farm to Fork Strategy and the Union biodiversity strategy. There is increasing recognition of the role of regions and regional data in the implementation of the CAP. Regions

represent an important driver for jobs and sustainable economic growth in the Union and provide better data for assessing the sustainability of the agricultural sector for the environment, people, regions and the economy (Regulation (EC) No 2022/590, (3) to (5).

7.02. The REAA are a regional-level adaptation of the EAA.

7.03. The REAA comprise the same set of accounts as the EAA, but conceptual and measurement problems result in a set of accounts for regions which are more limited in scope and detail than EAA at national level.

7.04. As regional accounts, the REAA shall be compiled on the basis of regional data collected directly, and of national data that have regional breakdowns based on assumptions. The lack of sufficiently complete, timely and reliable regional information requires assumptions in compiling regional accounts. That implies that some differences between regions are not necessarily reflected in regional accounts (ESA 2010, 13.08).

# 7.1.2 Regional economy, regional territory

7.05. Any compilation of regional accounts, whether they refer to industries or institutional sectors, needs a strict definition of the regional economy and regional territory. In theory, the agricultural industry in a region covers the units (agricultural holdings) engaged in agricultural activities (cf. 1.60 to 1.66) on the regional territory.

7.06. A regional economy of a country is part of the total economy of that country. The total economy is defined in terms of institutional units and sectors. It consists of all the institutional units that have a centre of predominant economic interest in the economic territory of a country. The economic territory does not coincide exactly with the geographic territory (cf. 7.08). The economic territory of a country is divided into regional territories and the extra-regio territory (ESA 2010, 13.09).

7.07. The regional territory, as defined in the ESA 2010, consists of that part of the economic territory of a country that is directly assigned to a region. Free zones, bonded warehouses and factories under customs control, are attached to the regions where they are located.

7.08. However, that division of territory is not totally consistent with the concept of national economic territory as used by the national accounts. The extra-regio territory is made up of parts of the economic territory of a country which cannot be attached directly to a single region, and which are excluded from the REAA, i.e.:

- a) the national air-space, territorial waters and the continental shelf lying in international waters over which the country enjoys exclusive rights;
- b) territorial enclaves, i.e. geographic territories situated in the rest of the world and used, under international treaties or agreements between States, by general government agencies of the country (embassies, consulates, military bases, scientific bases, etc.);
- c) deposits of oil, natural gas etc. in international waters, outside the continental shelf of the country, worked by resident units.

7.09. The Nomenclature of Territorial Units for Statistics (NUTS) classification established by Regulation (EC) No 1059/2003 of the European Parliament and of the Council (<sup>70</sup>) provides a single, uniform breakdown of the economic territory of the Union. The REAA require statistics at NUTS 2 level as commonly established under the current arrangements under that Regulation. For national purposes, regional accounts may also be compiled at a more detailed regional level, namely at NUTS 3 level, where applicable (ESA 2010, 13.12)

### **BOX 105 DIFFERENT REGIONAL BREAKDOWN FOR NATIONAL PURPOSES**

For national purposes, regional accounts may also be compiled according to a different regional breakdown (e.g. agricultural production regions according to altitude and agronomical suitability).

<sup>(&</sup>lt;sup>70</sup>) Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS) (OJ L 154, 21.6.2003, p. 1).

# 7.1.3 Basic unit in the compilation of the REAA

7.10. The units used for the regional accounts by industry are local KAUs. The local KAU is the observable form of the production unit.

7.11. The statistical approach (industry) 'makes do' with an observable unit even if that means deviating from the single activity. As with the 2008 SNA, the ESA 2010 prefers the statistical approach and advocates the local KAU for the compilation of national accounts by industry. They thus define the same unit for the industries whether those are covered at regional or national level.

7.12. Like the EAA, the REAA use the agricultural holding – 'adapted' in line with certain conventions to comply with the objectives in question—as the basic unit for the agricultural industry. There are two crucial reasons for that choice. On the one hand, the agricultural holding unit is the local KAU for agriculture (cf. 1.09 to 1.17), defined as that part of a KAU which refers to the local level. The local KAU is also the most appropriate unit for the agricultural industry, even if it includes non-agricultural secondary activities, which cannot be shown separately from the agricultural activities (cf. 1.15 and 1.16, 1.25 to 1.32).

7.13. Using the agricultural holding as the basic unit means including the non-agricultural secondary activities of those agricultural holdings in the REAA (cf. 7.12). Since the purpose of the EAA is to measure, describe and analyse the formation of income from agricultural economic activity, it excludes units that produce solely a leisure activity (e.g. kitchen gardens and private livestock rearing). In contrast, units engaged in subsistence farming are included in the EAA (cf. 1.24).

7.14. The agricultural holding is the reference unit for statistical surveys relating to agriculture, whether those are national or regional. That has the advantage that evaluations of output in quantity terms may be based directly on the statistical systems for measuring areas, yields, herd sizes, etc. The choice of the agricultural holding also makes for better accounting consistency.

# 7.1.4 Methods of compiling the REAA

7.15. The ESA (ESA 2010, 13.24 to 13.32) proposes two methods, applying to either industries or institutional sectors: the bottom-up and the top-down methods. The bottom-up method consists of collecting the data at the level of the units (local KAUs, institutional units) and then summing them to obtain the regional value for the different aggregates. The top-down method reconstructs the regional values by breaking down the national figure, using an indicator that reflects as closely as possible the regional distribution of the variable in question. Those two methods may also be combined in various ways, combinations which the ESA refers to as a mixture of bottom-up and top-down methods. However, collecting the same information more than once, thus creating redundancy in the data reporting, shall be avoided. Yet priority is given to the bottom-up method, although it is realised that in many cases a mixture of bottom-up and top-down methods is actually used. Details of the specific method and sources shall be set out in full transparency in the quality reports, indicating which regional data have been collected directly and which data are based on national data with regional breakdowns based on assumptions.

# 7.1.5 Concepts of residence and territory

7.16. Economic transactions of both enterprises and households may cross regional boundaries. Enterprises may also operate in more than one region, either at permanent sites or on a temporary basis, e.g. big farms may undertake work in different regions. Therefore, a clear principle is needed to help Member States to consistently allocate that interregional activity to a region.

7.17. The regional accounts of the industries are based on the criterion of residence of the production unit. Each industry at a regional level refers to the group of local KAUs of the same or similar principal economic activity, which have their centre of economic interest in that regional territory. More often than not, that centre of interest is associated with a specific long-term location in the region, like the institutional units to which the local KAUs belong.

7.18. However, the regional accounts have a number of distinct features. For certain activities, it is not always easy to define the region as a specific area. The relationship between the location of the head office and the physical location of the agricultural holding can create a problem, as factors of agricultural production may be managed by a head office in another region. For the REAA, it is important to split the two entities, and for that reason an agricultural holding must be assigned to the region where its factors of production are situated and not to the region where its headquarters are located. One head office may therefore give rise to several units within the meaning of the REAA, i.e. to as many units as there are regions of residence for local KAUs that are away from the region of the head office.

7.19. An alternative concept, which is generally not applied in the national and regional accounts, would be strictly territorial. That concept implies that activities are allocated to the territory where they actually take place, regardless of the residence of the units involved in the activity.

7.20. Though the residential approach takes precedence for the regional allocation of transactions of resident units, ESA 2010 provides for some limited scope for the application of the territorial approach (ESA 2010, 13.21). That occurs where notional units are created for land and buildings in the region or country in which the land or buildings are located.

7.21. In the hypothetical case, where units resident in a region only have activities within their regional territory, the residence concept coincides with the territory concept. That is also the case for the regional allocation based on notional units created for land and buildings and for unincorporated enterprises in other countries or in regions that are different from the region of residence of the owner.

# 7.1.6 Agricultural industry and characteristic units

7.22. The industry consists of all the local KAUs, which carry out an identical or similar economic activity (cf. 1.59). The agricultural industry, as described in the EAA, corresponds, in principle, to Division 01 in NACE Revision 2, with differences shown in 1.62 to 1.66. The scope of the REAA is defined on the basis of the list of characteristic activities drawn up for the EAA. There are some differences between the agricultural industry in the EAA, and thus in the REAA, and the industry established for the central framework of the national accounts (cf. 1.93).

# 7.2 Transactions in products

7.23. Valuing agricultural output poses a number of specific problems. The most important relate to seasonal products, livestock production and the timing of the entries in the accounts. The EAA methodology puts forward precise rules governing how the effects of the storage of seasonal products shall be taken into account, how the output of livestock shall be measured and how products on which work is in progress must be recorded. Those principles shall be complied with when the REAA are compiled. However, that does not rule out certain adaptations at regional level, for example for livestock production. It should be stressed that the total of the regional valuation must be identical with the EAA valuations.

# 7.2.1 Output

### 7.2.1.1 Measurement of output

7.24. In the REAA, output of a region represents all products within the scope of EAA produced over the accounting period in that region by all the units of the agricultural industry, whether they are intended for marketing outside the industry, for sale to other agricultural holdings or, in certain cases, for use by the same agricultural holding. Consequently:

- a) any agricultural product leaving an agricultural holding in the region shall be recorded as part of the output of the region, irrespective of its destination or the unit buying it;
- b) certain agricultural products used as intermediate consumption by the same agricultural holding shall be included in the output of the region (cf. 2.056).

7.25. The production process of livestock generally takes several years. When livestock is valued, a distinction must be made between animals classified as fixed assets (breeding and draught animals, dairy cows, etc.) and those classified as

*inventories* (animals intended mainly for meat). Thus, in order to avoid double counting, transactions involving the movement of animals between agricultural holdings (which are taken to be positive sales for the agricultural holdings selling the livestock and negative sales for the purchasing agricultural holdings), are dealt with as set out below:

- a) transactions between agricultural holdings in the same region involving animals classified as fixed assets cancel each other out, apart from the transfer of ownership costs (<sup>71</sup>); they are not entered as the agricultural holdings' sales and are therefore not included in the output of the region in question;
- b) animals classified as *inventories* and which are the subject of a transaction between regions are treated as positive sales (along with exports) for the region of origin and animals bought from other regions as negative sales (along with imports) (<sup>72</sup>);
- c) when ownership transfer costs (transport, trade margins, etc.) relate to trade in animals classified as *inventories*, they are deducted from output; that happens automatically when purchases from agricultural holdings in other regions are involved, since the costs are part of negative sales, whereas an adjustment must be made in sales, and thus in output, for trade in animals between agricultural holdings in the same region.

### 7.2.1.2 Valuation of output

7.26. Output shall be valued at basic prices (cf. 2.082), i.e. including subsidies on products, less taxes on products. That method of calculation means that taxes and subsidies on products need to be broken down by region.

### **BOX 106 CONSISTENCY CRITERIA**

The sum of the taxes and that of subsidies on products of all regions should be consistent with the corresponding variables at national level.

# 7.2.2 Intermediate consumption

### 7.2.2.1 Definition

7.27. Intermediate consumption consists of the goods (other than fixed assets) and market services consumed during the production process to produce other goods (cf. 2.097 to 2.109).

7.28. When the REAA are compiled, intermediate consumption includes:

a) agricultural products purchased for consumption during the production process from other agricultural holdings (whether in the same region or in another region);

b) certain products used as intra-unit consumption and entered as output (cf. 2.054 to 2.058 and 7.24).

7.29. The particular case of FISIM is treated in regional accounts in the same way as in national accounts. If the estimation of stocks of loans and deposits is available by region, the bottom-up method can be used. However, usually estimates of stocks of loans and deposits are not available by region. Where that is the case, the allocation of FISIM to the user industry is made with a second-best method: regional gross output or gross value added by industry are used as distribution indicators (ESA 2010, 13.40).

### 7.2.2.2 Valuation of intermediate consumption

7.30. All products and services used for intermediate consumption shall be valued at the purchaser price (excluding deductible VAT) (cf. 2.110 to 2.114).

 $(\sp{7})$   $\sp{-}$  As long as the corresponding sales and purchases fall in the same accounting period.

<sup>(&</sup>lt;sup>2</sup>) The purchase of an animal is never to be recorded as intermediate consumption (basically, it is an acquisition of work-in-progress, cf. 2.067) and the calculation of animal output can only be calculated indirectly, on the basis of the sales, the GFCF and the stock changes.

# 7.2.3 Gross capital formation

7.31. Gross capital formation for agriculture is subdivided into:

- GFCF,
- changes in inventories.

### 7.2.3.1 GFCF

7.32. There is fixed capital formation in agriculture whenever a holder acquires or produces fixed assets which are intended to be used for a period of more than 1 year as a means of production in the agricultural production process. The allocation criterion for the recording of GFCF refers to the user industries and not to the industry to which the legal owner belongs.

7.33. Fixed assets owned by a multiregional unit are allocated to the local KAUs where they are used. Fixed assets used under an operating lease are recorded in the region of the owner of the assets, and those used under a financial lease are recorded in the region of the user (ESA 2010, 13.33).

7.34. New assets being included in fixed capital are entered gross, i.e. without deducting the consumption of fixed capital. In addition, the consumption of fixed capital is generally calculated on those assets. Net capital formation is obtained by deducting the consumption of fixed assets from gross capital formation.

7.35. Production units can sell existing assets to each other, e.g. second-hand machinery. When assets move between industries and regions, the total price paid shall be included in the GFCF in one industry or region and the price received shall be deducted from GFCF in the other industry or region. Transaction costs of ownership of assets, such as legal fees on sales of land and existing buildings, are counted as additional GFCF by the acquirer, even if some of the costs are paid by the seller.

7.36. The GFCF for livestock of a region must be compiled in accordance with ESA 2010 (3.124 to 3.138) and 2.149 to 2.161 of this Annex. The GFCF for livestock is equivalent to the difference between livestock acquisitions over the year (natural growth and purchases outside the region including imports), including those resulting from own-account production, and livestock disposals (for slaughter, sales to other regions, including exports, or any other final use). When all the regions are aggregated, it is important to make sure that interregional flows cancel each other out (excluding ownership transfer costs) so that the sum of all the regional GFCFs is the same as the GFCF of the national agricultural accounts. When the bottom-up method is used, the following applies: sales of animals to agricultural holdings in other regions constitute negative GFCF whereas purchases from other regions are positive GFCF. For the calculation of GFCF for livestock of a region, the recommended indirect method may be used (cf. 2.156).

### 7.2.3.2 Changes in inventories

7.37. Inventories comprise all the assets which are not part of fixed capital and which, at a given moment, are held temporarily by production units. A distinction is made between two types of inventories: input inventories and output inventories (cf. 2.171).

7.38. For animals classified as inventories, the trade to be taken into account in the calculation of changes in inventories includes sales to, and purchases from, other regions as well as imports and exports.

# 7.3 Distributive transactions and other flows

7.39. The practical difficulties of obtaining reliable regional information on distributive transactions in certain cases, in particular when units carry out activities in more than one region, or when the region is not always a clearly defined area in which certain activities are carried out, explain why the ESA covers the regional accounts of the agricultural industry only with respect to a few aggregates: value added, subsidies, taxes, compensation of employees, rents and other income, interest and GFCF.

# 7.3.1 General rules

7.40. The distributive transactions are recorded on an accrual basis, i.e. at the time an economic value, amount due or claim is created, transformed or cancelled or ceases to exist, and not when payment is actually made. That recording principle (based on rights and obligations) is applied to all flows, irrespective of whether they are monetary flows, or whether they occur between units or within a single unit.

7.41. However, when the date on which the claim (debt) is acquired cannot be determined precisely, the payment date or another acceptable approximation of the accrual basis may be used (cf. 3.007).

# 7.3.2 Value added

### 7.3.2.1 General rules

7.42. Value added is the result of the production activity of an economy or of one of its industries during a given period, and it is the balancing item of the production account. It is the difference between the value of output and the value of intermediate consumption. It is a key item in measuring the productivity of an economy or industry (cf. 3.013) or a region or industry within a region.

### 7.3.2.2 Valuation of value added

7.43. Value added may be entered gross (gross value added at basic prices) or net (net value added at basic prices), i.e. before or after the deduction of the consumption of fixed capital. In line with the method for valuing output (basic price) and intermediate consumption (purchaser prices), value added is measured at basic prices (cf. 3.013).

7.44. The use of basic prices means that the taxes on products and subsidies on products must be assigned to specific goods and services, which then have to be allocated among the regions.

7.45. By deducting other taxes on production from the value added at basic prices, and adding other subsidies on production, the value added at factor cost is obtained. Net value added at factor cost constitutes the income of the factors of production (cf. 3.014).

# 7.3.3 Consumption of fixed capital

7.46. In the REAA, goods and services which make up the agricultural holding's fixed capital (such as plantations yielding repeat products, machinery and buildings, major improvements to land, software, costs of ownership transfer of non-produced assets) suffer wear and tear and obsolescence as means of production in the production process. Such wear and tear and obsolescence are measured as the consumption of fixed capital. Similar to the EAA, the consumption of fixed capital shall not be calculated for productive animals.

### 7.3.4 Subsidies

7.47. The REAA apply the same rules as the EAA: flows that are classified as operating subsidies in the EAA are classified in the same way in the REAA, a similar treatment applying for flows in the form of capital transfers.

### 7.3.5 Taxes

7.48. The REAA apply the same rules as the EAA: the different kind of taxes are classified in the same way in REAA as they are classified in EAA.

### **BOX 107 UNDER/OVER-COMPENSATION OF VAT**

The special case of under/over-compensation of VAT is treated in the same way: Under-compensation of VAT is recorded as "other taxes on production" and over-compensation recorded under "other subsidies on production". It is possible that under-compensation of VAT is found for some regions whereas other regions show an over-compensation. Consequently, the total of other taxes on production of all regions can be lower than that of the federal total by the over-compensation amount of individual regions. At the same time, the total of the other subsidies on production is increased against the federal total by this over-compensation amount. However, the EAA total of "other taxes less subsidies on production" (i.e. other taxes on production minus other subsidies on production) should be equal to the sum of the corresponding variables of all regions.

# BOX 108 NUMERICAL EXAMPLES OF UNDER-COMPENSATION OF VAT AT COUNTRY LEVEL AND REGIONAL LEVEL

### **Country level calculation:**

### TABLE 30

# Example at country level calculation

Flat-rate system	Under-comp	ensation	Other subsidies on	Other taxes	Other subsidies on	Other taxes on production with VAT compensation	Net Value Added	Factor income
Sum of deductible VAT in total	Sum of deducted VAT by farmers	Diference	production without VAT compensation	without VAT compensation	production with VAT compensation			
1000	800	-200	5000	2000	5000	2200	10000	12800

### **Regional level calculation:**

### TABLE 31

# Numerical example at regional level calculation

	flat-rate system	under-comp	ensation	Other subsidies on	Other taxes	Other subsidies on	Other taxes	Not Value	Eastor
Regions	Sum of deductible VAT in total	Sum of deducted VAT by farmers	Diference	production without VAT compensation	without VAT compensation	production with VAT compensation	with VAT compensation	Added	income
1.	50	50	0	1000	400	1000	400	500	1100
2.	100	50	-50	1000	400	1000	450	500	1050
3.	150	100	-50	1000	400	1000	450	2000	2550
4.	200	0	-200	1000	400	1000	600	3000	3400
5.	500	600	100	1000	400	1100	400	4000	4700
country level	1000	800	-200	5000	2000	5100	2300	10000	12800

# 7.3.6 Compensation of employees

7.49. For producers, compensation of employees is allocated to the local KAUs where the people are employed. Where those data are not available, compensation of employees is allocated as a second best method, based on the hours worked. If neither compensation of employees nor hours worked are available, the number of employees by local KAU is used (cf. ESA 2010, 13.42).

### **BOX 109 ACCURATE COMPENSATION OF EMPLOYEES**

Using different kind of data sources, such as IFS and FADN, may enable to be more precise in measuring the compensation of employees. Those sources would allow taking into account the different wage levels among farming types and regions. <u>Box 112 Key data sources for REAA (mixed approach)</u> shows an overview of key data sources to compile REAA.

# 7.3.7 Net operating surplus

7.50. Net operating surplus is obtained from net value added at basic prices by deducting the compensation of employees and other taxes on production and by adding other subsidies on production.

# 7.3.8 Interest, rents

7.51. The REAA apply the same rules as the EAA: flows that are classified as interest, rents in the EAA are classified in the same way in the REAA.

# 7.3.9 Agricultural entrepreneurial income: general calculation rules

7.52. Directly payable property income arising from agricultural activities and non-agricultural secondary activities, i.e. interest paid on loans taken out in connection with those activities, including for the purchase of agricultural land, and rents paid to landowners, is deducted from operating surplus from operating surplus (cf. 3.070 to 3.087).

# 7.4 A brief look at implementation

### 7.4.1 Introduction

7.53. This section aims to highlight some aspects of the methodology, in particular the choice of agricultural holding and the measure of output.

7.54. The agricultural holding is the reference unit for statistical surveys on agriculture, at both national and sub-national level. That is a major advantage for the REAA because it means that the valuation of output quantities can be based directly on statistical systems for measuring land areas, yields, herd sizes etc. Choosing the agricultural holding also has the advantage of enabling accounts to be more consistent. Output and costs relate, in fact, to identical sets of units, even if the extrapolation methods vary from one source to another. Lastly, choosing the agricultural holding, together with the concepts of characteristic activities and units, avoids having to make adjustments that might be contentious, as could be the case for kitchen gardens and private non-holder livestock rearing. That convention makes it easier to make comparisons between countries. Indeed, the link with statistical data in physical quantities, which are crucial for agriculture and guarantee that measurements of accounting entries will be consistent because adjustments or 'extra-statistical' corrections are thus restricted, obviously simplifies and improves the calculations. Those aspects are also consistent with the aim of giving priority to the bottom-up approach in the REAA.

# 7.4.2 Defining regional agriculture

7.55. For each region, the agricultural industry consists of all the agricultural holdings whose factors of production are located in the region. That principle, which is consistent with the concept of the residence of production units, may pose a few problems: agricultural statistics usually define the location of agricultural holdings according to their headquarters and not directly according to the location of the factors of production. Those two locations are not always the same and that phenomenon is likely to be more frequent as agricultural holdings get larger. When the REAA are compiled, therefore, some agricultural holdings shall be reclassified between regions and even, in some cases, split up. That is likely to be difficult in practice, in which case it may be preferable to keep the same location for the agricultural holdings as in the statistical surveys. That proposal, however, depends on two conditions: firstly, the method of defining the location must be identical for all the regions in the country and secondly, the accounting entries must all be valued from sources that use the same rules for defining the location of the agricultural holdings.

# 7.4.3 Measuring agricultural output

7.56. Agricultural output includes certain crop products that are used again by the same agricultural holding in the form of intermediate consumption; that concerns mainly products for animal feedingstuffs. For arable crops in particular, regional output may often be determined on the basis of the quantities harvested in each region, those then being given a value via prices. In that case, all output is valued, whether it is intended for marketing outside the industry, sale to other agricultural holdings or use by the same agricultural holding. The output of each region is thus obtained directly, in line with the concept adopted in the EAA and the REAA. The prices by which output forming intra-unit consumption is valued may also be based on regional data, corresponding to the prices at which output is marketed. However, the lack of regional price data poses a general problem when it comes to valuing output, both (regional) output which is marketed and output which forms intra-unit consumption. Thus the REAA valuation of products forming intra-unit consumption raises the same difficulties as the valuation of products that are marketed. Obviously, it is a different matter when the quantities cannot be valued at regional level. In that case, a top-down method based on national-level valuations is generally the only one that can be used (<sup>73</sup>).

7.57. As regards animals, whether they are classified as inventories or fixed capital, the following elements shall be taken into account:

- valuations at regional level of changes in inventories and in GFCF relating to animals, those two flows being components of the indirect method of calculating output;
- valuations of trade in animals between regions, that trade being a component of the indirect method of calculating output;
- the breakdown between regions of the import and export flows of animals;
- the appropriate treatment of ownership transfer costs;
- the method of adjusting the REAA against the EAA.

7.58. In certain cases, the indirect method of calculating animal output can be too difficult at regional level. In such cases, it is better to calculate output on the basis of a model using physical data and then adjust the values to those in the EAA.

# 7.4.4 Inseparable non-agricultural secondary activities

7.59. There are various ways of incorporating inseparable non-agricultural secondary activities into the REAA, depending on the type of activity. Some of those secondary activities are highly concentrated at regional level, for example agricultural product processing. In that case, output valuations of both quantities and prices can rely on local statistical data. For that output, the values in the EAA are de facto the same as those in the REAA. Other cases, however, may be more difficult. For example, there may be no regional source for some activities, especially if they are not concentrated in particular regions from the outset. For other activities, regional data are provided by statistical surveys or micro-economic accounts

(<sup>73</sup>) According to the method used, the intra-unit consumption shall be adjusted to the EAA values.

information (for example the farm accountancy data network ('FADN') but there is no guarantee that those are regionally representative. Furthermore, data may be old with no sources available for reliable updating. Lastly, sometimes qualitative indicators are not available at regional level. In all those cases, the values of the EAA are the starting point for the REAA and the top-down method must often be used.

### **BOX 110 QUALITATIVE SOURCES**

It is also possible that no quantitative but only qualitative indicators are available at regional level. Following the same logic, in those cases, the top-down method could be used.

In case no direct information is available at regional level, qualitative information can be used as last resource. Qualitative sources are usually estimates coming from a panel of different experts, researches or members of the academia. This information should be used with caution when no reliable data sources are available.

### 7.4.5 Intermediate consumption

7.60. Intermediate consumption in the REAA includes agricultural products and services used by agricultural holdings, whether those are directly traded between holders in the same region or different regions or change hands via intermediaries who may or may not become the owners of the products before they are resold. Moreover, some agricultural products of intra-unit consumption are also entered as intermediate consumption, essentially certain crops used as animal feed. Purchases of animals, even of animals that are imported, shall not be entered as intermediate consumption.

7.61. The first method of calculating the intermediate consumption of agricultural products at the regional level is to calculate the difference between the output of the REAA and that part of the output which is intended to leave the industry, on a product-by-product basis (<sup>74</sup>). However, it is not a totally accurate representation of the intermediate consumption of agricultural products in each region, because while agricultural products which come from agricultural holdings in other regions are included, agricultural products which come from agricultural holdings in other regions are not included. Intermediate consumption must, therefore, be adjusted in line with the values in the EAA.

7.62. Another calculation method is also possible, using the FADN as a source of information. That source enables the intermediate consumption of agricultural products to be valued, irrespective of whether they come from sales by other agricultural holdings or from other sources such as imports. However, the FADN does not cover in exactly the same way the products that are used as intermediate consumption by the same agricultural holding, and thus corrections are necessary. Similarly, therefore, intermediate consumption must be adjusted in line with the values in the EAA.

### **BOX 111 INFORMATION ON METHODS USED TO COMPILE REAA**

This box gives a summary of the inventories of the REAA received by Eurostat in 2009 that gives information about the methods used by countries to compile them. The methodological information is available here for the members of the Agricultural Accounts and Prices Working Group:

### Crop output at producer prices

Most countries are using a bottom-up approach for the quantities collected in the context of crop production statistics and national level average prices to obtain the values at regional level. Other sources for breakdown are area information from integrated farm statistics (IFS) and aggregated Standard Output (SO) for the region.

(74) Imported agricultural products (except animals) are excluded.

The bottom-up approach is less predominant for forage plants and for some horticultural crops, depending on what kind of information is available and/or mandatory in the crop production statistics.

As yield per hectare can differ between regions, the bottom-up approach can be seen as the most appropriate method to evaluate the production of crops.

### Animal output at producer prices

Several countries use a bottom-up approach for collecting the quantities of animal and animal products using animal production statistics (livestock and meat and animal products (e.g. milk, eggs), and agricultural price statistics (at national level) to obtain the values at regional level.

Other countries use only the number of livestock in the regions as a source for breakdown (topdown) of the EAA value estimated at national level. One country uses the Standard Outputs for the breakdown.

If production of meat and animal products per head of livestock is almost the same in all regions, the differences between the methods seem to be marginal.

### **Other outputs**

The breakdown of agricultural services, of processing of agricultural products and of other inseparable secondary activities is based on a wide range of different sources, depending on data availability in the individual countries.

### **Subsidies on products**

In several countries, payments of subsidies are recorded at regional level by the authorities in charge enabling, the use of a bottom-up approach.

In several other countries the subsidies recorded at national level are broken down to regional level using the areas in the regions over total area for the specific crop or the regional number of head over total number of head of the different type of livestock.

As the main component in the subsidy schemes in most cases is area or heads, the top-down method also seems to provide a very good quality breakdown.

### **Taxes on products**

The breakdown of taxes on products — where such taxes exist — is mainly calculated using a topdown approach. In general, the values of product-related taxes are low.

### Intermediate consumption

There are a lot of different sources used in the breakdown of the items in intermediate consumption.

A few countries have basic statistics on these items at regional level, meaning that they use a bottomup approach for the regional EAA. However, most countries are using top-down methods.

Roughly speaking, the sources for top-down breakdown are either Account Statistics (FADN/FSDN or similar statistics at national level) or sources (results) from the breakdown of outputs.

For example, the distribution of livestock is in most cases used as the source for breaking down costs for veterinary services and for feedingstuffs, while for example the costs for plant protection or the costs for fertilisers are in some cases distributed according to the value of crop output (or to the quantities or to the areas).

For breaking down costs for maintenance, the breakdown of Gross Fixed Capital Formation is often mentioned as the source. The distribution of arable land is used as a source for breakdown by one country.

The Labour Force Survey (among agricultural service providers) is mentioned by one country as the source for breakdown of costs for agricultural services.

It could seem a little 'risky' to use regional output values as the source for the distribution of intermediate consumption. Differences in output versus input between the regions will not be accurately reflected by such a method.

### **Consumption of fixed capital**

The distribution of the consumption of fixed capital is in most cases linked to the distribution of Gross Fixed Capital Formation. However, the distribution of the CFC for plantations is often broken down using information from crop statistics.

### Income account: Compensation of employees; Taxes; Subsidies; Interests; Rents;

The income accounts consist of very different types of information and sources. The breakdown methods are very different too. In most cases top-down methods are used, if detailed regional statistics are not established.

Accounting statistics or the IFS are often mentioned as sources for breakdown of Compensation of employees and for rent; few countries use results from the regional production account, for example the Total Output or the Gross Value Added.

The item Other Subsidies follows similar patterns to the subsidies for products mentioned above, meaning high quality of breakdown.

Regarding interest, a wide range of sources are mentioned, including items from the regional production account. One country mentioned the distribution of Capital Formation as a source for breakdown.

It could seem a little 'risky' to use data from the regional production account as a source for the distribution of income items. Differences between the regions will hardly be accurately reflected by such a method.

### **Gross fixed capital formation**

GFCF consists of very different types of items and, therefore, a wide range of methods are used for breakdown.

GFCF in plantations is in most cases broken down using crop statistics information, while the breakdown of GFCF in livestock builds on the regional distribution of livestock.

GFCF in materials is in several countries broken down according to surveys (on quantities or on money spent) covering also the regional distribution, meaning a bottom-up approach. In several other cases, accountancy data are used for breakdown (top-down).

### **Changes in inventories**

The breakdown of input and output stocks is most often linked to the breakdown of cereals, wine and livestock for the respective products included in the stocks.

### **Capital transfers**

For the breakdown of capital transfers, a wide range of sources are used, like payment data, budget and state accounts.

### BOX 112 KEY DATA SOURCES FOR REAA (MIXED APPROACH)

The data sources in the <u>Table 32</u> are the main data sources for compilation of REAA but they depend on how REAA are compiled by each country in practice.

In case of top-down approach, EAA data should be the source for all themes.

Regional National Accounts (RNA), National Accounts (NA) and Government Finance Statistics (GFS) should be used as sources, where applicable.

### TABLE 32

# Key data sources for REAA

	Source of data						
REAA Items	SAIO / IFS	FADN/FSDN	Other non- agricultural data sources	Administrative data sources			
Crop output at producer prices	Crop production statistics Agricultural price statistics, IFS	Crops		IACS (Integrated Administration and Control System) Professional boards/ bodies (e.g. wine, sugar beet, tobacco)			
Animal output at producer prices	Animal production statistics, Agricultural price statistics, IFS	Livestock production Animal products and services		IACS (Integrated Administration and Control System) Professional boards/ bodies (e.g. veterinary source)			
Subsidies on products		Subsidies		Regional/national authority responsible to transfer the subsidies: regional level data sources; national level data sources			
Taxes on products		Taxes on products		Tax Authority - national level data source			
Agricultural services output		Agricultural services		Tax authority (VAT)			
Non-agricultural secondary activities (inseparable)	IFS, Utilised Agricultural Area (UAA), Livestock statistics	Other gainful activities directly related to the farms		Regional boards/ bodies of agro- tourism			

		Source	e of data	
REAA Items	SAIO / IFS	FADN/FSDN	Other non- agricultural data sources	Administrative data sources
Total Intermediate consumption (IC)	Statistics on the elements of IC (fertilizers, etc)	Elements of IC		Balance of energy production/supply and use table
Consumption of fixed capital (CFC)	IFS (Vineyard and orchard statistics, building statistics)	Depreciation (total or per category: dwellings, equipment) Inventory, balance account	Monetary indicators (EAA, data underlying EAA, REAA proxy's): GFCF per category Assets (balance account) and CFC per category: PIM per region (proxy)	
Compensation of employees	IFS: AWU salaried EAA salaried AWU Labour statistics, Employment (national accounts)	Wages and social contributions		Tax authorities' data sources (Income taxes) Social security data sources
Other taxes on production	IFS: UAA, AWU,	Taxes		Tax return
Other subsidies on production	IFS: UAA, AWU	Subsidies		Budget and State accounts (e.g. CAP per region)
Interest payable / interest receivable	IFS: UAA, AWU	Interests paid: interests paid, debts Interests received: Interests received, liquid assets		Interests paid: Investment credits (public loans with subsidised interest rates)
Rents and other real estate rental charges to be paid	Land prices and rents statistics IFS: UAA rented	Rents (real estates)		
Gross fixed capital formation	Livestock (dairy cows, other production animals) Vineyard and orchard statistics Building statistics Machinery Statistics	Investments		Car registration( <sup>75</sup> )

(75) For newly registered cars used in agriculture.

		Source of data						
REAA Items	SAIO / IFS	FADN/FSDN	Other non- agricultural data sources	Administrative data sources				
Changes in inventories	Livestock (stock animals) Cereals, fruit, wine stocks; etc	Changes in inventories	Monetary indicators: Output (REAA) per item (e.g. cereals, fodder)					
Capital transfers		Capital transfers		Budget and State accounts (e.g. CAP and other capital transfer per region)				

# EAA Revision Policy

8.01. Revision of data is an essential part of the normal production process for high quality statistics. (<sup>76</sup>) Revisions are broadly defined as any change in a value of a statistic released to the public. (<sup>77</sup>) They are an essential part of EAA compilation, as they enable the incorporation of new, improved information, and provide users with data that are as timely and accurate as possible. However, it is important to strike the right balance between incorporating the necessary statistical revisions and maintaining an acceptable degree of coherence across statistical domains both within each country and across the EU. (<sup>78</sup>) To minimise inconveniences for data users, revisions should follow standard, well-established and transparent procedures.. This chapter provides guidelines for a harmonised revision policy for EAA, including the ALI data.

# 8.1 Legal requirements

8.02. The requirements for producing European Statistics is defined in European Statistical Law (Regulation (EC) 223/2009) which refers to the need for a coordinated release and revision policy. The quality criteria principles for the revision of European Statistics are defined in the European Statistics Code of Practice. The legal requirements on the methodology and data transmissions of EAA stem from Regulation (EC) 138/2004.

# 8.1.1 European statistical law

8.03. Regulation (EC) No 223/2009 (<sup>79</sup>), setting out the legal framework for developing, producing and disseminating European statistics, refers specifically to a revision policy in its Article 16: 'If necessary, a coordinated release and revision policy shall be established in cooperation with Member States'.

# 8.1.2 Code of Practice

8.04. Each ESS data compiler must comply with the European Statistics Code of Practice.

8.05. The mission of the ESS, as defined in its quality declaration and included in the European Statistics Code of Practice, is to 'provide independent high quality statistical information at European, national and regional levels and to make this

<sup>(&</sup>lt;sup>76</sup>) Eurostat's revision policy: https://ec.europa.eu/eurostat/web/quality/quality-monitoring/eurostat-quality-initiatives#expandable-example-content2

<sup>(&</sup>lt;sup>77</sup>) ESS guideline on revision policy for PEEIs, 2013, page 5: https://ec.europa.eu/eurostat/documents/3859598/5935517/KS-RA-13-016-EN.PDF.pdf/42d365e5-8a65-42f4-bc0b-aacb02c93cf7?t=1558683870000

<sup>(78)</sup> Practical guidelines for revising ESA 2010 data, 2019, page 7: https://ec.europa.eu/eurostat/documents/3859598/9530664/KS-GQ-18-012-EN-N. pdf/19dc3542-aa34-4b6b-a981-8a4f244074e8?t=1548838187000

<sup>(&</sup>lt;sup>79</sup>) https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02009R0223-20150608&from=EN

information available to everyone for decision-making, research and debate'. The quality criteria for European statistics (including EAA) are defined in the European Statistical Law (Article 12)

8.06. The Code of Practice defines the following indicators for assessing the quality of revisions:

- Principle 6 'Impartiality and Objectivity': 'Advance notice is given on major revisions or changes in methodologies' (Indicator 6.6);
- Principle 8 'Appropriate Statistical Procedures': 'Statistical processes are routinely monitored and revised as required' (Indicator 8.3); 'Revisions follow standard, well-established and transparent procedures.' (Indicator 8.5);
- Principle 12 'Accuracy and Reliability': 'Revisions are regularly analysed in order to improve source data, statistical processes and outputs' (Indicator 12.3).

8.07. Moreover, according to Principle 14 'Coherence and comparability' (Indicators 14.1. to 14.5): 'European statistics are consistent internally, over time and comparable between regions and countries; it is possible to combine and make joint use of related data from different data sources.'

8.1.3 Regulation of the EAA

8.08. Annex II of the EAA Regulation sets out the transmission program of the EAA. For more details on data transmission, see Chapter 11 of this Manual. Revisions are an essential part of a good compilation practice for the EAA.

8.09. The Regulation defines for EAA the main scope of coherence:

- inside the accounts of EAA;
- among the accounts of EAA;
- between EAA and REAA;
- with other agricultural statistics;
- with the ESA, to allow harmonisation of the EAA both between Member States and with the central framework of the national accounts, with appropriate methodological bridging (<sup>80</sup>), since EAA is a satellite account of the national accounts.

8.10. From a conceptual point of view, full coherence of data is to be achieved, taking into account vintage effects. These coherences should be respected at each stage of dissemination.

### **BOX 113 VINTAGE EFFECT**

Vintage effect means that data compiled at different points in time are not consistent/coherent with each other. In practice, vintage differences may occur, for example between EAA and national accounts or other agricultural statistics, as they are compiled at different frequencies and different times of the year. (<sup>81</sup>) -However, these differences should be reduced to a minimum level through cross domain consultations.

8.11. In the process of EAA compilation, the following types of revisions can be distinguished:

- routine revisions;
- major revisions.

# 8.2 Routine revisions

8.12. Routine revisions are changes in published data which are related to the regular data production process. For example, estimated values for missing data are replaced by reported figures. In this context, EAA data are required 3 times for each reference year.

- (80) See Practical guidelines for revising ESA 2010 data, 2019, page 18. And figure 4.1 at page 15
- (81) See Practical guidelines for revising ESA 2010 data, 2019, page 14.



- 8.13. Routine revisions do not encompass major methodological changes from one year to the other.
- 8.14. Routine revisions and their proper interpretation are important for users and even for producers of statistical data.
- From the user's perspective, revisions improve the information available and are therefore welcomed. However, they may also lead to an adjustment of measures used in economic analysis and may result in a different assessment of the state of the economy, which includes the economic performance of agriculture.
- From the compiler's point of view, the new information resulting from revisions defines economic developments more precisely, but frequent revisions can damage data credibility. Moreover, an absence of revisions can also highlight that indicators, for which more accurate source data are available, are not being updated and errors are not being corrected. (<sup>82</sup>)

## 8.2.1 scope and length of routine revisions

8.15. Routine revisions should follow a revision policy and published according to a publicly available, pre-announced release/revision calendar (e.g. each time a new data point is published, the revised data for the previous period are also published).

8.16. Following the data transmission table (Annex II of the EAA Regulation), the routine revisions should be limited to maximum length of:

- 4 years at the second estimates including revision of the first estimates.
- 4 years at the full set of EAA required by end of September including revision of the second estimates.

### **BOX 114 COHERENCE WITH NA BY SEPTEMBER N+2**

According to the current data transmission programme, annual NA data for year n are required by end of September of year n+1, exactly as the full set of EAA. Given the identical deadlines, it may be difficult to achieve coherence between NA and EAA for the most recently compiled year (i.e. data for reference year n at September n+1). However, EAA data should be coherent with NA for the reference year n by September of year n+2.

8.17. This means that no revisions are expected at the first estimates for year n transmitted to Eurostat by the end of November year n.

8.18. At the second estimates, transmitted to Eurostat by the end of March of year n+1, routine revisions refer to the first estimates of year n and potentially years n-1, n-2 and n-3.

8.19. When compiling the full set of EAA for year n, which are transmitted to Eurostat by the end of September year n+1, routine revisions should be limited to revision of the second estimates of year n and potentially years n-1, n-2 and n-3. At that point of time, REAA should also be consistent with EAA for the corresponding years.

### **BOX 115 FLEXIBILITY IN LENGTH OF ROUTINE REVISIONS**

If routine revisions would lead to breaks in a time series, they should be considered as major revisions. If the revisions are justified and cannot be included in regular benchmark revisions, they should be handled as non-scheduled major ad-hoc revisions.

(82) See Practical guidelines for revising ESA 2010 data, 2019, page 28.

# 8.2.2 Practical guidelines

8.20. Figure 7 presents a decision tree containing the main decisions and steps that compilers of EAA and REAA should take when they incorporate updated information and revise their data. Rectangles represent decisions that must be made, while rounded boxes represent steps/states of the flowchart. Although the backbone of the chart follows the general flow of routine revisions as outlined in Figure 6.1 in the document 'Practical guidelines for revising ESA 2010 data (2019)', it is modified to allow for some unique aspects that relate to the compilation of EAA/REAA.

8.21. In the first part of the chart, an analysis of the newly available information is performed to determine if it corresponds to an already known data source or to a new one. This analysis allows compilers to decide whether the revision is a routine revision or a benchmark revision.

8.22. The second part of the chart examines whether the revised data are fed into all domains linked to EAA and whether systematic checks on the plausibility and impact of revisions are integrated into the production process. As soon as the compilation of the EAA has been completed, data should be checked for cross-table consistency and coherence.

# FIGURE 7 EAA / REAA Routine revisions



# 8.3 Major revisions

8.23. Major revisions are the introduction of data sources or the methods used to estimate EAA. These can cause discontinuities in time series and impact the comparability of EAA and REAA data, and with other statistical domains (such as NA) within, and across countries.

8.24. As outlined in the 'Practical guidelines for revising ESA 2010 data' handbook, major revisions are divided into major ad-hoc revisions and major regular revisions. The latter one is also referred to as 'benchmark revisions'.

8.25. Both major ad-hoc and benchnmark revisions should generate 'entire time series' (or as far back as possible). For example, a benchmark revision disseminated in 2024 should cover as many previous years as possible, and not only some years. A comprehensive update of relevant sources and methods may affect the EAA and REAA data.

8.26. Major ad-hoc revisions are major unscheduled revisions due to methodological changes (e.g. introduction of a new ESA, which would influence the compilation of EAA) or special events (e.g. EU enlargements). Usually, during these revisions, new or changed basic data sources and/or new estimation methods are also incorporated. These major ad-hoc revisions should be coordinated at the level of the relevant expert group (e.g. agro-monetary Working Group under the guidelines of the Directors Group of Agricultural and Fisheries Statistics) based on an agreed timetable.

8.27. Major regular revisions take place on a regular basis to incorporate the results of changes in basic data sources, including the availability of a structural source that is only collected at long intervals and/or new estimation methods.

8.28. A revision is defined as a 'benchmark revision' when the following conditions are all true at the same dissemination:

- Time series cover a large number of years, and in any case more than the four years defined for routine revisions;
- All pending classification issues have been resolved/implemented;
- Major changes in sources or in compilation methods, if required, have been implemented;
- Errors identified at an earlier stage have been corrected.

# 8.3.1 A harmonised benchmark revision

8.29. A harmonised benchmark revision is a coordinated, EU wide, regular major revision.

8.30. A harmonised benchmark revision should ensure that a maximum degree of coherence (within EAA, across Member States and between EAA and other statistical domains, including NA) of disseminated results is achieved at least once every four years.

8.31. The benchmark revisions of EAA should be coherent with those of NA. Additionally, in countries where IFS is a main source of data for the EAA, particularly (but not only) for ALI; revisions are required for years where IFS data become available. Chapter 4 of this manual describes benchmarking techniques that can be considered for this exercise.

# 8.3.2 Recommendations

### 8.3.2.1 Timing of revisions

8.32. Benchmark revisions should be implemented at a time that takes into account the schedule of benchmark revisions to NA and the IFS.

8.33. Due to NA benchmark revisions, EAA benchmark revisions should coincide with the implementation of benchmark revisions to NA. The current revision policy of NA lays down that benchmark revisions take place in years ending with '4' and '9'. Member States should apply years ending with '0' and '5' as benchmark years based on the case in national accounts. For example, a benchmark revision would take place in September 2024 with the benchmark year 2020 for both EAA and NA. Changes in revision policy of NA as regards benchmark revisions would trigger changes in the EAA revision policy for benchmark revisions.

### **BOX 116 BENCHMARK YEAR AND IMPLEMENTATION YEAR**

The benchmark year "t" (e.g. 2020) is the most recent year for which all relevant information are available. The implementation year "t+4" (e.g. 2024) is the year when the results of the benchmark revision are published. In case of the benchmark revisions due to the availability of Agricultural Census, the implementation year is the year "t+2".

8.34. As the IFS can be one of the main sources of EAA data, this should be considered when developing an EAA revision policy. Agricultural Census collects data on all farms and farmers every 10 years, usually in years ending with '0'. In addition to this, sample survey are also usually conducted for years ending with '3' and '6', or every year. When Agricultural Census results become available, wider revisions back at least 10 years may be needed, resulting in a benchmark revision. Revisions stemming from sample years would be integrated into the routine revisions cycle.

### **BOX 117 EXAMPLE: TIMELINE FOR REVISIONS**

<u>Table 33</u> below shows the timeline for revisions for a country which conducts the Agricultural Census for reference years ending with '0' and also two sample surveys in between. Furthermore it contains the revisions due to NA.

### TABLE 33

# Timeline for revisions related to IFS and NA

Year	Ro dı	utine revisions ue to IFS 2023	IFS info	Routine revisions due to IFS 2026		o Routine revisions Revision due to due to IFS 2026 Census		Revision due to Agricultural Census	Revision due to NA
2021	n-4	Routine revision					Routine revision		
2022	n-3	Routine revision	Census 2020 available			Benchmark revision	Routine revision		
2023	n-2	Routine revision	IFS year				Routine revision		
2024	n-1	Reference year		n-4	Routine revision		Benchmark revision		
2025	n	Implementation year	IFS available	n-3	Routine revision		Routine revision		
2026			IFS year	n-2	Routine revision		Routine revision		
2027				n-1	Reference year		Routine revision		
2028			IFS available	n	Implementation year		Routine revision		
2029							Benchmark revision		
2030			Census year				Routine revision		
2031							Routine revision		
2032			Census available			Benchmark revision	Routine revision		
2033			IFS year				Routine revision		

8.35. Benchmark revisions, either three times per decade or carried out at shorter intervals (due to national revision policies), should be disseminated in line with the (harmonised) annual revision cycle. The results of a benchmark revision should be added to the annual revision cycle as part of the routine revision practice. This means that benchmark revisions should be implemented within the transmission of the full set of EAA by September of year n+1.

### 8.3.2.2 Length of time series and cross domain coherence

8.36. Coherence is one of the key elements of revision. Therefore, the whole time series and every level of detail should be coherent and revised back. However, this may not always be possible. The coherent time series should cover at least the last 10 years and earlier if possible.

8.37. When the results of a (harmonised) benchmark revision are disseminated, the EAA and the REAA data should be aligned for the same period (at least 10 years). REAA should be revised at least as far back as 2021, the first reference year covered by the EAA Regulation for REAA.

8.38. The major revision should aim to cover coherent time series between EAA and other agricultural statistics, EAA and NA, and EAA and other statistics.

8.39. Close cooperation between EAA and NA compilers is a precondition of coherence. Whether the EAA, REAA and the NA are produced in the same institution or not should not make any difference to data coherence.

### 8.3.2.3 National major revisions

8.40. Members States should not carry out more than one major revision within a period of two years.

### 8.3.3 Practical guidelines

8.41. Figure 8 shows the main steps and decisions to be taken when carrying out a benchmark revision in EAA/REAA. This decision tree is comparable to figure 5.1 published in national accounts' 'Practical guidelines for revising ESA 2010 (2019)' document but allows for specific aspects of EAA. Rectangles represent decisions that must be made, while rounded boxes represent states of the system.



# FIGURE 8 EAA / REAA Benchmark revisions



# 8.4 Communication

8.42. As part of their quality reports, countries must provide information on their revision practices. This reference metadata should describe revision policies related to both major revisions and routine revisions.

8.43. Incoherences should be as limited as possible and temporary, i.e., data should be aligned with a retransmission as soon as possible for regular revisions.

8.44. If there are incoherences, countries are asked to explain any significant difference in reference metadata. Namely, they should be part of the national quality reports submitted to Eurostat and made available to all users.

8.45. Benchmark revisions should be planned in order to avoid incoherent time series. If this is not feasible, a staged dataset release that first aligns the most recent years and later the back data series might be acceptable. In such cases, flags for breaks in series and metadata would need to be introduced to describe data coherence and comparability.

# 8.4.1 REAA Specific provisions

8.46. REAA are usually compiled after the EAA and published with a one-year time lag. That is, in September of year n, EAA and REAA are submitted for years n-1 and n-2 respectively. In that release, EAA and REAA data up to year n-2 should be consistent.

8.47. REAA should follow the same cycle for routine and benchmark revisions as EAA. When implementing routine revisions for the EAA, these have to be incorporated into the next delivery of REAA.

8.48. Occasionally, there could also be revisions to REAA for previous years without any corresponding changes to EAA, if new data sources are used for the regionalisation of national figures.

8.49. Changes to the NUTS classification impact the REAA, which will then need to be revised accordingly. The resulting revision should cover as many years as possible, with an absolute minimum of three years.

8.50. A benchmark or other major revision of regional NA can imply a revision to REAA. Due to the fact that regional NA are compiled later than REAA, vintage effects can occur until the next compilation of regional NA or REAA. This should not extend more than one year. When REAA serve as an input for regional NA, cross-coherence with regional NA is also recommended.

8.51. Adequate planning should make possible the alignment of REAA with EAA benchmark revisions. In exceptional cases where this may not be feasible, a staggered REAA release that first aligns the most recent years (with a minimum of 3 years) and later the back data, should be conducted. As the REAA legal requirement dates from reference year 2021, that is the minimum requirement for REAA and EAA consistency.



# 9.1 Introduction

This chapter refers to specific instructions for processes that are run by Member States to compile EAA. In this chapter table 1, table 2 and table 3 are regarding the elaboration tables that can be found in Annex 2 of this manual.

# 9.1.1 Compilation of the EAA

9.01. Transactions related to the products used to compile the EAA production account, i.e. the value of output and intermediate consumption, can be recorded using a series of tables showing the quantities, prices and values of the products of the various activities. For this purpose, there are three calculation tables for the EAA in Annex 2. The use of these tables is optional, although they could be useful to the Member States during the compilation of their accounts. They also make it possible to verify the consistency of the data on the resources and uses of the various agricultural products.

9.02. During the compilation of the elaboration tables for EAA, output is progressively broken down by the different items of a minimum list, first in terms of quantities (in table 1 of the EAA elaboration tables) and then in prices and values (in table 2 of the EAA elaboration tables). Table 1 and in table 2 also show the corresponding codes used in this manual and in the Regulation.

# FIGURE 9

# Schematic representation of resources and uses of agricultural products in manual

Gross output (1q)							
Losses (2q)	Usable output (3q)						cks (IS) )
-	Total available resources (5q)						
	Intra-unit	Processing	Own final	Total Sales	S(*)	Final stocl (14q)*	ks (FS) ***
	(9q=6q+7q+ 8q)***	(10q)***	(11q)***	(12q=12q1+12q2 +12q3)***	(13q) <sup>***</sup>	FS-IS (**) (16q)	

(\*)  $\mathsf{S} = \mathsf{Own}\text{-}\mathsf{account}$  produced fixed capital goods

<sup>(\*\*)</sup> FS-IS = Change in inventories. In the above diagram, the final stocks are assumed to be greater than the initial stocks

<sup>(\*\*\*)</sup> For intra-unit consumption, processing by producers, own-final consumption, total sales, S and FS the codes in this manual differ from the codes in Regulation (EC) 138/2004



The Regulation, contains the same figure with different codes (under point 2.037). Table 6 Mapping of the codes in the Regulation and the manual shows the codes used in the Regulation and manual. Figure 9 in this chapter shows the codes used in the manual and it is in line with the elaboration tables. This figure is identical to Figure 2 Schematic representation of resources and uses of agricultural products according to the manual shown in chapter 1 of this manual.

9.03. The elaboration tables provide an indication of the method of calculation: the quantities are multiplied by the corresponding prices to give the values. The subdivision into rows, by activity or group of activities, is the same in the two tables and corresponds to the minimum list determined by Annex II of the Regulation. The list of products used by countries can be more detailed in accordance with the relevant and available information on products.

9.04. The aggregation of the necessary data is only possible on the level, where the indications of quantities or prices for the groups of activities are still meaningful. There are several lines for which quantitative data are not applicable (for example, in the case of "Plantations" only the value of fixed capital assets created by planting of orchards, vineyards, etc. should be recorded).

9.05. The two tables differ in the layout of their columns. The first part of elaboration table 1 concerns the calculation of the resources of the products of agricultural activities during a given period, based on data related to gross output, losses during processing and stocks at the beginning of the period.

9.06. The second part of the table 1 concerns the use of these products. Distinctions are made between intra-unit consumption and other uses such as the processing of agricultural products into non-agricultural products on the holding, own final consumption of agricultural products by holders' households, own-account production of fixed capital goods (e.g. breeding animals), sales outside the industry, sales abroad, and sales to other agricultural units. The intra-unit consumption is separated for data for seeds, planting stock, animal feedingstuffs and others (e.g. olives for olive production). Stocks of agricultural products at the end of the given period also constitute a use and are therefore included. By deducting initial stocks from final stocks, changes in inventories are obtained. In the third part, output is calculated from the data in the first two parts of the table 1.

9.07. The first part of elaboration table 2 contains the prices per unit of quantity of the various products of activities or groups of activities. It concerns each of the categories of use listed in Table 1 with special prices for domestic sales and exports. A quantitative evaluation of intra-unit consumption by the agricultural units is necessary if it is recorded under industry output (cf. 2.49. to 2.58. and 2.76.).

9.08. The first part of table 2 contains the prices, while the second part of table 2 is the summary of table 1 and the first part of table 2. The quantities in table 1 are multiplied by the corresponding prices in table 2. In table 2, production is valued not only at current prices (for the current year n) but also at the prices of the preceding year (n-1).

9.09. Table 3 of the elaboration tables shows the breakdown of intermediate consumption into the different categories of goods and services used during the production process. Only the data related to value are needed. The actual consumption of intermediate consumption goods to be recorded corresponds to the difference between purchases and changes in input inventories on the agricultural holdings. Data in current prices and in prices of the preceding year have to be provided for all the three components.

# 9.1.2 Complete and minimum lists for EAA

9.10. The complete list of activities covered by the agricultural industry (cf. 1.60 to 1.63), the exhaustive lists of components of intermediate consumption and gross fixed capital formation are set out in separate annexes (Annex 1). The complete list of agricultural activities has been reduced to a "minimum" list based on Division 01 of NACE Rev. 2 and in line with the Regulation. The detailed list of intermediate consumption and gross fixed capital formation have been reduced to a "minimum" list as defined in Annex II of the Regulation on EAA. These "minimum" lists must be used in the data transmission tables (cf. chapter 11, EAA data transmission 11.3.1).

### 9.1.3 Data sources

9.11. The main sources used for the compilation of the EAA are agricultural statistics and administrative sources.

The evaluation of crop output can normally be based on resources, i.e. the estimate of quantities produced (harvested) based on estimates of areas under crops and yields, or on uses, i.e. on estimates of purchases by the user branches of agricultural products, exports net of imports, to which should be added certain quantities used for intermediate consumption by the agricultural industry, changes in producers' inventories and use for own account (most of which is own final consumption). The latter approach can be proved as highly appropriate in cases when the buyers of these agricultural products are readily identifiable and the four other components of uses are limited (for example, products requiring preliminary processing before they can be used, such as sugar beet, tobacco, etc.). Nevertheless, a physical balance sheet is necessary in order to verify the consistency and reliability of the data.

9.12. Statistics on slaughtering, exports, imports of live animals and the size of herds are the main sources of data for measuring the output of animals. The output of animal products (mainly milk) is generally estimated using sales to user branches (dairies, packers) due to the specific use.

9.13. Agricultural Price Statistics is the main source for the valuation of agricultural output as well as intermediate consumption. Prices and price indices are also an important source for compiling values at the prices of the preceding year.

9.14. Most of the intermediate goods that form part of the EAA can only be used in agriculture (seeds and planting stock, fertilisers, pesticides, etc.). In this case, purchases by the agricultural sector are based on the data relating to sales by the economic branches which supply these intermediate goods (after inclusion of external trade).

9.15. IFS is normally the main data source for agricultural labour input data. In years when the survey is not carried out, there is often some part of the structure survey on agricultural holdings carried out for national purposes (for example, often specific to labour). In some Member States, these are sample surveys, in others exhaustive surveys.

9.16. FADN/FSDN can be a source that contributes to the valuation of intermediate consumption and the elements of the income account.

9.17. Administrative information is also an important source. For example, in the case of subsidies and taxes.

9.18. Expert estimates can be also used to complete the available sources, often for adjusting sector coverage.

9.19. Regional data calculation varies from country to country. Specific data collections can be organised for compiling the regional EAA or they can be compiled as a breakdown of the national EAA. More details can be seen in chapter 7, Box 111 and Box 112.



# **10.1 Introduction**

This section describes the structure of the EAA data sets.

# **10.2 Dataset structure definition**

The dataset structure definition (DSD) identifies the dimensions, attributes and measures in a data set, and associates them with common code lists and concepts. The structure of the EAA data sets is based on:

- The reference area (countries or regions at NUTS 2 level).
- The reference period (calendar years).
- The general structure of the EAA items (Annex II of Regulation (EC) 138/2004).
- The units of the values (millions of national currency or thousands of annual work units).

Eurostat is currently developing Statistical Data and Metadata eXchange (SDMX) compatible DSD and transmission protocol for EAA.

# 10.3 Data types

The data types are numeric values with no thousand separator. Eurostat recommends to submit a minimum of two decimal positions separated by a point. The value for "non existent" (actual zeros) or "non significant" variables (actual values of less than half of the unit used) should be 0.

The current EAA DSD allows non-numeric values in case of variables which are not applicable (e.g. olive oil in Finland). In that case, the value is 'nd' which stands for "not defined". Exceptionally, when data are 'not available", that is, the product in question exist and it is significant but data could not be collected, the concerned field can be filled in with 'na'. Those are non-standard codes which will be discontinued when the SDMX is introduced for the EAA.

# Data transmission

# **11.1 Introduction**

EAA data sets are to be transmitted 4 times per year using the templates provided by Eurostat and following the guidelines for transmission included therein. This chapter summarises the main features.

# **11.2 Deadlines**

According to Regulation (EC) 138/2004 data for reference year "n" are required by:

- EAA first estimates: 30 November of year n;
- EAA second estimates: 31 March of year n+1;
- EAA: 30 September of year n+1;
- REAA: 30 September of year n+2.

For countries that received a derogation from the Regulation, the REAA deadline is mandatory from 2025. In their case the REAA are required for the first time by 30 September 2025 for reference year 2023.

## TABLE 34

# Deadlines for the transmission of EAA data

Collections	Dataset name in EDAMIS4	Deadline for countries for reference year n
EAA first estimates	COSAEA_AGR1_A	30 November year n
EAA second estimates	COSAEA_AGR2_A	31 March year n+1
EAA data	COSAEA_AGR3CUR_A COSAEA_AGR3CON_A	30 September year n+1
REAA data	COSAEA_REGION_A	30 September year n+2



# **11.3 Templates**

### **11.3.1 EAA data transmissions**

All EAA related data sets are to be reported in Excel-based standard data transmission tables (SDTT). The SDTT are updated every year and the latest versions can be found in the Data transmission folder of the public Agriculture\_Statistics\_Projects interest group on CIRCABC collaborative tool. Instructions on files and transmission process are given on the 'READ ME' sheet of the template files.

The following templates are available for data transmissions:

- EAA first estimates: COSAEA\_AGR1\_A.xlsx
- EAA second estimates: COSAEA\_AGR2\_A.xlsx
- EAA at current prices: COSAEA\_AGR3CUR\_A.xlsx
- EAA at prices of previous year: COSAEA\_AGR3CON\_A.xlsx
- REAA: COSAEA\_REGION\_A\_NUTS2022.xlsx

EAA first and second estimates: The template is used for reporting EAA estimates for year n, both at current prices and at the prices of the previous year. This template also contains current values for year n-1, volume and price indices and the GDP implicit price index concerning the year n. If the data for year n-1 need to be revised, the full revised EAA data sets both at current prices and at prices of the previous year are required.

EAA at current prices: This template is used for reporting detailed EAA for the reference year at current prices. This template also allows reporting revised values for the time series. If a year's data is revised, all subsequent year's data have to be included in the template even if there are not any revisions for those years.

EAA at prices of previous year: The template is used for reporting detailed EAA for the reference year at previous year prices. Revised values may be provided for time series in this table. If a year's data is revised, all subsequent years' data have to be included in the template even if there are no revisions for those years.

REAA: This template is used for reporting REAA values at current prices for the reference year. On the first data sheet the proper country code has to be selected from the drop-down menu to reveal the corresponding regions at NUTS 2 levels according to the NUTS classification.

### 11.3.2 GDP implicit price index in EAA data transmissions

The GDP implicit price index has to be reported together with the first and second estimates of the EAA.

The source of the GDP implicit price index is the Eurostat database of national accounts. If the requested GDP implicit price indices are not available yet in the Eurostat database, the source is the AMECO online database, which is the annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs.

It's important to select and use all decimals. After extracting the data, please divide the GDP price deflators of the reference year (e.g. 2023) by the previous year (e.g. 2022) choosing the current base (e.g. 2015=100) and multiply by 100; e.g. EU = 116. 4396843/110.6813091\*100=105.2026627.

The countries should inform Eurostat if they use another data source.

### 11.3.3 Comments sent together with the data

A template for comments accompanying the transmitted data can be found in CIRCABC. The aim of these comments is to describe potential outliers, unusual development of data and the reasoning of the revisions provided (if any). Meaningful comments help to understand the data evolution and facilitate the validation process.

# **11.4 Completeness**

Data submissions are required to be complete, accurate and timely, in order to support the production of high-quality European statistics. To achieve completeness, national providers should adhere to Eurostat's data requirements, provide timely and reliable data and ensure that their data is consistent with Eurostat's quality standards. Eurostat provides guidance and support to national providers to ensure the completeness of their data submissions, through the development of data validation tools and the provision of training and technical assistance.

The completeness of the file is verified upon receipt, measuring the extent to which all needed statistics are available. Statistical variables are mandatory according to the item list in Annex II of the Regulation. For output items (including sub-items), the value at basic prices as well as its components (value at producer prices, subsidies on products and taxes on products) shall be transmitted.

# 11.5 Flags for data transmission

The labelling of different data status is commonly called 'flagging' as certain codes are introduced to the data entry submitted. Confidentiality flags are not applicable for the purpose of EAA statistics. The current templates only allow the use of 'b' flag (indicating break in time series) in the cells next to the values. If necessary, the flag has to be introduced by using a tilde sign '~' between the value and the flag. It is mandatory to use the exact tilde character specified in the templates on the READ ME sheet. Data senders should consult Eurostat before introducing any new flag.

# **11.6 File naming conventions**

The name of SDTT files of EAA data sets should follow the EDAMIS file naming convention:

DOMAIN ID\_Dataset ID\_periodicity\_FROM\_YEAR\_PERIOD \_OPTION.format.

- DOMAIN ID: COSAEA
- Dataset ID: AGR1, AGR2, AGR3CUR, AGR3CON or REGION
- Periodicity: A (annual)
- FROM: country ISO 2 code
- Year: reference year
- Period: 0000 for all annual reports.

The year in the file name should correspond to the reported year in the file. For time series revision, the year in the file name should be the year last reported in the file. The OPTION part does not have to be filled in. For example, the file name of transmission of EAA data at current prices from Portugal for the year 2023 is: COSAEA\_AGR3CUR\_A\_PT\_2023\_0000\_V0001. xlsx.

Please find more details under the EDAMIS user guide corresponding section.

# **11.7 Transmission method**

The EAA data should be transmitted from national data providers to Eurostat through EDAMIS (Electronic Data files Administration and Management Information System), an integrated family of IT applications, which assure secure transmission of data files, as well as monitoring and delivery to production units.

Information about EDAMIS or data transmission to Eurostat in general can be found in the dedicated section of Eurostat's CROS site. Support team of Eurostat can be contacted directly (ESTAT-DATA-METADATA-SERVICES@ec.europa.eu).



# 11.8 Revision

The aim of revisions is to improve data quality of a value of a statistic released to the public. They generally aim at correcting erroneous data or improving the completeness of the data and replacing estimates by collected data.

Data can be revised according to national needs and practices. Major revisions, i.e. due to methodological changes are subject to approval. The revised data are transmitted to Eurostat through the same channel as the current data at the time of the usual reporting exercise. A justification of the revision is required. After validation of new received data, the dissemination database is updated.

Chapter 8 provides details on the EAA revision policy.



# **12.1 Introduction**

This Chapter presents the validation process run by Eurostat on the transmitted data files. For more details on the principles, please see the Eurostat methodology for data validation

# 12.2 Data validation activities

The main objective of this is to ensure a high level of quality of the published data according to the definitions and methodological data requirements as well as the established classification by the ESS. Data validation process is carried out at several phases as described in Figure 10.

### FIGURE 10

# Graphical representation of validation levels



Source: European business statistics manual, Data validation in business statistics, Figure 2 Data-validation-in-business-statistics.pdf (europa.eu)
#### 12.3 Validation procedure

EAA data received from the countries are validated by Eurostat. Any question that arises is discussed bilaterally with the competent experts of the countries. Following the data analysis described in the sub-sections below, Eurostat contacts data provider if necessary requesting corrections or explanation of the provided figures. Eurostat aims to clarify all questions that arise during the validation process, to ensure the quality of the disseminated data.

#### 12.3.1 Structural validation

Structural validation (level 0) focuses on formal aspects of the data. It ensures that the file, its structure and content have the agreed format and consistence with the expected IT structural requirements. Currently only transfers of templates as provided by Eurostat (CIRCABC) without structural modification of the columns and rows can be accepted. Values transmitted in the table should have alphanumeric format, formulas are rejected in the database. Currently, the structural checks of the data sets are performed once the files have been accepted by Edamis. That means there is no automatic reporting on the structural checks for the time being.

#### 12.3.2 Basic content validation

As regards validation level 1, consistency checks are built-in validation checks in the EAA data transmission excel templates. Those checks highlight inconsistent figures at the time when these tables are filled in and indicate the incompleteness of the data set. These basic content checks indicate discrepancies within the same data set which should be corrected prior data transmission.

Other consistency checks at this level, that is, within the same dataset, are necessary but they do not follow strict validation rules that would lead to an error in the data set. Rather, those type of checks would lead to a plausibility check that requires an explanation from the data sender. Examples of those are that the animal output value is consistent with the evolution of animal feedingstuffs and veterinary expenses or that subsidies and tax volume indices are consistent with output volume indices.

#### 12.3.3 Higher level validation performed

Eurostat performs further (level 2) validation checks after the data transmission. The submitted data sets are compared against the corresponding time series in order to detect potential outliers. Additionally, analysis of different data sets submitted by the same data provider (also level 2) are very important in the validation exercise. Namely, they consist in analysing differences between first and second estimates and between these and the full set of EAA sent in September. Data providers are encouraged to submit an explanation together with the data in case of significant discrepancies. Moreover, Eurostat analyses the magnitude and plausibility of revisions.

Validation checks of data sets within the EAA domain (level 3) consist of cross-country comparisons. The evolution of volumes, values and prices is expected to follow similar patterns in different countries, especially in the case of geographical proximity.

Data validation between domains within the same organisation (level 4) are carried out:

- Cross domain validation to ensure consistency with other agricultural statistics: Agricultural price, crop production, animal production statistics and IFS.
- Cross domain validation with non-agricultural domains: mainly with national accounts statistics and Labour Survey statistics.

Finally, consistency checks (level 5) between data sets coming from different organisations are performed in case of countries where national data providers differ between EAA, other agricultural statistics and non-agricultural statistics. The logic of the validation carried out is the same as described in levels 3 and 4 above.

#### TABLE 35

#### Non-exhaustive list of validation checks carried out on EAA data

Validation Label	Dataset	Validation Scope
Year_check	AGR3	Year sent in Edamis corresponds to the last reported year in table
Mandatory_data	All	Values are reported according to the regulation
Negative_data_check	All	Values reported in production account are positive numbers
ltem_consistency_l	All	Check of new items reported or items not reported anymore
Basic_prices_check	All	Output items: Basic price = Production price + Subsidies- Tax
Aggregation_checks	All	Parent item = SUM of children items
GDP_check	AGR1/AGR2	GDP reported compared to AMECO calculation
Index_checks_outliers	All	Value/Price/Volume any meaningful changes (+15%)
ltem_consistency_ll	All	Output items are coherently reported (Producer price, Subsidies, Tax, Basic price): value/NA/ND/zero
Time_series_check	All	Year-to-year check;
Revisions_check	AGR2/AGR3/REGIONAL	Value changes compared to previous reporting (+15%)
Regional_aggregates	REGIONAL	Country value = SUM of regional values
Regional_consistency	AGR3/REGIONAL	Country value in regional data = EAA country value
ALI_check	AGR1/AGR2/AGR3	ALI trend compared to Compensation of employees
SUB_TAX_Volume_Check	AGR1/AGR2/AGR3	Subsidies and Tax volumes are reported consistent with production volumes
AGRI_Services_check	All	Comparison of agricultural services (15100-19090)
Volume_check	AGR1/AGR2/AGR3	Check if current values are not reported same as values at previous year prices
Crop_input_output_check	AGR1/AGR2/AGR3	Comparison of Crop output value with sum of Seeds, Fertilisers and Plant protection
Animal_input_output_check	AGR1/AGR2/AGR3	Comparison of Animal output value with sum of Animal feedingstuff and Veterinary expenses
Forage_plant_check	AGR1/AGR2/AGR3	Comparison of value of Forage plants and consumption of Feedingstuff
GFCF_other_check	AGR1/AGR2/AGR3	Comparison of other GFCF with Fixed capital consumption, others
GFCF_plantation_check	AGR1/AGR2/AGR3	Comparison of GFCF in plantations with Output in plantations
GFCF_animals_check	AGR1/AGR2/AGR3	Comparison of GFCF in animals with Output in animals

#### **12.4 Validation outcomes**

Data validation is a decisional procedure that assesses the plausibility of the data ending with an acceptance or refusal of data set as validated. When a data is deemed too far from the expected value (i.e. the value falls outside the confidence band or exceeds the reference threshold), Eurostat contacts the concerned reporting country in order to receive clarifications and confirmation of the data correctness or revision of the transmitted file.

#### 12.5 Compliance assessment

Eurostat conducts regular assessments of the collection (availability and timeliness of the data) and validation (requests for revisions) of EAA as a part of the process management with the aim of improving data quality. This analysis also relates to compliance with the Regulation and the reported metadata.

The expert groups (Working Group, DGAS) are also informed about compliance of the countries to the legislation, in order to highlight the possible issues they may face and also to anticipate possible future legal actions.

Where evidence of non-compliance with the methodology is found, Eurostat might consider the received data as non-publishable. Especially, if this data is not comparable/coherent with other countries data sets, and therefore non-usable for aggregation of the EU results.

#### 12.6 Data storage

After receiving EAA data sets from the countries, they are processed and stored in a database, which access is restricted to staff members performing data validation, processing and dissemination. When ready, data are published in Eurostat's internet database: https://ec.europa.eu/eurostat/databrowser/explore/all/agric.



#### **13.1 Introduction**

Regulation (EC) No 223/2009 provides a reference framework for European statistics and requires Member States to comply with the statistical principles and quality criteria specified in that Regulation. Quality reports are essential for assessing, improving and communicating on the quality of European statistics. The European Statistical System Committee (ESSC) has endorsed a European Statistical System (ESS) standard for Quality Reports Structure, in accordance with Article 12 of Regulation (EC) No 223/2009. That ESS standard should contribute to the harmonisation of quality reporting under the EAA Regulation.

An implementing act is currently under preparation to standardise procedures on quality reporting and to define the modalities, structure and assessment indicators for the quality reports. Quality reports under the Regulation are required by 31 December 2025 with reference year 2023 and every 5 years thereafter.

The currently available quality reports were sent to Eurostat under voluntary basis, and are publicly available (see: https:// ec.europa.eu/eurostat/cache/metadata/en/aact\_esms.htm) for 25 EU Member States and three EFTA countries. The last transmitted quality reports refer to reference year 2017 and it allows the users to assess the quality of the EAA statistics published by Eurostat. The data quality can be measured against indicators covering the following components: relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability and coherence.

#### 13.2 Communication on methodological changes

Countries are required to inform the Commission (Eurostat) of any methodological or other change that impact the data or the overall quality of data, including any deviation from the rules provided in the EAA Regulation that could have a considerable effect on the statistics.

#### 13.3 Quality reports

The required metadata are in accordance with the Single Integrated Metadata System (SIMS) exchange standard specified by the Commission (Eurostat). The metadata are provided through the single entry point (also known as the Metadata Handler).

The reports are published on Eurostat's website.



#### 14.1 Introduction

Eurostat makes the EAA data available and accessible to all users free of charge in Eurostat's online database.

#### 14.2 Flags for data dissemination

The use of flags in EAA data is restricted.

The flag "e" refers to estimated data and it is currently used for first and second estimates..

The flag "z" is used for items that by definition is not applicable (currently transmitted as "nd" by the data providers in the templates). This definition can be used for items, that do not exist in the given dataset, i.e. olive oil in Finland.

The flag "b" indicates break in time series. This constitutes a situation when data collected in a specific year are not fully comparable with the data of the previous and/or following years. This is often the result when new data sources are used or significant methodological changes occur.

#### 14.3 Codes in data dissemination

Codes assigned to data concept are intended for easy identification. Disseminated EAA codes are described in Eurobase code lists (see: Data Browser Bulk) and relate to the labels of the variables set out in the Regulation.

In a few cases (see Table 36) the label for dissemination is very similar but not identical to the one in the Regulation.



#### TABLE 36

#### Codes with different labels in Eurobase and in the Regulation

	Eurobase		Regulation
Code	Label	ltem	List of variables
17000	SECONDARY ACTIVITIES (INSEPARABLE)	17	NON-AGRICULTURAL SECONDARY ACTIVITIES (INSEPARABLE)
17100	TRANSFORMATION OF AGRICULTURAL PRODUCTS	17.1	Processing of agricultural products
17900	OTHER NON-SEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)	17.2	Other inseparable secondary activities (goods and services)
19010	SEEDS AND PLANTING STOCK (INTERMEDIATE CONSUMPTION)	19.01	Seeds and planting inventory
19040	PLANT PROTECTION PRODUCTS, HERBICIDES, INSECTICIDES AND PESTICIDES	19.04	Plant protection products and pesticides
19060	FEEDINGSTUFFS (INTERMEDIATE CONSUMPTION)	19.06	Animal feedingstuffs
36000	CHANGES IN STOCKS	36	CHANGES IN INVENTORIES

#### 14.4 Calculation of EU aggregates

The EU aggregates are calculated based on the aggregated national results, i.e. the sum. of those values reported by the individual data providers (cf. 6.16 and 6.17) at current prices and at prices of previous years. Values at reference year prices are not additive, they are calculated by chain linking.

Currently the following EU aggregates are published: EU (rolling EU aggregate), EU15, EU25, EU27\_2007, EU28, EU27\_2020 (European Union–27 countries (from 2020) and EU27\_EFTA (European Union–27 countries (from 2020) and European Free Trade Association countries).

Additionally, the following Euro area aggregates are also published: EA (rolling Euro area aggregate), EA11, EA12, EA 16, EA 19 and EA20 (Euro area – 20 countries from 2023).

#### 14.5 Additional disseminated units of measure

EAA data is transmitted in millions of national currency, and disseminated in million units of national currency, euro and purchasing power standards (PPS). For these purposes all figures are converted into euros and into PPS in order to enable cross-country comparisons and the compilation of EU aggregates.

Constant series are calculated from the base data at constant prices on 2010 and 2015 base. For calculating real series GDP implicit price index is used to deflate series.

Value, volume and price indices are calculated from the base data and disseminated in nominal and real terms.

Agricultural income indicators are calculated from real factor income and real entrepreneurial income and labour input data, and disseminated on previous year's base, on 2010 and 2015 base.

Agricultural labour input data is disseminated as absolute figures and as indices calculated on 2010 and 2015 base.

#### 14.6 Dissemination of tabular data

Data on EAA and ALI statistics are publicly available, free of charge via the Eurostat website, under theme Agriculture, forestry and fisheries and Agriculture (https://ec.europa.eu/eurostat/web/agriculture/database) under Economic accounts for agriculture. Unit values statistics are available as historical dataset but are not updated since March 2020. An online user guide on the Eurostat Data Browser interface is available at Data browser first visit–Eurostat Online Help for Data Browser–EC Public Wiki (europa.eu).

Figure 11 and Figure 12 illustrate how to access the EAA and ALI data theme (node code aact) in the navigation tree: https://ec.europa.eu/eurostat/data/database

#### FIGURE 11

## How to access the EAA and ALI data theme (node code aact) in data navigation tree





#### FIGURE 12

#### Data structure of EAA and ALI in data navigation

🖻 左 Economic accounts for agriculture (aact) 📓



#### 14.7 Interpretation of results

The EAA data are accurate, coherent and deemed comparable across countries and over time. The following points should be borne in mind when interpreting the figures:

- Geographical comparability: As explained in Chapter 4, 4.10 the number of working hours per Annual Work Unit can differ from country to country.
- Comparability over time: The data related to subsidies reflects the changes in the subsidy regimes and in the type of subsidy under the CAP. Comparability of regional data over time is affected by breaks in the NUTS classification.
- Cross domain coherence: Developments in the EAA data have largely been coherent with the combined developments of agricultural production statistics and agricultural price statistics. The EAA validation includes comparisons with these statistics.

The main indicators (output, intermediate consumption, GVA, etc) in the EAA are, with respect to different sector definitions, comparable with national accounts figures for the agricultural sector (NACE Rev. 2 Division 01).

EAA EU aggregates are disseminated according to the Eurostat Release calendar. As indicated in the release calendar data releases are accompanied with a statistics explained article or news article.

# Annex 1 List of detailed items of the production account and capital account in EAA

The content of Annex 1 is also available as separate excel file.

#### LIST OF CHARACTERISTIC ACTIVITIES OF THE AGRICULTURAL INDUSTRY AND OF THE PRODUCTS RELATED TO THESE ACTIVITIES IN THE EAA

This list of agricultural activities (and of the products related to them) has been drawn up on the basis of the NACE Rev.2 (first four digits) and the CPA 2.1 (fifth and sixth digits) (<sup>83</sup>). Additional information, on a lower level, comes from the Combined Nomenclature (2022), in line with the references stipulated in the CPA.

Activities (and products related to them) which are considered as agricultural in the EAA, but not in NACE Rev.2 are listed separately at the end of this list.

- A PRODUCTS OF AGRICULTURE, FORESTRY AND FISHING
- 01 Products of agriculture, hunting and related services
- 01.1 Non-perennial crops
- 01.11 Cereals (except rice), leguminous crops and oil seeds
- 01.11.1 Wheat
- 01.11.11 Durum wheat
- 01.11.12 Wheat, except durum wheat
- 01.11.2 Maize
- 01.11.20 Maize
- 01.11.3 Barley, rye and oats
- 01.11.31 Barley
- 01.11.32 Rye
- 01.11.33 Oats
- 01.11.4 Sorghum, millet and other cereals
- 01.11.41 Sorghum
- 01.11.42 Millet
- 01.11.43 Triticale

(83) () CPA: statistical classification of products by activity in the European Economic Community.

Annex 1 List of detailed items of the production account and capital account in EAA

01.11.49 Other cereals

- 01.11.5 Cereals straw and husks
- 01.11.50 Cereals straw and husks
- 01.11.6 Green leguminous vegetables
- 01.11.61 Beans, green
- 01.11.62 Peas, green
- 01.11.69 Other green leguminous vegetables
- 01.11.7 Dried leguminous vegetables
- 01.11.71 Beans, dry
- 01.11.72 Broad beans, dry
- 01.11.73 Chick peas, dry
- 01.11.74 Lentils, dry
- 01.11.75 Peas, dry
- 01.11.76 Cow peas
- 01.11.77 Pigeon peas, dry
- 01.11.79 Pulses (dried leguminous vegetables) n.e.c.
- 01.11.8 Soya beans and groundnuts
- 01.11.81 Soya beans
- 01.11.82 Groundnuts, in shell
- 01.11.9 Other oil seeds
- 01.11.91 Lin seed
- 01.11.92 Mustard seed
- 01.11.93 Rape or colza seed
- 01.11.94 Sesame seed
- 01.11.95 Sunflower seed
- 01.11.96 Castor oil seeds
- 01.11.99 Other oil seeds n.e.c.
- 01.12 Rice, not husked
- 01.12.1 Rice, not husked
- 01.12.10 Rice, not husked
- 01.13 Vegetables and melons, roots and tubers
- 01.13.1 Leafy or stem vegetables
- 01.13.11 Asparagus
- 01.13.12 Cabbages
- 01.13.13 Cauliflowers and broccoli

01.13.14 Lettuce
01.13.15 Chicory
01.13.16 Spinach
01.13.17 Artichokes
01.13.19 Other leafy or stem vegetables
01.13.2 Melons
01.13.21 Watermelons
01.13.29 Other melons
01.13.3 Other fruit-bearing vegetables
01.13.31 Chillies and peppers, green (only capsicum)
01.13.32 Cucumbers and gherkins
01.13.33 Eggplants (aubergines)
01.13.34 Tomatoes
01.13.39 Other fruit-bearing vegetables n.e.c.
01.13.4 Root, bulb or tuberous vegetables
01.13.41 Carrots and turnips
01.13.42 Garlic
01.13.43 Onions
01.13.44 Leeks and other alliaceous vegetables
01.13.49 Other root, bulb or tuberous vegetables (without high starch or inulin content)
01.13.5 Edible roots and tubers with high starch or inulin content
01.13.51 Potatoes
01.13.52 Sweet potatoes
01.13.53 Cassava
01.13.54 Taro
01.13.59 Other edible roots and tubers with high starch or inulin content
01.13.6 Vegetable seeds, except beet seeds
01.13.60 Vegetable seeds, except beet seeds
01.13.7 Sugar beet and sugar beet seeds
01.13.71 Sugar beet
01.13.72 Sugar beet seeds
01.13.8 Mushrooms and truffles
01.13.80 Mushrooms and truffles
01.13.9 Vegetables, fresh, n.e.c.
01.13.90 Vegetables, fresh, n.e.c.

Annex 1 List of detailed items of the production account and capital account in EAA

- 01.14 Sugar cane
- 01.14.1 Sugar cane
- 01.14.10 Sugar cane
- 01.15 Unmanufactured tobacco
- 01.15.1 Unmanufactured tobacco
- 01.15.10 Unmanufactured tobacco
- 01.16 Fibre crops
- 01.16.1 Fibre crops
- 01.16.11 Cotton, whether or not ginned
- 01.16.12 Jute, kenaf and other textile bast fibres, raw or retted, except flax, true hemp and ramie
- 01.16.19 Flax, true hemp and raw fibre crops n.e.c.
- 01.19 Other non-perennial crops
- 01.19.1 Forage crops
- 01.19.10 Forage crops
- 01.19.2 Cut flowers and flower buds; flower seeds
- 01.19.21 Cut flowers and flower buds
- 01.19.22 Flower seeds
- 01.19.3 Beet seeds, seeds for forage plants; other raw vegetable materials
- 01.19.31 Beet seeds (excluding sugar beet seeds) and seeds for forage plants
- 01.19.39 Raw vegetable materials n.e.c.
- 01.2 Perennial crops
- 01.21 Grapes
- 01.21.1 Grapes
- 01.21.11 Table grapes
- 01.21.12 Other grapes, fresh
- 01.22 Tropical and subtropical fruits
- 01.22.1 Tropical and subtropical fruits
- 01.22.11 Avocados
- 01.22.12 Bananas, plantains and similar
- 01.22.13 Dates
- 01.22.14 Figs
- 01.22.19 Other tropical and subtropical fruits
- 01.23 Citrus fruits
- 01.23.1 Citrus fruits
- 01.23.11 Pomelo and grapefruits

01.23.12 Lemons and limes

- 01.23.13 Oranges
- 01.23.14 Tangerines, mandarins, clementines
- 01.23.19 Other citrus fruits
- 01.24 Pome fruits and stone fruits
- 01.24.1 Apples
- 01.24.10 Apples
- 01.24.2 Other pome fruits and stone fruits
- 01.24.21 Pears
- 01.24.22 Quinces
- 01.24.23 Apricots
- 01.24.24 Cherries
- 01.24.25 Peaches
- 01.24.26 Nectarines
- 01.24.27 Plums
- 01.24.28 Sloes
- 01.24.29 Other pome fruits and stone fruits n.e.c.
- 01.25 Other tree and bush fruits and nuts
- 01.25.1 Berries and the fruits of the genus vaccinium
- 01.25.11 Kiwi fruit
- 01.25.12 Raspberries
- 01.25.13 Strawberries
- 01.25.19 Other berries, the fruits of the genus vaccinium n.e.c.
- 01.25.2 Fruit seeds
- 01.25.20 Fruit seeds
- 01.25.3 Nuts (excluding wild edible nuts, groundnuts and coconuts)
- 01.25.31 Almonds
- 01.25.32 Chestnuts
- 01.25.33 Hazelnuts
- 01.25.34 Pistachios
- 01.25.35 Walnuts

01.25.39 Other nuts (excluding wild edible nuts, groundnuts and coconuts)

- 01.25.9 Other tree and bush fruits n.e.c.
- 01.25.90 Other tree and bush fruits n.e.c.
- 01.26 Oleaginous fruits

14 Annex 1 List of detailed items of the production account and capital account in EAA

- 01.26.1 Olives
- 01.26.11 Table olives
- 01.26.12 Olives for production of olive oil
- 01.26.2 Coconuts
- 01.26.20 Coconuts
- 01.26.9 Other oleaginous fruits
- 01.26.90 Other oleaginous fruits
- 01.27 Beverage crops
- 01.27.1 Beverage crops
- 01.27.11 Coffee beans, not roasted
- 01.27.12 Tea leaves
- 01.27.13 Maté leaves
- 01.27.14 Cocoa beans
- 01.28 Spices, aromatic, drug and pharmaceutical crops
- 01.28.1 Spices, not processed
- 01.28.11 Pepper (piper spp.), raw
- 01.28.12 Chillies and peppers, dry (capsicum spp.), raw
- 01.28.13 Nutmeg, mace and cardamoms, raw
- 01.28.14 Anise, badian, coriander, cumin, caraway, fennel and juniper berries, raw
- 01.28.15 Cinnamon (canella), raw
- 01.28.16 Cloves (whole stems), raw
- 01.28.17 Ginger, dry, raw
- 01.28.18 Vanilla, raw
- 01.28.19 Other spices, not processed
- 01.28.2 Hop cones
- 01.28.20 Hop cones
- 01.28.3 Plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes
- 01.28.30 Plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes
- 01.29 Other perennial crops
- 01.29.1 Natural rubber
- 01.29.10 Natural rubber
- 01.29.2 Christmas trees, cut
- 01.29.20 Christmas trees, cut

01.29.3 Vegetable materials of a kind used primarily for plaiting or as stuffing or padding, or in dyeing or tanning

01.29.30 Vegetable materials of a kind used primarily for plaiting or as stuffing or padding, or in dyeing or tanning

01.3 Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn

01.30 Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn

01.30.1 Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn

01.30.10 Planting material: live plants, bulbs, tubers and roots, cuttings and slips; mushroom spawn

01.4 Live animals and animal products

01.41 Dairy cattle, live and raw milk from dairy cattle

01.41.1 Dairy cattle, live

01.41.10 Dairy cattle, live

01.41.2 Raw milk from dairy cattle

01.41.20 Raw milk from dairy cattle

01.42 Other cattle and buffaloes, live and their semen

01.42.1 Other cattle and buffaloes, live

01.42.11 Other cattle and buffaloes, except calves, live

01.42.12 Calves of cattle and buffalo, live

01.42.2 Cattle and buffalo semen

01.42.20 Cattle and buffalo semen

01.43 Horses and other equines, live

01.43.1 Horses and other equines, live

01.43.11 Horses, live

01.43.12 Asses, mules and hinnies, live

01.44 Camels and camelids, live

01.44.1 Camels and camelids, live

01.44.10 Camels and camelids, live

01.45 Sheep and goats, live; raw milk and shorn wool from sheep and goats

01.45.1 Sheep and goats, live

01.45.11 Sheep, live

01.45.12 Goats, live

01.45.2 Raw milk from sheep and goats

01.45.21 Raw milk from sheep

01.45.22 Raw milk from goats

01.45.3 Shorn wool from sheep and goats, greasy, including fleece-washed shorn wool

01.45.30 Shorn wool from sheep and goats, greasy, including fleece-washed shorn wool

Annex 1 List of detailed items of the production account and capital account in EAA

#### 01.46 Swine, live

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01.46.1 Swine, live

01.46.10 Swine, live

01.47 Poultry, live and eggs

- 01.47.1 Poultry, live
- 01.47.11 Chickens, live
- 01.47.12 Turkeys, live
- 01.47.13 Geese, live
- 01.47.14 Ducks and guinea fowls, live
- 01.47.2 Eggs in shell, fresh
- 01.47.21 Hen eggs in shell, fresh
- 01.47.22 Eggs from other poultry, in shell, fresh
- 01.47.23 Hen eggs for hatching
- 01.47.24 Eggs from other poultry, for hatching
- 01.49 Other farmed animals and animal products
- 01.49.1 Other farmed animals, live
- 01.49.11 Domestic rabbits, live
- 01.49.12 Farmed birds n.e.c., live
- 01.49.13 Farmed reptiles (including snakes and turtles), live
- 01.49.19 Other farmed animals n.e.c., live
- 01.49.2 Other farm animal products
- 01.49.21 Natural honey
- 01.49.22 Raw milk n.e.c.
- 01.49.23 Snails, fresh, chilled, frozen, dried, salted or in brine, except sea snails
- 01.49.24 Edible products of farm animal origin n.e.c.
- 01.49.25 Silk-worm cocoons suitable for reeling
- 01.49.26 Insect waxes and spermaceti, whether or not refined or coloured
- 01.49.27 Animal embryos for reproduction
- 01.49.28 Non-edible products of farm animal origin n.e.c.
- 01.49.3 Raw fur skins and miscellaneous raw hides and skins
- 01.49.31 Raw fur skins, except of fur-bearing lambs
- 01.49.32 Raw fur skins of fur-bearing lambs
- 01.49.39 Raw skins of animals n.e.c. (fresh or preserved, but not further prepared)
- 01.6 Agricultural and animal husbandry services (except veterinary services)
- 01.61 Support services to crop production

01.61.1 Support services to crop production 01.61.10 Support services to crop production 01.62 Support services to animal production 01.62.1 Support services to animal production 01.62.10 Support services to animal production 01.63 Post-harvest crop services 01.63.1 Post-harvest crop services 01.63.10 Post-harvest crop services 01.64 Seed processing services for propagation 01.64.1 Seed processing services for propagation 01.64.10 Seed processing services for propagation 01.7 Hunting and trapping and related services 01.70 Hunting and trapping and related services 01.70.1 Hunting and trapping and related services 01.70.10 Hunting and trapping and related services **C MANUFACTURED PRODUCTS 10 Food products** 10.4 Vegetable and animal oils and fats 10.41 Oils and fats 10.41.2 Vegetable oils, crude 10.41.22 Olive oil, crude 11 Beverages 11.0 Beverages 11.02 Wine from grape 11.02.1 Wine of fresh grapes; grape must 11.02.11 Sparkling wine of fresh grapes 11.02.12 Wine of fresh grapes, except sparkling wine; grape must 11.02.2 Wine lees; argol 11.02.20 Wine lees; argol 11.02.9 Sub-contracted operations as part of manufacturing of wine from grape 11.02.99 Sub-contracted operations as part of manufacturing of wine from grape

## LIST OF DETAILED ITEMS OF INTERMEDIATE CONSUMPTION USED IN THE AGRICULTURAL INDUSTRY

INTERMEDIATE CONSUMPTION OF THE AGRICULTURAL INDUSTRY

1 Seeds and planting stock

1.1 Cereals (including rice)

- 1.2 Potatoes
- 1.3 Industrial crops (including protein crops)

1.4 Vegetables

1.5 Tree nursery products (excluding forestry plants), including seeds and planting stock for Christmas trees

1.6 Other crop products (e.g. flower bulbs, flower corms and tubers, flower seeds, grass and clover seeds)

2 Energy; lubricants

2.1 electricity

2.2 gas

2.3 other fuels and propellants

2.4 other

3 Fertilisers and soil improvers

3.1 Straight fertilisers

**3.1.1 Nitrogenous fertilisers** 

3.1.2 Phosphatic fertilisers

3.1.3 Potash fertilisers

3.1.4 Others

**3.2 Compound fertilisers** 

3.2.1 NPK fertilisers

3.2.2 NP fertilisers

3.2.3 PK fertilisers

3.2.4 NK fertilisers

3.2.5 Others

3.3 Organic fertilisers

3.4 Soil improvers (e.g. lime, peat, sand, sludge, synthetic foams)

3.5 Others

4 Plant protection products and pesticides

4.1 Fungicides

4.2 Insecticides

4.3 Herbicides

4.4 Others	
5 Veterinary expenses	
5.1 Medicines where not purchased together with veterinary services	
5.2 Fees	
5.3 Total services (i.e. overall payments for pharmaceutical products and fees)	
6 Feedingstuffs	
6.1 Straight feedingstuffs	
6.1.1 Cereals (including rice), protein crops	
6.1.2 Potatoes and fodder root crops (including forage beet)	
6.1.3 Milk and dairy products	
6.1.4 Bran and other milling products	
6.1.5 Oilcake	
6.1.6 Other straight feedingstuffs	
6.2 Additives used in feedingstuffs	
6.2.1 For cattle	
6.2.2 For calves	
6.2.3 For pigs	
6.2.4 For poultry	
6.2.5 For other livestock (including feed for horses, goats and sheep)	
6.3 Compound feedingstuffs, complementary feedingstuffs	
6.3.1 For cattle	
6.3.2 For calves	
6.3.3 For pigs	
6.3.4 For poultry	
6.3.5 For other livestock (including horses, goats and sheep)	
6.4 Compound feedingstuffs-complete feedingstuffs	
6.4.1 For cattle	
6.4.2 For calves	
6.4.3 For pigs	
6.4.4 For poultry	
6.4.5 For other livestock (including horses, goats and sheep)	
7 Maintenance of materials	
7.1 Maintenance and repair of vehicles, machinery and other items of equipment	
7.1.1 Spare parts (e.g. sparking-plugs, batteries, reaper components, saw blades, ploughshares, tyres)	
7.1.2 Labour charges (e.g. for blacksmiths, mechanics, electricians)	

7.1.3 Total costs borne by farmers in respect of overall payments to non-agricultural units (e.g. material, labour charges, management earnings and profits)

8 Maintenance of buildings

8.1 Material used (e.g. cement, sand, bricks, tiles, glass)

8.2 Labour charges (e.g. for painters, builders' labourers, carpenters, joiners, plumbers, electricians)

8.3 Total costs borne by farmers in respect of overall payments to non-agricultural units (e.g. material, labour charges, management earnings and profits)

9 Agricultural services

10 Financial intermediation services indirectly measured (FISIM)

11 Other goods and services

11.1 Material and small tools

11.1.1 Light implements (e.g. knapsack sprayers, water pumps, small electric motors, small internal combustion engines, electrified fences)

11.1.2 Small tools (e.g. shovels, spades, hoes)

11.1.3 Other material (e.g. batteries, lamps, switches, wire, nails, wire netting, sacks, leather straps, planks, barrels, cases, packing material, refills for fire extinguishers, binding materials, plastic sheeting, work clothes, boots, anti-frost smoke, anti-hail protection, detonators for the protection of crops)

11.2 Rental costs

11.2.1 Business use of non-residential buildings

11.2.2 Machinery and other items of equipment without operating staff

11.2.3 Payments for use of intangible assets (computer software)

11.2.4 Payments for use of non-produced intangible assets (production rights, etc.)

11.3 Other goods and services

11.3.1 Water rates (84) (business use) linked directly or indirectly to the quantity of water consumed

11.3.2 Expenditure on agricultural newspapers and magazines

11.3.3 Substances added in transforming wine must to wine (fining agents, sulphur, sugar, other additives)

11.3.4 Services provided by transport, commercial and storage enterprises

11.3.5 Postal and telecommunications charges incurred in the performance of work

11.3.6 Remuneration for insurance services contracted to cover risks associated with agricultural activity

11.3.7 Cover charges

11.3.8 Expenditure on artificial insemination and castration

11.3.9 Bank fees

11.3.10 Levies and subscriptions to economic and professional organisations (e.g. farmers' associations, chambers of commerce, etc.)

(84) Water rates paid unrelated to the quantity of water consumed are recorded as taxes on production.

- 11.3.11 Expenditure on milk inspection, shows, entries in pedigree registers
- 11.3.12 Fees for seed certification
- 11.3.13 Fees for medical examinations of workers necessitated by their employment
- 11.3.14 Costs of engaging labour (advertising, recruitment)
- 11.3.15 Fees for agricultural consultants, surveyors, accountants, tax consultants, lawyers, etc.)
- 11.3.16 Costs of soil analyses
- 11.3.17 Purchase of services of market research and advertising

11.3.18 Travel expenses and payments to independent transport firms engaged by the employer for the transport of employees

11.3.19 Other goods and services, n.e.c.

## LIST OF DETAILED ITEMS OF GROSS FIXED CAPITAL FORMATION RELEVANT IN THE AGRICULTURAL INDUSTRY

GROSS FIXED CAPITAL FORMATION OF THE AGRICULTURAL INDUSTRY

**1 GFCF in agricultural products** 

- 1.1 Plantations yielding repeat products
- 1.1.1 Orchards
- 1.1.2 Vineyards and olive plantations
- 1.1.3 Hop fields
- 1.1.4 Asparagus beds
- 1.1.5 Berry plantations
- 1.1.6 Other plantations yielding repeat products
- 1.1.7 Costs of tending new plantations during the first three years
- **1.2 Fixed asset livestock**
- 1.2.1 Breeding animals (excluding breeding fowl)
- 1.2.2 Draught animals
- 1.2.3 Dairy animals
- 1.2.4 Sheep reared for wool or milk
- 1.2.5 Others
- 2 GFCF other than agricultural assets
- 2.1 GFCF in materials
- 2.1.1 Machinery and other equipment/capital goods
- 2.1.1.1 Rotovators and other two-wheeled plant

2.1.1.2 Machinery and plant for soil preparation, sowing, planting, cultivation, fertilisation and protection of plants

2.1.1.3 Machinery and plant for harvesting 2.1.1.4 Machinery and installations on the farm premises 2.1.1.4.1 For crop production (e.g. for reception, sorting, ventilation, storage of products) 2.1.1.4.2 For animal production (e.g. plant for milking, milk refrigeration, dung removal) 2.1.1.4.3 For processing of crops into grape must, wine and olive oil) 2.1.1.4.4 Others (e.g. for irrigation) 2.1.2 Transport equipment 2.1.2.1 Agricultural tractors 2.1.2.2 Other vehicles (motor cars, estate cars, lorries) 2.1.2.3 Trailers 2.2 GFCF in buildings 2.2.1 GFCF in farm buildings (non-residential) 2.2.1.1 New buildings 2.2.1.2 Renovations (large-scale repairs) and improvements 2.2.1.3 Other structures with the exception of land improvement (other buildings and structures, etc.), 2.3 Major soil improvements /Major improvements to land, 2.3.1 Consolidation of fragmented holdings (costs borne by farmers) 2.3.2 Road construction

- 2.3.3 Dyke/dam construction
- 2.3.4 Clearing
- 2.3.5 Drainage
- 2.3.6 Installation of irrigation
- 2.3.7 Other soil improvements

2.4 Costs associated with the transfer of ownership of non-produced assets such as land and production rights

2.5 Others

2.5.1 R&D, covering research and development from specialised units and research and development for own production

2.5.1 GFCF in intellectual property rights other than research and development (computer programmes, production rights, etc.)

2.5.2 Other gross fixed capital formation, n.e.c.

## **Annex 2 Elaboration tables of the EAA**

The content of Annex 2 is also available as separate excel file.

#### **TABLE 1** Elaboration tables of the EAA: output (quantities)

	Table 1		Elabora	ation ta	bles of th	ne EAA:	output (qua	intities]													
													U	SES							
					-									Uses, c	ther than intra-u	nit consumpt	ion				
					RESOURC	Æð.			Intra-unit co	reumption		Procession by			Sales					Change in	Output EAA
tem	Code	Description										producers	Own final	dom	estic		Own-account produced fixed	Final	Total	riventories	
			Gross output	Locsec	Usable output	initial stocks	Total available resources	Seeds	Feedingstuffs	Other	Total	(separable activities)	consumption	agricultural units	outside of the industry	abroad	capital goods	elocke			
			1q	29	3q (1q-2q)	đq	5q (3q+4q=9q+15q)	6q	79	89	9q (8q+7q+8q)	10q	11q	12q1	12q2	12q3	13q	14q	15q (10q to 14q)	16q (14q-4q)	17q (10q to 13c+16c)+7c
Codes	n the Regula	ation (EC) 138/2004	1q	2q	3q (1q-2q)	4q	5q (3q+4q=6q to	40		1	6q	7q	8q		Total sales: 9q		10q	11q	(7q to 11q)	12q (11q-4q)	6q.animal feedingstuffs +
01	01000	CEREALS																			
01.1	01100	(including seeds) Wheat and spell																			
01.1/1	01110	Soft wheat and																			
01.1/2	01120	Durum wheat																			
01.2	01200	Rye and mesin Barley																			
01.4	01400	Oats and summer																			
01.5	01500	Grain maize			<u> </u>	<u> </u>								<u> </u>		-					
01.6	01600	Rice																			
01.7	01900	Other cereals			<u> </u>	<u> </u>		-		-		<u> </u>		<u> </u>							
62	02000	CROPS																			
02.1	02100	Oil seeds and oleaginous fruits (includion seeds)																			
02.1/1	02110	Rape and turnip rape seed																			
02.1/2	02120	Sunfower								-					-						
02.1/3	02130	Other oleaginous											-			_					
02.2	02200	products Protein crops								-										· · · · · ·	
02.3	02300	Raw tobacco																			
02.4	02400	Sugar beet						_													
02.5	02900	crops																			
02.5/1	02910	Fibre plants											-			_					
10.5/2	02020	Other industrial																			
10.00		crops: others																			
03	03000	FORAGE PLANTS																			
00.1	03100	Fodder root crops			<u> </u>	<u> </u>	<u> </u>	-						<u> </u>							
03.2	03200	(including forage beet)																			
68.3	03900	Other forage																			
04	04000	VEGETABLES AND HORTICULTURAL																			
04.1	04100	Fresh vegetables											-			_					
04.1/1	04110	Caulflower																			
14.1/2	04120	Other fresh											-			-					
04.1/3	04190	vegetables					-						-	L		_					
04.2	04200	Plants and flowers																			

	Table 1		Elabora	ation ta	bles of t	ne EAA:	output (qua	ntities)	)												
													U	SES							
														Uses, o	ther than intra-u	nit consumpti	ion				
					RESCUR	as.			Intra-unit co	nsumption	6 I				Sales					Change in	Outred EAA
												processing by producers	Own final	dom	estic		Own-account	Final	2.4.000	inventories	COLDUCE DAY
nem	Code	Description	Contra		Theophie	Include	Total constants					(separable	consumption	to other	exhibits of the	abroad	produced fixed capital goods	stocks	Total		
			output	Losses	output	stocks	resources	Seeds	Feedingstuffs	Other	Total	activities)		agricultural	industry						
					3q		5q				9q			2113					15q	16g	17g
			19	29	(1q-2q)	4q	(3q+4q=9q+15q)	69	7q	8q.	(6q+7q+8q)	10q	11q	12q1	12q2	12q3	13q	16q	(10q to 14q)	(14q-4q)	(10q to
	_					_	59	_			_					-				100	6q.animal
Codes	n the Regula	ation (EC) 138/2004	1q	2q	(10-20)	4q	(3q+4q+6q to	-		-	6q	7q	8q		Total sales: 9q		10q	11q	(7q to 11q)	(110-40)	feedingstuffs +
04.2/1	04210	Nursery plants			_		1141									_					10101001120
		Omamental																			
		flowers																			
01.2/2	04220	(including																			
		Christmas (mes)																			
04.2/3	04230	Plantations														2			2		
66	05000	(including seeds)																			
6	06000	FRUITS																			
06.1	06100	Fresh fruit Dessert apples									-										
6.1/2	06120	Dessert pears																-			
6.1/3	06130	Peaches																			
06.1/4	06190	Other fresh fruit																			
06.2	06200	Citrus fruits																			
06.2/2	06210	Mandarina				-	<u> </u>				-					-		-			
06.2/3	06230	Lemona																_			
06.2/4	06290	Other ctrus fruita									·										
06.3	06300	Tropical fruit																			
06.4	06400	Grapes Desset grapes	_		-		<u> </u>		-		_				-						
06.4/2	06490	Other grapes																			
06.5	06500	Ofives Table ofices				-		-			-					-	<u> </u>	-			
6.5/2	06590	Other olives																			
07	07000	WINE Table wine																			
07.2	07200	Quality wine											-			-		-			
8	08000	OLIVE OIL																			
09	09000	PRODUCTS																			
		Vegetable														5					
09.1	09100	primarily for																			
2.00	09300	plaiting					L						-			-	L		-		
2.01	00200	Other crop																			-
0.0	09900	products: others				<u> </u>	L				-					-					
10	10000	TO 09)		<							6				· · · · ·	2 0					
11	11000	ANMALS											_								
11.2	11200	Pigs																			
11.3	11300	Equines																			
11.4	11400	Poulty																			-
11.6	11900	Other animals																			
12	12000	ANMAL													1 1	3		1.1.1			1
		10000010		-																	

	Table 1	-	Elabora	ation ta	bles of the	he EAA:	output (qua	intities	)												
													U	SES							
						1000								Uses, c	ther than intra-u	nit consumpt	ion				
					RESOURC	ES			Intra-unit co	nsumption			5		Sales					Change in	
-	1000											Processing by producers	Own final	dom	ettic	_	Own-account	Final	0.000	inventories	Culput EAA
Len	Code	Description	Gross	Losses	Usable	Initial stocks	Total available	Seeds	Feedingstuffs	Other	Total	(separable activities)	consumption	to other agricultural	outside of the industry	abroad	capital goods	slocks	Total		
			19	29	39	49	59	6g	79	89	99	10g	11g	12q1	1202	12q3	13q	14q	15q	16q	17q (10g to
				_	(19-94)		(3q+aq19q+15q) 60				(od+1d+od)								(hod so red)	(ped-ed)	13q+16q)+7q 6q.animal
Codes	in the Regul	ation (EC) 128/2004	19	24	3q (1q-2q)	4q	(3q+4q=6q to 11q)	100	1.00	1.	64	79	0q		Total sales: 9q		10q	ftg	(7q to 11q)	(11q-4q)	foodingstuffs + 7g to 10g+12g
12.1	12100	Mik	-		-	-		-		-			-	-		-	<u> </u>	-			
12.2	12200	Other animal						-								-					
10.0	12010	products				-				-								<u> </u>			
12.3/2	12910	Silkworm cocoons			-	-		-		-								-			
12.3/3	12930	Other animal																			
		ANMAL OUTPUT				-				-		-	-	-		-	<u> </u>	-			
13	13000	(11+12)																			
14	14000	AGRICULTURAL GOODS OUTPUT					2														
		AGRICULTURAL																			
15	15000	SERVICES																			
15.1	15100	SERVICES									1 1										
15.2	15200	RENTING OF																			
16	16000	AGRICULTURAL																			
		NON-																			
17	17000	AGRICULTURAL																			
		ACTIVITIES																			
_		(INSEPARABLE)				_			-	-	-		-	-							
100		OF																			
17.1	1/100	AGRICULTURAL																			
17.1/1	17110	- cereals				-		-		-								-			
17.1/2	17120	- vegetables																			· ·
17.1/3	17130	- fruits						_			-										
17.1/5	17150	- animals						-													
17.1/6	17160	- animal																			
17.1/6/1	17161	- milk																			
17.1/6/2	17162	- other animal																			
17.1/7	17190	- other			-	-		-								-	<u> </u>	<u> </u>			
		OTHER																			
		SECONDARY																			
17.2	17900	ACTIVITIES				1															
1		(GOODS AND				1															
-		OUTPUT OF THE				-															
18	18000	AGRICULTURAL				1															
		(16+17)																			
-	_																				

### **TABLE 2** Elaboration tables of the EAA: output (prices and values)

Tabl	e 2.			Elaborat	ion table	s of the l	EAA: out	put (pric	es and va	alues)								
						-	TOUCE LTON						V	ALUES AT PRO	OUCER PRICE			
	I					INCODUCER	PRICE / TON							at curren	nt prices			
	1000			Decembra hy			Sales					Drossessing but					Outpu	1EAA
tterm	New-CRONOS code	Description	Intra-unit	producers	Own final	4.0			Own-account	Change in	Intra-unit	producers	Own final		Own-account	Change in		
		100000000000000000000000000000000000000	(feedingstuffs)	(separable	consumption	to other	esuc	abroad	capital goods	inventories	(feedingstuffs)	(separable	consumption	Sales (1)	capital goods	inventories		II
	I			activities)		agricultural	industry					activities)						
			7p	10p	11p	12p1	12p2	12p3	13p	16p	74	10v	11v	12v	13v	16v	17v	17v n-1
																	6y.animal	(6v,animal
Codes in	the Regulation (I	EC) 138/2004	sp,arimat feedingstuffs	7p	8p		Total sales: 9q		10p	12p	feedingstuffs	7v	8v	97	10v	12v	feedingstuffs + 7v to 10v+12v	Tv to Tv to 10v+12v], n-1
01	01000	CEREALS																
01.1	01100	Wheat and speit											S 33					
01.1/1	01110	Soft wheat and		-									3					
01.1/2	01120	Durum wheat																
01.2	01200	Rye and mesin										1						
01.3	01300	Barley Only and																
01.4	01400	summer cereal																
		mixtures				-	· · · ·											
01.5	01500	Grain maize Rice		-									-					
01.0	01900	Other cereals																
02	02000	INDUSTRIAL											×					
-		CRUPS																
	03100	OI seeds and																
UZ.1	02100	(including seeds)																
		Rape and										-				-		
02.1/1	02110	turnip rape																
02.1/2	03130	seed														_	_	
02.1/3	02130	Soya						-										
		Other				· · · · ·						S	· · · ·					
02.1/4	02190	oleaginous																
		Protein crone	S			· · · · ·												
02.2	02200	(including seeds)																
02.3	02300	Raw tobacco										1						
02.4	02400	Sugar beet																
02.5	02900	Other industrial																
02.5/1	02910	Fibre plants				-											_	
02.5/2	02920	Hops										S	1					
02.5/3	02930	Other industrial crops: others																
03	03000	FORAGE PLANTS																
03.1	03100	Fodder maize																
		Fodder root crops																
03.2	03200	(including forage beet)																
03.3	03900	Other forage																
		VEGETABLES											-					
04	04000	AND																
		RODUCIS															-	
04.1	04100	Fresh vegetables																

Table	e 2.		1	Elaborati	ion table	s of the E	EAA: out	put (pric	es and va	alues)								
								22 2020					V	ALUES AT PRO	DUCER PRICE			
L						PRODUCER	HICE / TON							at curren	nt prices			
	New CRONOS			Processing by			Sales					Processing by					Output	R EAA
Item	code	Description	consumption	producers	Own final	dom	estic	1.00.00	Own-account produced fixed	Change in	consumption	producers	Own final	Sales (1)	Own-account produced fixed	Change in		
			(feedingstuffs)	(separable activities)	consumption	to other	outside of the	abroad	capital goods	inventories	(feedingstuffs)	(separable activities)	consumption		capital goods	inventories		I
L				40-	44.	acricultural	industry	10-0	10-	40-		10.		10	12.	40.	17.	12-14
			7p	Tup	11p	12p1	12p2	1203	13p	тер	74	104	11V	129	139	167	1/V	1/V ID-1
Codes in	the Regulation (I	EC) 138/2004	6p,animal feedingstuffs	7p	Bp		Total sales: 9q		10p	12p	6v,animal feedingstuffs	7v	Bv	9v	10v	12v	6v,animal feedingstuffs + 7v to 10v+12v	feedingstuffs + 7v to 10v+12v), n-1
04.1/1	04110	Caulflower																
04.1/2	04120	Other fresh				<u> </u>		-			<b>—</b>		-		<b>—</b>			<u> </u>
04.1/3	04190	vegetables											·	· · · ·				
04.2	04200	Plants and forwers																
04.2/1	04210	Nursery plants																
		Ornamental plants april						0					1					
04.22	04770	flowers																i
04.000	04220	(induding																i
		trees)																i
04.2/3	04230	Plantations						2			-							
05	05000	POTATOES (including seeds)																i
06	06000	FRUITS						3 - S					5 - S					
06.1	06100	Fresh fruit				<u> </u>				-							_	
06.1/1	06110	Dessert apples																
06.1/2	06120	Dessert pears		_														
00.03	00130	Other fresh						-										
00.1/4	06190	fruit																
06.2	06200	Citrus truits						-										
06.2/1	06210	Sweet oranges						1	<u> </u>				5					
06.2/2	06220	Mandarins						-										
06.2/4	06290	Other otrus						S					· · · · ·					
06.3	05300	fruits Tropical fruit				<u> </u>				-								
06.4	06400	Grapes																
06.4/1	06410	Dessert grapes																
06.4/2	06490	Other grapes						1										
06.5	06500	Oives																
06.5/1	06590	Other olives																
07	07000	WINE						1										
07.1	07100	Table wine						_										
08	08000	OLIVE OIL						1						1				
09	09000	OTHER CROP																
		Vecetable			-								-	-				
09.1	09100	materials used																i
		primarily for plating																( L
09.2	09200	Seeds																
09.3	09900	Other crop																
10	10000	CROP OUTPUT (01 TO 09)																-

Table	e 2.			Elaborat	ion table	s of the l	EAA: out	put (pric	es and va	alues)								
						-							v	ALUES AT PRO	DUCER PRICE			
						PRODUCER	PRICE / TON							at curren	nt prices			
				Processing by			Sales					Processing by					Outpr	ut EAA
Item	New-CRONOS	Description	Intra-unit	producers	Own Inal				Own-account	Change in	Intra-unit	producers	Own Inal	0-1	Own-account	Change in		0.000
			(feedinostuffs)	(separable	consumption	lo other	esuc	abroad	capital goods	inventories	(feedingstuffs)	(separable	consumption	Sales (1)	capital goods	inventories	1	
			(	activites)		agricultural	industry					activities)						
			7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	16v	17v	17v n-1
			6p.animal				Table astron Da				6v,animal						Ov,animal	(6v,animal feedingstuffs +
Codes in	the Regulation (I	EC) 138/2004	feedingstuffs	Лр	8p		Total sales, aq		10p	12p	feedingstuffs	74	84	.9V	104	120	7v to 10v+12v	7v to 10v+12v) -p-1
11	11000	ANIMALS																101-121 LIFT
11.1	11100	Cattle																
11.2	11200	Pigs						-			-					-	<u> </u>	
11.4	11400	Sheep and apate																
11.6	11500	Deadley																$\vdash$
11.6	11900	Other animals																
12	12000	ANIMAL																
12.1	12100	Mik															$\vdash$	
12.2	12200	Eggs																
12.3	12900	Other animal products												0				
12.3/1	12910	Raw wool																
12.3/2	12920	Silkworm											2					
	10000	Other animal		-				-								-	<u> </u>	
12.3/3	12930	products: others						-	-					-				
13	13000	(11+12)											3					
		AGRICULTURAL																
14	14000	(10+13)															1 /	i I
		AGRICULTURAL																
15	15000	OUTPUT															1 /	i I
15.1	15100	AGRICULTURAL																
_		RENTING OF																
15.2	15200	MILK QUOTA																
16	16000	AGRICULTURAL																í I
		NON-																
17	17000	AGRICULTURAL																í
<b>"</b>		ACTIVITIES																i
		(INSEPARABLE)															$ \longrightarrow $	$\vdash$
17.1	17100	OF																í 1
10.00	11100	AGRICULTURAL																i
17.1/1	17110	- cereals																
17.1/2	17120	<ul> <li>vegetables</li> </ul>																
17.1/3	17130	- fruits - wine								-								$\vdash$
17.1/5	17150	- animals																
17.1/6	17160	- animal						1										
17.1/6/1	17101	- mik																-
		- other animal						-						-			$\vdash$	
17.1/8/2	17162	products																i
17.1/7	17190	- other																

Tabl	e 2.		d	Elaborat	ion table	s of the E	EAA: out	put (pric	es and va	alues)								
						PRODUCER	PRICE / TON						v	ALUES AT PRO at curren	DUCER PRICE	1		
tem	New-CRONOS code	Description	Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	dom to other acricultural	Sales estic outside of the industry	abroad	Own-account produced fixed capital goods	Change in inventories	Intra-unit consumption (feedingstuffs)	Processing by producers (separable activities)	Own final consumption	Sales (1)	Own-account produced fixed capital goods	Change in inventories	Outpu	t EAA
			7p	10p	11p	12p1	12p2	12p3	13p	16p	7v	10v	11v	12v	13v	167	17v	17v n-1
Codes in	the Regulation (i	EC) 138/2004	6p,animal feedingstuffs	7p	8р		Total sales: 9q		10p	12p	6v,animal feecingstuffs	7v	8v	9v	10v	12v	6v,animal feedingstuffs + 7v to 10v+12v	(6v,animal feedingstuffs 7v to 10v+12v), n-1
17.2	17900	OTHER INSEPARABLE SECONDARY ACTIVITIES (GOODS AND SERVICES)																
18	18000	OUTPUT OF THE AGRICULTURAL 'INDUSTRY' (16+17)																

12v = (12v1 + 12v2 + 12v3) - (imports of live animals as described in 2.070.)

 12v1
 domestic sales to other agricultural units Total

 12v2
 domestic sales to other agricultural units Total

 12v2
 domestic to other agricultural units outside of the industry

 12v3
 Sales abroad

 As indicated, 12v is 9v in the Regulation

#### TABLE 3 Elaboration tables of the EAA: Intermediate consumption (values at current prices)

	Co.to	Description	late of the second seco	Purchases of goods and services for	Purchases of goods and services for	Change in inventories of intermediate	Internet of the second sector of the second sector of the second sector of the second sector of the second s
Item	Code	Description	Intra-unit consumption	intermediate consumption from other units	outside the industry	consumption	Intermediate consumption (actual
19.01	19010	Seeds and planting stock					
19.02	19020	Energy; lubricants					
19.021	19021	electricity					
19.022	19022	-gas					
19.023	19023	-other fuels and propellants					
19.024	19024	-other					
19.03	19030	Fertilisers and soil improvers					
19.031	19031	-Fertilisers supplied by other agricultural holdings					
19.032	19032	-Fertilisers purchased from outside the agricultural					
19.04	19040	Plant protection products and pesticides					
19.05	19050	Veterinary expenses					
19.06	19060	Animal feedingstuffs]					
19.061	19061	-feedingstuffs supplied by other agricultural holding					
19.062	19062	-reegingstums purchased from outside the agricultural industry					
19.063	19063	<ul> <li>feedingstuffs produced and consumed by the same holding</li> </ul>					
19.07	19070	Maintenance of materials					
19.08	19080	Maintenance of buildings					
19.09	19090	Agricultural services					
19.095	19095	Financial intermediation services indirectly measured (FISIM)					
19.10	19900	Other goods and services					
19	19000	Total intermediate services					

Remark : The order of the items are not same in the Elaboration table and in the transmission table and in ANNEX II.

The item "19 TOTAL INTERMEDIATE CONSUMPTION" is last one here in the Elaboration table and the first one in the two other tables.

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# Economic accounts for agriculture manual

The methodological manual provides guidelines to facilitate the compilation of economic accounts for agriculture (EAA) and ensure harmonisation among data compilers. EAA are a satellite account of the European system of national and regional accounts, adapted to the specific nature of the agricultural sector, providing complementary information and concepts.

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